# Texas Weather

## A Review of 1996


Office of the State Climatologist
Department of Meteorology
Texas A&M University
College Station, Texas

Office of the Vice President
for Research,
Associate Provost for
Graduate Studies

College of Geosciences
and Maritime Studies

# Texas Weather

## A Review of 1996

Compiled by

John F. Griffiths
Brian N. Belcher
Karin L. Gleason

August 1997

# ACKNOWLEDGMENTS

We wish to express our gratitude to Dr. Robert A. Kennedy (Vice President for Research and Associate Provost for Graduate Studies), Dr. Robert A. Duce (Professor and Dean of the College of Geosciences and Maritime Studies), and Dr. Gerald R. North (Distinguished Professor and Head of the Department of Meteorology) for financial support of the Office of the State Climatologist, without which this publication would not have been possible.

# AVAILABLE O.S.C. PUBLICATIONS

*Monographs*

| | | |
|---|---|---|
| Texas Weather Pre - 1880 | | $10.00 |
| Decade of Texas Weather 1980 - 1989 | | $10.00 |
| Texas Weather (1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996) | each | $10.00 |
| Engineering Climatic Atlas of Texas | | $10.00 |

*Subscriptions to Monthly Publications*

| | | |
|---|---|---|
| Texas Climate Bulletin | year | $10.00 |
| College Station Monthly Review | year | $10.00 |

## HOW TO REACH O.S.C.


**PHONE** **FAX**

(409) 845-5044 (409) 862-4466

**E-MAIL**

BELCHER@TAMU.EDU

**CAMPUS MAIL**

Office of the State Climatologist, Mail Stop 3150
(Eller O&M Building, Room 1015)

**REGULAR MAIL**

Office of the State Climatologist
Department of Metoeorlogy
Texas A&M University
College Station, Texas 77843-3150


If ordering, please make checks payable to Office of the State Climatologist, and be sure to indicate which publication(s) you would like to order. Thank you!

# TABLE OF CONTENTS

# CHAPTER 1

# INTRODUCTION

This is the tenth volume in a continuing series of annual summaries of the weather of Texas, dating back to 1987. With this publication, the Office of the State Climatologist has now set forth synopses of Texas weather which cover the entire period of 1996 back through the earliest available observations in the early 1800s. (See order form for a listing of available publications.)

As is implied by its frequent presence in conversations, weather is of extreme importance to everyone. In this light, this publication summarizes information for 1996 which is available from a variety of sources, including this office, as well as the National Weather Service and the National Climate Data Center. Due to the necessity of collecting, checking, and organizing all of the data, a full summary such as this is often unavailable until well into the following year.

In this first chapter, an overview of Texas is presented. Figure 1 displays the entire state of Texas by county and includes the 17 "first-order" (National Weather Service) stations in the state as well as Shreveport, Louisiana. Throughout 1995 and into 1996, all of the first-order stations implemented a new observation system known as ASOS (Automated Surface Observing System). This system does not record average sky cover or number of clear, partly cloudy, or cloudy days. ASOS also records wind data in terms of degrees rather than direction (i.e., 270°, or '27', rather than west, or 'W'). At the start of 1996, five first-order stations had not yet converted to ASOS, but by June all of them had instituted the automated system. Houston was the last of these stations to make the change. As a result, gaps and/or changes in data format in the 1996 monthly data will be apparent and are due to the activation of ASOS at these stations (see page 46 for further discussion concerning the institution of ASOS). Supplementing these stations is a network of over 600 "second-order" and "cooperative" stations.

The heavy lines on the map in Figure 1 separate the ten "climatic divisions", which are each comprised of groups of counties whose geography and climates are relatively similar. Figure 2 displays some of the different regions of the state which are mentioned throughout the text, and in Figures 3a-3h one can find the counties which comprise each of the ten climate divisions.


Figure 1. The boundaries of the ten climatic divisions and the locations of the first-order stations.

| | | | |
|---|---|---|---|
| A | Abilene | J | Lubbock |
| B | Amarillo | K | Midland-Odessa |
| C | Austin | L | Port Arthur |
| D | Brownsville | M | San Angelo |
| E | Corpus Christ | N | San Antonio |
| F | Dallas-Fort Worth | O | Victoria |
| G | Del Rio | P | Waco |
| H | El Paso | Q | Wichita Falls |
| I | Houston | R | Shreveport |


Figure 2. Map showing the locations of particular regions in Texas.

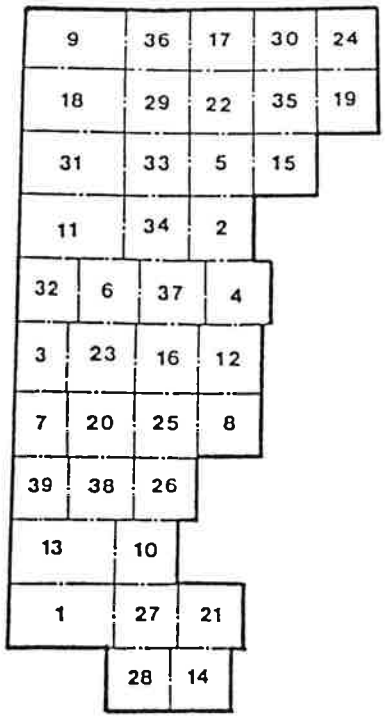



Figure 3a. Counties in Division 1 (High Plains)

1. Andrews
2. Armstrong
3. Bailey
4. Briscoe
5. Carson
6. Castro
7. Cochran
8. Crosby
9. Dallam
10. Dawson
11. Deaf Smith
12. Floyd
13. Gains
14. Glasscock
15. Gray
16. Hale
17. Hansford
18. Hartley
19. Hemphill
20. Hockley
21. Howard
22. Hutchinson
23. Lamb
24. Lipscomb
25. Lubbock
26. Lynn
27. Martin
28. Midland
29. Moore
30. Ochiltree
31. Oldham
32. Parmer
33. Potter
34. Randall
35. Roberts
36. Sherman
37. Swisher
38. Terry
39. Yoakum

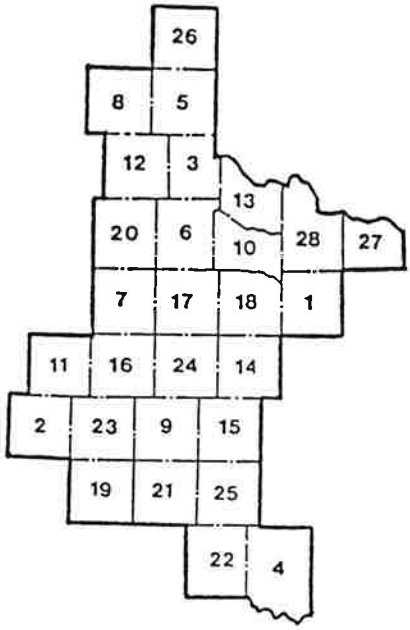



Figure 3b. Counties in Division 2 (Low Rolling Plains)

1. Baylor
2. Borden
3. Childress
4. Coleman
5. Collingsworth
6. Cottle
7. Dickens
8. Donely
9. Fisher
10. Foard
11. Garza
12. Hall
13. Hardeman
14. Haskell
15. Jones
16. Kent
17. King
18. Knox
19. Mitchell
20. Motley
21. Nolan
22. Runnels
23. Scurry
24. Stonewall
25. Taylor
26. Wheeler
27. Wichita
28. Wilbarger

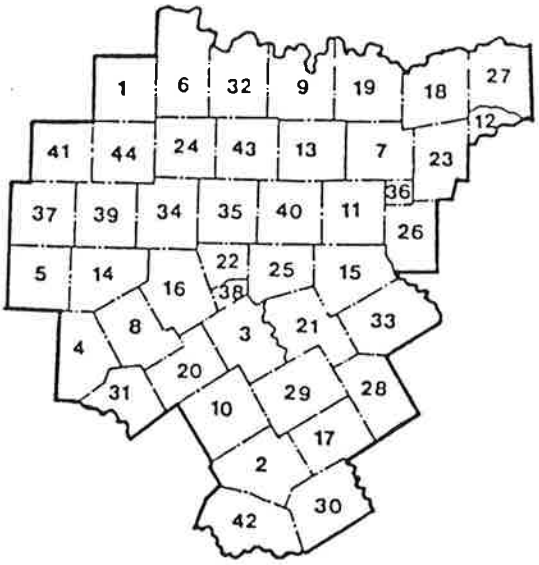
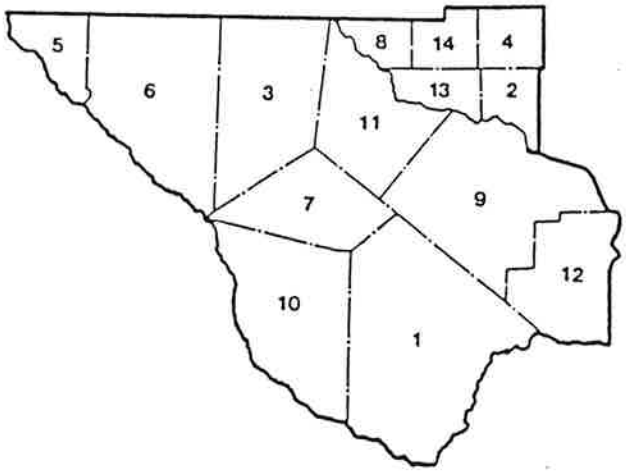



Figure 3c. Counties in Division 3 (North Central)

1. Archer
2. Bell
3. Bosque
4. Brown
5. Callahan
6. Clay
7. Collin
8. Comanche
9. Cooke
10. Coryell
11. Dallas
12. Delta
13. Denton
14. Eastland
15. Ellis
16. Erath
17. Falls
18. Fannin
19. Grayson
20. Hamilton
21. Hill
22. Hood
23. Hunt
24. Jack
25. Johnson
26. Kaufman
27. Lamar
28. Limestone
29. McLennan
30. Milam
31. Mills
32. Montague
33. Navarro
34. Palo Pinto
35. Parker
36. Rockwall
37. Shackelford
38. Somervell
39. Stephens
40. Tarrant
41. Throckmorton
42. Williamson
43. Wise
44. Young

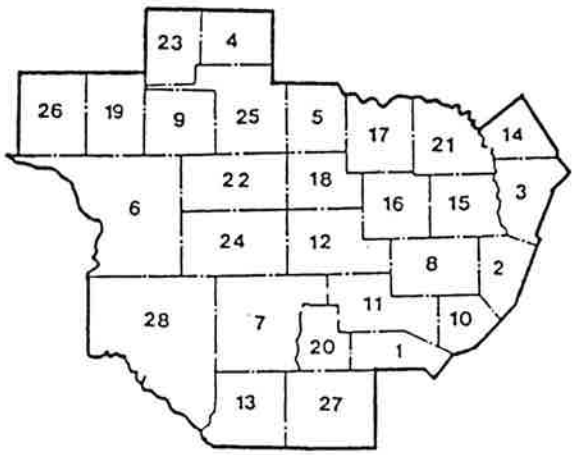

Figure 3d. Counties in Division 4 (East)

1. Anderson
2. Angelina
3. Bowie
4. Brazos
5. Camp
6. Cass
7. Cherokee
8. Franklin
9. Freestone
10. Gregg
11. Grimes
12. Hardin
13. Harrison
14. Henderson
15. Hopkins
16. Houston
17. Jasper
18. Leon
19. Madison
20. Marion
21. Montgomery
22. Morris
23. Nacogdoches
24. Newton
25. Panola
26. Polk
27. Rains
28. Red River
29. Robertson
30. Rusk
31. Sabine
32. San Augustine
33. San Jacinto
34. Shelby
35. Smith
36. Titus
37. Trinity
38. Tyler
39. Upshur
40. Van Zandt
41. Walker
42. Waller
43. Wood




1. Brewster
2. Crane
3. Culberson
4. Ector
5. El Paso
6. Hudspeth
7. Jeff Davis
8. Loving
9. Pecos
10. Presidio
11. Reeves
12. Terrell
13. Ward
14. Winkler

Figure3e. Counties in Division 5 (Trans-Pecos)




1. Bandera
2. Blanco
3. Burnet
4. Coke
5. Concho
6. Crockett
7. Edwards
8. Gillespie
9. Irion
10. Kendall
11. Kerr
12. Kimble
13. Kinney
14. Lampasas
15. Llano
16. Mason
17. McCulloch
18. Menard
19. Reagan
20. Real
21. San Saba
22. Schleicher
23. Sterling
24. Sutton
25. Tom Green
26. Upton
27. Uvalde
28. Val Verde

Figure 3f. Counties in Division 6 (Edwards Plateau)

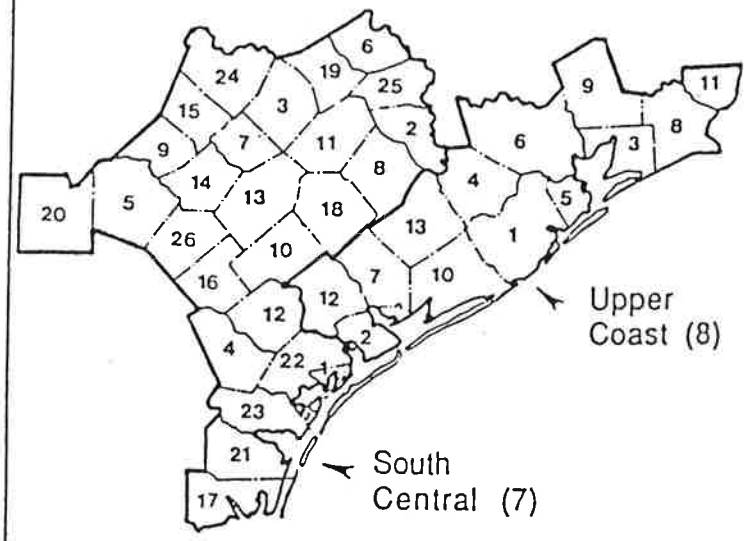



Figure 3g. Counties in Division 7&8
(South Central & Upper Coast)

South Central (7)

1. Aransas
2. Austin
3. Bastrop
4. Bee
5. Bexar
6. Burleson
7. Caldwell
8. Colorado
9. Comal
10. De Witt
11. Fayette
12. Goliad
13. Gonzales
14. Guadalupe
15. Hays
16. Karnes
17. Kleberg
18. Lavaca
19. Lee
20. Medina
21. Nueces
22. Refugio
23. San Patricio
24. Travis
25. Washington
26. Wilson

Upper Coast (8)

1. Brazoria
2. Calhoun
3. Chambers
4. Fort Bend
5. Galveston
6. Harris
7. Jackson
8. Jefferson
9. Liberty
10. Matagorda
11. Orange
12. Victoria
13. Wharton

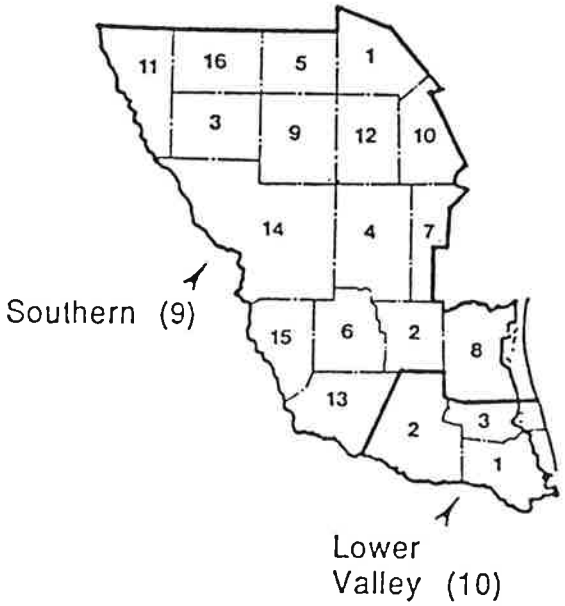



Figure 3h. Counties in Division 9&10
(Southern & Lower Valley)

Southern (9)

1. Atascosa
2. Brooks
3. Dimmit
4. Duval
5. Frio
6. Jim Hogg
7. Jim Wells
8. Kenedy
9. La Salle
10. Live Oak
11. Maverick
12. McMullen
13. Starr
14. Webb
15. Zapata
16. Zavala

Lower Valley (10)

1. Cameron
2. Hidalgo
3. Willacy

# CHAPTER 2

# ANNUAL AND MONTHLY SUMMARIES

On the annual scale, Texas' mean temperature during 1996 was 65.5°F, 0.2°F above the 109-year average. With regards to precipitation, Texas' mean 1996 total was 24.7", which is 3.4" or 12.0% below the long-term average.

Figure 4 depicts the long-term trend in temperature values throughout the state. The values here are calculated by areally weighting the mean values in each climate division mentioned in Chapter 1; the mean values within each division are calculated by the simple mean of all available stations. It is interesting to note the wilder temperature swings present in the data record prior to the 1950s (which may or may not be due to poorer spatial coverage); also, all instances of a mean temperature of greater than 66°F occurred prior to 1957. As can be seen in Table 1, three of the five coolest years in the past century have occurred within the past two decades.

Figure 5 shows the long-term precipitation record, which has been calculated through the same method as the temperature. As a long-term drought would have to affect the majority of the state to be adequately reflected on this diagram, many droughts go unseen. Several do appear however: the drought which occurred in the first half of the 1950s is apparent; also, in more recent memory, the drought of 1988 appears as a significant anomaly within a trend of several normal to wetter-than-normal years in Texas.

It is also worth noting the tendency for wet and cool years to coincide, as well as dry and warm years. This is especially noticeable during the period from 1945 to 1965.

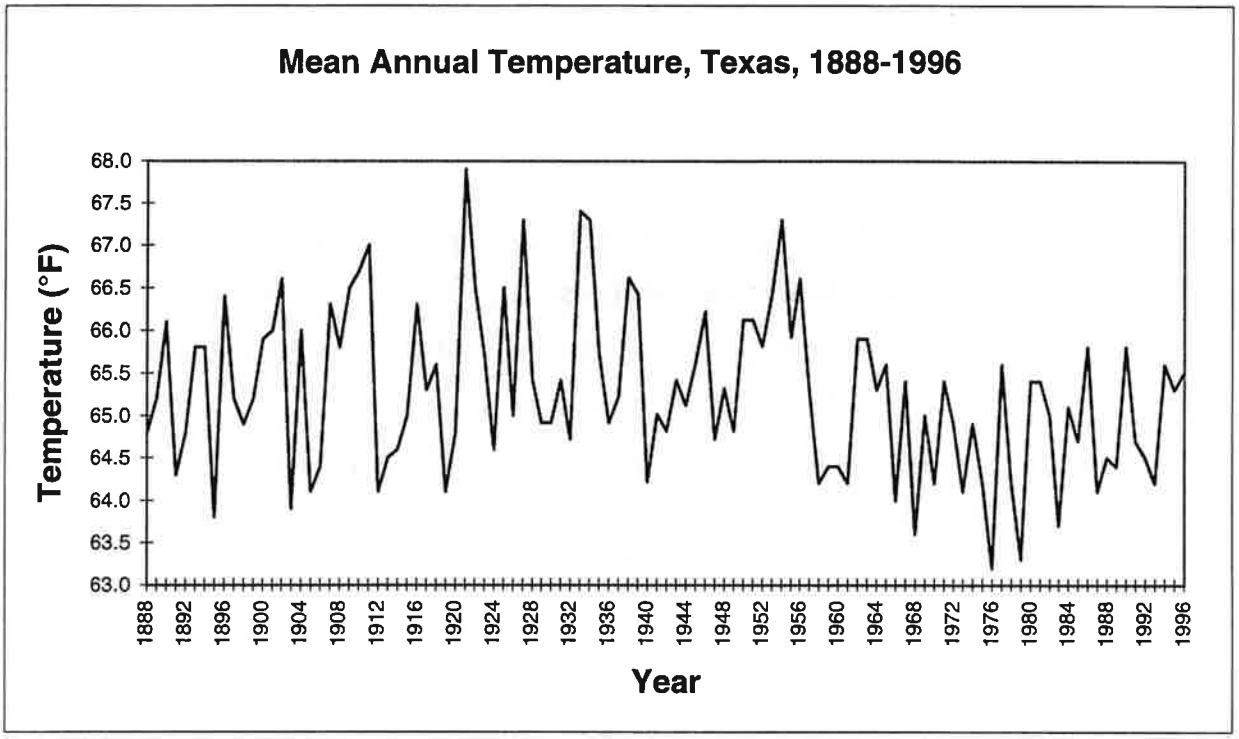



Figure 4. Mean Annual Temperature for the entire state of Texas, for each year from 1888 to 1996

Table 1. The five warmest and five coolest years in Texas during the period 1888 to 1996.

| WARMEST | | COOLEST | |
|---|---|---|---|
| 1921 | 67.9°F | 1976 | 63.2°F |
| 1933 | 67.4°F | 1979 | 63.3°F |
| 1927 | 67.3°F | 1968 | 63.6°F |
| 1934 | 67.3°F | 1983 | 63.7°F |
| 1954 | 67.3°F | 1895 | 63.8°F |

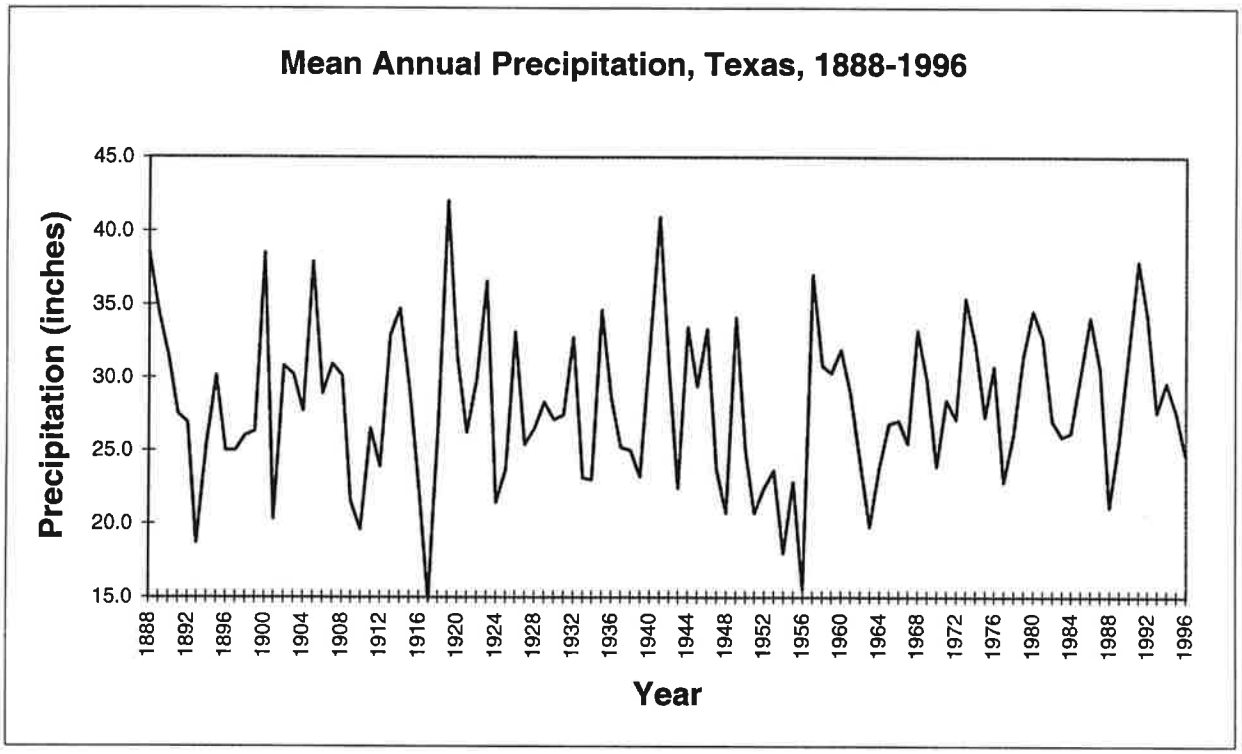



Figure 5. Mean Annual Precipitation for the entire state of Texas, for each year from 1888 to 1996.

Table 2. The five wettest and five driest years in Texas during the period 1888 to 1996.

| WETTEST | | DRIEST | |
|---|---|---|---|
| 1919 | 42.0" | 1917 | 14.8" |
| 1941 | 40.9" | 1956 | 15.5" |
| 1888 | 38.6" | 1954 | 18.0" |
| 1900 | 38.5" | 1893 | 18.7" |
| 1905 | 37.9" | 1910 | 19.6" |

# JANUARY 1996

With the onset of the new year came a mixture of rain, drizzle and snow for North and West Texas as a cold front swept in from New Mexico. Both Midland and Lubbock reported snow on the ground by noon on New Years Day. The storm intensified during the day as a surface low pressure developed over East Texas and temperatures in Dallas dropped throughout the day turning the rain to snow by late evening.

From the period of the 3rd to the 5th, a polar cold front swept down the length of Texas bringing with it very little precipitation and moderating temperatures from the 10s in Northern Texas to the 60s down toward the southern Rio Grande Valley. Much of the Panhandle and Northern Texas experienced slick roads covered with sleet and snow. By the 7th, a high pressure system dominated the Mid-West bringing southerly Gulf winds back into Texas allowing temperatures to rise into the 60s and 70s for much of the region. This system in combination with the passing cold front brought 0.90" of precipitation to Beaumont/Port Arthur: the largest 24-hour rainfall for all Texas first order stations in the month of January.

As the blizzard of 1996 wreaked havoc for much of the East Coast, Texas remained quiet and dominated by fair skies. From the period of the 7th through the 15th, most of Texas remained under a very strong high pressure system allowing temperatures to rise into the 70s and 80s. On the 17th, a well-developed low pressure system traversed the region sustaining winds of 25 to 30 mph with gusts up to 51 mph at the Dallas/Ft. Worth International Airport. At El Paso airport, winds were clocked at 61 mph and knocked down powerlines, blew off roofs, knocked over trees and closed down several airports. One person was killed and three seriously injured when the roof of a supermarket collapsed in Anthony, Texas, northwest of El Paso. A West Texas windplant south of Guadelupe Pass reported a 163.5 mph wind gust. With the lack of precipitation across most of Texas, dust and dirt were blown around causing visibility problems. A tornado, reported in Lancaster, destroyed a man's business, yet caused no injuries.

By the 23rd, temperatures remained warm state-wide as Laredo and McAllen set the high temperature of 90°F for the month while Shreveport was hit by a tornado

injuring about 30 nursing home residents. The coldest polar vortex to date began its journey southward into the Central Plains on the 30th forewarning Texans of the impending cold spell. Dalhart reported the lowest temperature of the month, 3°F, on the 30th as strong winds brought sub-zero wind chills to much of the state throughout the next few days. San Antonio set a record for the driest January on record with only a trace of precipitation which reflected the lack of precipitation state-wide for the month.

# FEBRUARY 1996

The month of February began on a cold note for much of the Lone Star State. Temperatures ranged from the lower 40s in the southern parts of the state to mid 20s in the Dallas/Ft. Worth area. Three inches of snow fell at Amarillo on the 1st while freezing rain made driving treacherous in and around Dallas. Freezing rain was reported as far south as Waco while temperatures continued to drop. On the 3rd, Houston residents woke to find thick sheets of ice covering automobiles and slick overpasses. Slippery roads resulted in at least eight deaths during this period, many of which occurred in Central Texas. Several stations reported trace amounts of precipitation, but nothing substantial enough to break the dry spell. Even Brownsville felt the Canadian polar air mass as high temperatures reached only into the mid 40s the 1st through the 4th. Dallas reported their coldest February 4th on record with a low of 8°F. The low temperature for the month, -3°F, was reported during this period at Amarillo on the 4th.

By the 5th, relief was in sight as a warm front traversed across Texas. Temperatures rebounded back into the 50s and 60s with reports of 70s in West Texas. From the 5th through the 10th, high pressure dominated over the region as temperatures continued to rise into the lower 80s. A weak cold front swept across Texas on the 10th moderating temperatures only slightly and generating very little precipitation. Once again, high pressure dominated the weather the next few days as burning bans became the inevitable result of the drought conditions state-wide. Thousands of acres of farm and ranch land in North and East Texas were claimed by wildfires by the 17th. The threat of even more fires breaking out was looming over many farm and land owners.

The week of the 19th proved to be just as anomalous as the cold spell at the beginning of the month. Temperatures soared into the 80s, 90s, and 100s across most of Texas during this period. McAllen reported a high temperature of 100°F on the 20th, Del Rio 103°F on the 21st, and 101°F in Killeen on the 22nd. Del Rio set the high temperature for the month on the 21st. Record high temperatures were shattered most everywhere as temperatures this warm are usually observed in the middle of summer! Unfortunately, these high temperatures fueled the wildfires and grass fires as well as created a hazard for those trying to extinguish the fires. Many people in North and

Central Texas were forced to leave their home as flames drew closer. Fortunately, by the 27th, a cold front brought some relief as temperatures returned to the 50s and 60s. On the 29th, Austin, Beaumont/Pt. Arthur, Galveston, and San Antonio all reported over 0.50" of precipitation bringing some relief to a very grim weather situation.

# MARCH 1996

Precipitation from the end of February carried over into the beginning of March bringing much needed moisture, yet little relief across the state as the low pressure system which brought the rain continued to move eastward. Temperatures remained relatively mild the 1st and the 2nd with highs in the 50s, 60s, and 70s. By the 3rd, a ridge of high pressure began to take form in the Central Plains advecting warm moist air from the Gulf of Mexico northward and allowing temperatures state-wide to rise into the 70s.

As this ridge continued to build, temperatures continued to rise from the period of the 4th through the 6th. McAllen set the monthly high temperature on the 6th with 99°F as temperatures across the state were in the 70s, 80s, and 90s. Unfortunately, as the ridge moved off to the east, a cold front swept behind causing temperatures to drop into the upper 50s in South Texas and the chilly 40s in Northern Texas where winds gusted up to 30 mph. Small amounts of precipitation accompanied this front. On the 7th, Beaumont/Pt. Arthur reported 0.26" of rain with trace amounts falling over Houston, Lubbock, as well as Midland/Odessa. McAllen's 99°F temperature was followed the next day by a high temperature of 59°F. Dalhart reported the low temperature for the month (5°F), also on the 7th, as several other Texas Panhandle stations had overnight low temperatures in the single digits.

Clear skies and northern breezes allowed for mild and dry days with cool evenings through the 12th. High pressure predominated across the state during this period allowing virtually no precipitation to occur. Temperatures remained seasonable to above average from the 13th to the 14th in anticipation of an advancing cold front located over the Rocky Mountains. Some relief did come as this weak cold front traversed from west to east across the state. On the 14th and 15th, Beaumont/Port Arthur reported 0.03", Dalhart, 0.06", and Galveston, 0.02". On the 18th, Dallas/Ft. Worth received 0.53" of rain: their first significant rainfall all month!

By late on the 23rd, a well-developed low pressure system began its trek across Texas bringing wide-spread rainfall and thunderstorms. On the 24th, gray skies loomed over Dallas/Ft. Worth as 0.59" of rain and hail fell throughout the day and winds knocked out power to many residents. North Texas was also hit hard by winds gusting over 70

mph and tennis ball-sized hail. Tornado warnings were issued with these storms, but no funnels made ground contact. Most of this precipitation was confined to Northern, Central, and Eastern Texas. The 26th brought even more rain as an unstable airmass over Texas brought Dallas (0.92"), Abilene (0.97"), Austin (0.46"), and Wichita Falls (1.79") some needed relief from the drought. Still, much more precipitation is needed all over Texas. Temperatures for the month of March were below normal.

# APRIL 1996

Temperatures were mild and skies were sunny the 1st through the 3rd. Temperatures in the 70s and 80s prevailed over the state as high pressure dominated over the southern Gulf Coast states. By the 4th, a cold front extending form the Great Lakes to New Mexico, swept across Texas bringing with it, cool 40s and 50s. Some precipitation fell with the passage of this front. Temperatures were cool enough on the 5th for the precipitation to fall as snow. 4" of snow fell in the foothills of the Guadelupe Mountains, and a record 2" fell in Midland, where snowfall hasn't been seen in April since 1983. An amazing 18" of snow fell in Sweetwater (Nolan Co.), and the all-time 24 hour snowfall record in Abilene was broken with 9.3". Rain and golf ball-sized hail pelted Navarro and Hill counties. Marble-sized hail up to six inches deep was reported near Leroy. A mixed-bag of precipitation fell over Dallas/Fort Worth with 1.32" reported. In the rest of the state, rain and thunderstorms were scattered: Waco (1.38"), San Angelo (1.76"), El Paso (0.47"), College Station (0.42"), and Austin (0.42") all had significant rainfalls which helped to relieve some of the drought conditions. By the 6th, most of the rain had subsided with the exception of a few locations, including College Station (1.18") and Lufkin (0.47"). Dalhart reported the state's low temperature for the month on the 6th with only 22°F.

Texas was back under high pressure from the 8th to the 12th with temperatures in the 70s, 80s, and 90s. On the 12th, scattered showers were present over much of East Texas. Lufkin reported 0.90" of rain and College Station had 0.33". Clear and sunny skies prevailed from the 15th to the 19th, as temperatures soared into the 90s for much of the state. Cotulla topped out at 103°F on the 19th: the first of three 103°F days across Texas in April. On the 21st, a much needed cold front traversed the state, cooling temperatures into the 60s and 70s and triggering thunderstorms across much of the eastern half of Texas. College Station (1.21"), Houston (1.50"), Lufkin (0.59"), and the Dallas/Fort Worth Metroplex (0.49") all had significant rainfalls. Unfortunately, the thunderstorms to the east of Texas brought significant damage to Arkansas residents. Tornadoes ripped through Fort Smith and Madison County on the 22nd, killing three

children and one adult. Over 800 homes and 90 businesses throughout the area were either damaged or destroyed.

High pressure returned to the region the 23rd through the 27th, allowing temperatures to rise back into the 80s, 90s, and 100s. Cotulla and Del Rio reported a 103°F high temperature on the 25th, as well as Fort Stockton on the 27th. Another cold front swept across Texas the 28th and the 29th bringing severe weather to Central Texas. Rainfall was wide-spread with the most precipitation falling in Austin (0.90"), College Station (1.42"), Beaumont (0.81"), and Lufkin (0.91"). A tornado warning was issued for Limestone County the evening of the 28th. No damage was reported with this storm. Much of the Texas Panhandle, West Texas, and the Rio Grande Valley did not receive much precipitation, if any, this past month and are still in need of significant rainfall if this drought is to end.

# MAY 1996

May was a month of extremes state-wide. From the 1st through the 6th, day-time temperatures were in the 80s, 90s, and even the 100s for most of Texas as a high pressure system dominated the weather. Dalhart reported the low temperature for the month (40°F) on the 1st. With the lack of precipitation this year, many farmers have been irrigating select crops in order to save at least a fraction of their fields. Some communities, such as Hereford, have received as little as 0.15" of precipitation thus far for the year, which has forced many farmers and ranchers to abandon crops and to sell their cattle or move them to a more suitable location for grazing until there is marked relief from the drought. On the 6th, the first measurable rainfall was reported in Tyler (0.32"), Waco (0.38"), and Abilene (0.51").

Temperatures remained in the 80s, 90s, and 100s for the period of the 7th to the 12th. Continued high pressure allowed for little cloud cover during the daytime and the humidity in East Texas providing insulation and keeping evening temperatures relatively warm. With temperatures similar to the normal June or July temperatures, lakes have slowly been evaporating and underground aquifers are beginning to run low. Concerns are now not only for the survival of agricultural products, but for human water consumption as well. On the 11th, afternoon thunderstorms brought power outages, lightning damage, and at least one tornado to Harris County. Hail the size of nickels was reported by Chambers County and The Wharton Police Department reported golf ball-sized hail in association with this family of thunderstorms. Nearly 1.5" of precipitation fell across Harris County on the 11th, which is more than one quarter of their total precipitation for 1996. Big Springs reported hail as large as oranges and grapefruits on the 11th as well as 0.71" of much needed rain. Corpus Christi (1.12"), Beaumont/Port Arthur (0.88"), San Angelo (1.16"), and San Antonio (0.37") all received significant rainfall on the 11th.

The heat continued to persist throughout the remainder of the month breaking many record high temperatures. College Station set six new high temperatures and broke the record for the warmest mean May temperature (81.5°F). The previous record set back in 1927 was 79.2°F. Heath Canyon set the high temperature for the month of May on the

21st with 114°F! The rain that fell in parts of the Panhandle, West, and Central Texas the 26th through the 31st, was heavy enough to flood the parched fields, ironically creating a flood in the midst of a drought. Austin (1.01") and San Antonio (0.74") both received significant rainfall on the 27th, whereas more wide-spread relief came on the 30th as thunderstorms moved from the Panhandle through Western and Central Texas. Still, precipitation for the month is far from normal across the state. Grazing fields have become so sparse that the cattle are now grazing on prickly pears and other usually 'forbidden' plants. Some farmers have begun speculation that this drought could be the worst natural disaster in Texas' history.

# JUNE 1996

Much of Texas experienced some relief from the drought conditions across the state in the month of June. In addition, above normal temperatures across the state were typical, as well. On the 1st, a stationary front was positioned across much of West and North Texas bringing severe thunderstorms and high winds to the Dallas/Fort Worth Metroplex. Power failure occurred across the region as a result of lightning and winds in excess of 100 mph, and crews were not able to restore the power completely for several days. Officially, 0.71" of precipitation fell at the Dallas/Fort Worth International Airport. Temperatures state-wide were primarily in the 80s and 90s on the 1st. By the 2nd, the stationary front had progressed towards the Texas coast as a cold front brought rain to other drought-stricken locations. Houston received 1.40" of precipitation as well as 70 mph winds, nickel-sized hail, and power outages across the area. Unfortunately, one woman was killed by a lightning strike on the 3rd, as another round of thunderstorms traversed the Houston region.

From the period of the 4th to the 10th, temperatures across the state were in the upper 80s, 90s, and even 100s as high pressure and afternoon thunderstorms prevailed. On the 4th, Waco (1.35") and San Angelo (1.53") each received some much needed precipitation. On the 6th and 7th, a weak cold front pushed its way to the Gulf Coast Allowing milder temperatures to prevail across much of the Central and Southern portions of Texas. Rainfall accompanying this front brought relief in and near the communities of Abilene (1.04"), Austin (1.94"), Waco (0.86"), and Wichita Falls (0.50"). The overnight low temperature in Dalhart on the 8th (50°F) was the low temperature in Texas for the month of June.

Temperatures remained in the upper 80s to 100s from the 11th through the end of the month. Precipitation was rather sparse from he 11th to the 15th, as scattered showers brought 0.64" to Dallas/Fort Worth on the 15th. Beaumont/Port Arthur received 2.62" of rain as a result of coastal thunderstorms on the 17th. On the 21st, Laredo and Wink had the Texas high temperature with 109°F (as well as Lajitas on the 10th). From the 23rd to the 30th, an upper level low pressure system over the Gulf of Mexico helped the Coastal and Central Texas communities by bringing afternoon showers to the region.

As parts of Central and Coastal Texas were receiving precipitation, portions of the Rio Grande Valley saw nothing but sunshine. Much of the Rio Grande has dried up forcing wildlife in some locations to search for water and food in more urban areas. Several communities across the state are looking for options as aquifer levels are dropping in level and area lakes are drying up. Another West Texas community is attempting cloud seeding as a means for initiating precipitation over crops and grazelands. Ranchers and corn growers appear to be the hardest hit, while wheat farmers expect a rather healthy harvest.

# JULY 1996

July began as a warm month across the state as a trough of low pressure traversed the Panhandle and Central Texas. High temperatures state-wide on the 1st were in the 90s and 100s as Dalhart picked up 0.21" of precipitation in association with the trough. The Palmer Drought Severity Index (PDSI), an index which measures the departure of the moisture supply based on supply and demand for each region, indicated much of Central and Eastern Texas as being in an 'Extreme Drought' with portions of the Panhandle, The Rio Grande Valley, and the Texas Coast suffering from a 'Severe Drought'. Wortham residents have been waiting for precipitation to fill area lakes which have nearly dried up. This community, like many other communities, depends on local water reservoirs for every day survival. With the persistence of the drought, smaller towns are now forced to conserve water more stringently than has been in past months.

The period of the 3rd through the 8th was extremely hot in the Central United States and just in time for the Fourth of July! This heat-wave encompassed portions of the Texas Panhandle and Northern Texas. The high temperature at Dallas-Ft. Worth International Airport on the 4th was a record 105°F with a 107°F reading reported in Arlington. Fort Worth's Meacham International Airport and Dallas' Love Field each reported a searing 108°F on the 4th. Temperatures to the south of The Metroplex were somewhat cooler where high temperatures only reached 99°F in San Antonio and 103°F in Waco. Unfortunately, several elderly residents lost their lives due to the extreme heat. State-wide, eleven Texas cities saw temperatures reach or exceed 100°F on the 4th with no immediate relief in sight.

Ironically, as most of the state was experiencing the largest heat-wave of the season, Marfa reported the low temperature for the month (57°F) on the 6th as well as on the 26th. On the 7th, Wichita Falls reached the high temperature for the month of July with 110°F. By the 9th, a cool front from the north brought some precipitation to the area over the next couple of days as well as cooler temperatures as it swept across the state. On the 9th, Amarillo (0.46"), Dalhart (0.38"), Lufkin (0.61"), and Waco (0.41") each reported significant rainfall in association with this front. Amarillo and Dalhart received

an encore performance on the 10th with 0.80" and 0.73", respectively. Scattered showers persisted over the next few days as the heat returned.

On the 14th, thunderstorms traversed the Dallas/Ft. Worth area bringing a much needed 2.12" of precipitation. Temperatures remained in the 90s and 100s from the 14th through the 23rd with sporadic and scattered thunderstorms present across the state. From the 24th to the 26th, another cool front lingered along the northern Texas border which aided in the development of thunderstorms in East Texas. Beaumont (0.57"), College Station (1.87"), Lufkin (0.30"), and Waco (0.39") each reported precipitation on the 25th.

Precipitation was also received on the 27th in Dalhart with 1.32" as the low pressure system moved off to the east. On the 31st, Texarkana received an astounding 4.01" in association with a stationary front, which helped to alleviate drought conditions. On a whole, the month of July was an improvement on past months with several first-order stations reporting precipitation totals above normal for the month.

# AUGUST 1996

The heat of July carried into August as 90s and 100s blanketed the state from the 1st through the 8th. Precipitation was scattered throughout this period with only trace amounts reported at Dallas/Ft. Worth International Airport on the 2nd. Wichita Falls reported a steamy 106°F temperature on the 4th -- the high temperature for the state in August. Drought conditions at the beginning of the month for South Texas, the Upper Coast, and parts of the Panhandle were classified in the 'severe' category, whereas West Texas was considered to be in a 'moderate' drought.

On the 8th, a cool front traversed parts of Northern and Eastern Texas bringing scattered showers to the region. Temperatures cooled off into the 80s and 90s across the state. Marfa reported a low temperature of 55°F on the 12th (15th, 21st, 22nd, and 31st) which was the state low for the month. Beaumont/Pt. Arthur (0.12"), Texarkana (0.67"), and Tyler (0.64") each received much needed rains on the 12th and again on the 13th. Showers and thunderstorms pelted the Gulf Coast as Beaumont/Pt. Arthur received 0.59", Galveston, 0.74", and Victoria, 0.46". Thunderstorms in the Houston area caused some damage to businesses and homes. A tornado warning was issued that afternoon for portions of Brazoria County. In Danbury (Brazoria Co.), winds uprooted trees and small hail was reported. Fortunately, no major damage was reported and nobody was injured. On the 14th, Houston officially reported 2.08" of precipitation.

More scattered showers were reported on the 16th and 17th as Dallas/Ft. Worth collectively totaled 0.38". On the 18th, El Paso (0.84"), and Texarkana (1.67") each received showers, as well. The next day, Austin reported 1.79", Hobby Airport in Houston, 1.16", and Victoria, 0.59" as flood conditions were felt across the region.

For the remainder of the month, precipitation dominated Texas weather as Hurricane Dolly made landfall near Tampico, Mexico. Moisture from both the Gulf and the remnants of Hurricane Dolly were entrained into Texas allowing for numerous showers and thunderstorms to occur. Even though Dolly did not make landfall in Texas, it significantly affected our weather. Brownsville reported a small twister which ripped off roofs and uprooted trees. Fortunately, no one was injured during this storm. Tides were high during this period along the coast from South Padre Island up to Corpus

Christi. As a result, beaches and roads were temporarily closed along this stretch of land. Temperatures remained moderate for this time of year in the upper 80s as clouds covered most of Texas. Many areas along the coast received upwards of 3 to 5 inches of precipitation which caused annual precipitation totals to skyrocket. Even with the consistent and heavy rainfall in the last half of August, annual precipitation totals are still below normal for many locations, yet in better shape than they were last month!

# SEPTEMBER 1996

Rainy conditions slowly exited Texas over the 1st and 2nd as the wet end to August continued into September. Austin reported precipitation (0.80") on the 1st along with several other Central and Eastern Texas stations. By the 2nd, precipitation was confined along the Gulf Coast as Labor Day beach goers were driven away by afternoon thunderstorms in Galveston, as 0.68" of rain fell. Temperatures were primarily in the 80s and 90s from the 1st through the 4th as another round of scattered showers, associated with a trough of low pressure, approached Texas. Midland/Odessa (0.23"), Corpus Christi (0.22"), and Brownsville (0.44") were recipients of strong afternoon showers on the 4th, which persisted for the next several days across the area.

By the 13th, Hurricane Fausto was pounding southern Baja California and was projected to weaken and move northeast into Mexico and eventually into Texas. Brownsville reported 3.56" of precipitation on the 13th as Gulf moisture combined with the outskirts of Fausto entered the region. On the 15th, remnants of Fausto spawned severe weather across much of Texas. Wind gusts up to 65 mph were reported in Guadelupe County. Possible funnel clouds were indicated in southwestern Uvalde County, near Dabney and Blewett, as well as in Edwards County, south of Carta Valley. No damage was associated with these funnel clouds. High winds in Houston left 50,000 customers without power for a portion of the day. A Texas A&M Experiment Station rain gauge in northwest Edwards County measured an amazing 2.09" of precipitation in one hour. Official totals for the day were 2.75" in Abilene, 1.54" in San Angelo, and 0.96" in San Antonio, just to name a few. Temperatures during this period remained in the 80s and 90s.

On the 16th, Cotulla reported the high temperature for the month of 101°F as a Canadian cold pool began its plunge southward into the US. Temperatures dropped into the lower 30s in parts of the Rocky Mountains while the Panhandle began to cool into the lower 70s. With the distinct contrast in air masses along the cold front, thunderstorms and flooding were eminent. Portions of the Panhandle were under flash flood warnings as dams overflowed and heavy rains continued to fall. By the 20th, severe thunderstorms were developing in Central and Eastern Texas. A tornado warning was issued for Milam

County early in the evening as thunderstorms moved southeast. This tornado warning continued for several hours through Burleson, Washington, and Austin Counties before it weakened in strength. Temperatures dropped to a chilly 36°F in Amarillo in the 28th, marking the coldest station in September and the beginning of fall.

# OCTOBER 1996

The month of October began with a high pressure system dominating the Central Plains. On the 1st, temperatures across Texas were fairly homogeneous as highs reached the middle and upper 80s. By the 2nd, a cold front brushed the Northern Texas border bringing with it cooler temperatures and light rain showers. Temperatures did moderate some as highs reached into the 70s and 80s. On the 4th, large amounts of precipitation fell in South Texas causing major flooding in and around the Brownsville area. The flooding was a result of Tropical Depression Hernan along the west coast of Mexico and a low pressure system developing in the western Gulf of Mexico, both of which channeled moisture towards South Texas. 7.41" of precipitation fell in Brownsville on the 4th forcing some residents to abandon their homes for drier land. Flood and flash flood warnings were posted for Cameron, Hidalgo, Willacy, and Kenedy counties through the morning of the 5th. The next day, Brownsville received more precipitation (2.15") along with Houston (1.05"), McAllen (0.93"), and Del Rio (0.26"). Coastal flood watches were posted as seas were rough all along the Gulf Coast.

Weather conditions calmed over the next couple of days as the sun returned to Texas. Temperatures remained in the 70s and 80s from the 7th through the 10th as high pressure built over the Rocky Mountains. On the 11th and 12th, Heath Canyon (Brewster Co.) reported the October high temperature of 96°F while many other stations reported highs in the lower 90s. By the 16th, a potent cold front began moving towards Texas bringing very cold temperatures behind it. By the 18th, the front had passed into the Gulf of Mexico and moderated our temperatures significantly. Highs were only in the 60s and 70s for much of Texas.

The next cold front, arguably the most damaging of all the October cold fronts, brought 30s and 40s to much of the northern half of Texas. Snow accumulations of up to 3 inches were reported from Dalhart down to Lubbock. The Dallas/ Fort Worth Metroplex reported widespread accounts of damaging winds, hail, and thunderstorms. Winds estimated at about 80 mph ripped the roofs off apartment complexes and several homes. At least 120 families were left homeless as a result of the severe weather. Numerous power outages were reported in association with the bands of severe weather

that traversed the area for much of the day. Hail as large as softballs was reported in the Grapevine and Lewisville areas. Fortunately, power was restored to most residents by the end of the day. Precipitation totals for the day included 1.81" at the D/FW Airport and 3.95" in Texarkana. Temperatures reached a low for the month on the 23rd as Marfa reported an overnight low of 21°F, yet rebounded as the front cleared the area just in time for the arrival of the next frontal system. The cold front associated with this system stalled out along the Texas Panhandle causing several days of persistent rains resulting in wide-spread flooding.

# NOVEMBER 1996

As the floods began to subside in southwest Texas, temperatures remained rather diverse across the state. On the 1st and 2nd, temperatures ranged from the middle 50s around Amarillo to the low 90s in extreme south Texas as a cold front pushed through the state. Longview (0.25"), Texarkana (0.77"), and Tyler (0.31") each received a measurable amount of precipitation on the 1st. Skies cleared from the 3rd to the 6th as high pressure dominated most of Texas. Temperatures over the 4 day period ranged from the mid 60s to the lower 90s. On the 6th, Lajitas reported the November high temperature (97°F) as a potent cold front approached from the North. Fortunately, Texas was spared from the tornadoes which caused some damage in Louisiana. Even so, Beaumont/Port Arthur (1.17"), Lufkin (1.02"), San Angelo (1.10"), Texarkana (1.27"), Tyler (1.16"), Waco (1.21"), and Wichita Falls (1.13") each reported over an inch of precipitation in association with this front as well as strong gusty winds.

Temperatures rebounded from this cold front rather quickly as 60s and 70s covered most of the state from the 8th to the 10th. As much of the Great Lakes Region was being buried by several feet of snow, Texas continued to remain warm and pleasant in the 60s, 70s, and 80s from the 11th to the 14th. As the 15th approached, so did another cold front bringing with it, more precipitation and cold weather. On the 16th, Beaumont/Port Arthur received 1.85" whereas Texarkana received an additional dose of precipitation this month with 1.73" on the 17th. Tyler reported 1.35" as well on the 17th.

High pressure dominated the state once again as the cold front pushed off to the east. By the 20th, temperatures had risen into the upper 80s and lower 90s in some parts of Central and Southern Texas as warm and moist Gulf air surged northward. By the 22nd, a developing low pressure system was deepening over the Rocky Mountains as temperatures moderated somewhat across Texas. On the 24th, North Texas was greeted by winter as temperatures dropped below freezing for the first time this season. Sleet and single-digit wind chills fell over the Dallas/Fort Worth Metroplex as icy roads led to many accidents and unfortunately, one death. Eight inches of snow was reported in San Angelo as much of the Hill Country was blanketed by the frozen precipitation which stuck around for about a day. Farther south, severe thunderstorms were reported with a

dramatic drop in temperature. A tornado was spotted near Alice (Jim Wells Co.) as hail up to half an inch in diameter fell around the region. Heaviest rainfall were at Cotulla (LaSalle Co.) (4.05"), Mineral Wells (Palo Pinto Co.) (2.31"), and Dallas (1.89"). On the 27th, the low temperature for the month of November was reported in Amarillo as overnight temperatures dropped to a chilly 16°F.

# DECEMBER 1996

Mild conditions prevailed across much of Texas the beginning of December. Temperatures were primarily in the 60s and 70s as the first in a string of cold fronts approached from the north. No measurable precipitation was associated with this event, yet temperatures cooled about 10°F. On the 4th and 5th, a more potent cold front swept across Texas bringing precipitation to the central portions of the state. Austin (0.23"), San Antonio (0.29"), and Waco (0.70") each received measurable rainfall amounts.

By the 7th, temperatures in South Texas were unseasonably warm due to southwest winds blowing off the Mexican Plateau. McAllen reported a high temperature of 92°F on the 7th; the high temperature for the month of December. By the 9th, a bitter winter snow storm had ravaged New England while Texas remained in the clear with temperatures in the 70s and 80s. Temperatures continued on the warm side through the 14th with little to no precipitation reported.

Winter returned to Texas in full force on the 15th as an Arctic front ushered in below freezing temperatures and wide-spread snowfall. Central Texas was hit hard by this snow event as up to an inch of snow fell in parts of Austin. Port Arthur (1.17"), College Station (1.27"), Houston (1.74"), and Waco (1.86") all reported over an inch of precipitation. Snow was reported even as far south as College Station where silver dollar sized flakes blanketed the sky for at least 20 minutes! Precipitation accumulations on the 16th, both liquid and otherwise, were noticeable across much of Texas as Port Arthur (0.76"), Houston (1.16"), Lufkin (0.83"), and Texarkana (0.43") each reported significant totals. By the 17th, snow had fallen in Houston as temperatures dropped into the upper 20s. Blizzard-like conditions consumed the Northern Plains states as Interstate highways were impassable. At least 5 deaths were reported in Oklahoma in association with the icy road conditions. Even parts of the deep south reported over 3 inches of snow as record low temperatures were broken. On the 19th, Dalhart reported the lowest temperature of the month as well as the season with a frigid -3°F!

Within the next couple of days, temperatures warmed significantly into the 60s, 70s, and even 80s in far South Texas, yet moderated by Christmas day as most of Texas experienced highs in the upper 40s and 50s. Unfortunately, foggy conditions in

Louisiana were the impetus for a 70 vehicle pileup along Interstate 10 on the 31st, killing one and injuring at least 29 others. Temperatures remained in the 60s, 70s, and 80s as 1996 came to a close.

# CHAPTER 3

# MAJOR WEATHER EVENTS

This chapter presents descriptions of some of the more interesting weather events to occur in the state during the latter part of 1995 and 1996. These accounts are drawn from relevant issues of Storm Data, a monthly publication by the National Oceanic and Atmospheric Administration (NOAA), as well as the Texas Climate Bulletin, published by the Office of the Texas State Climatologist. This summary covers storms from October 1995 to October 1996. The November 1996 through December 1996 information will appear in "Texas Weather 1997".

Following these descriptions is a table summarizing damages and casualties for the year which came as a direct result of extreme weather events in the state. These figures are also provided by Storm Data.

**1 October 1995**

A supercell thunderstorm moving to the southeast pummelled Alpine (Brewster County) with large hail (up to 2" in diameter) and high winds. Wind gusts were measured at 56 mph during the storm. The west and northwest sides of the city were hardest hit with many damaged cars, windows knocked out of numerous houses, and about 200 homes having the paint blasted off the exterior walls. The total property damage was estimated at about $3 million.

**17 December 1995**

Strong thunderstorms produced three tornadoes, all of which touched down in Matagorda County. Numerous homes were damaged and one trailer was destroyed during the storm -- no one was injured during these incidences. Total cost of the destruction from the three twisters was estimated at $1.3 million.

**17 January 1996**

The widespread occurrence of high winds across West Texas and Southern New Mexico produced damage estimated at $10 million. Eighty percent of the cost was from damaged roofs, especially on Fort Bliss and in Central El Paso. The most serious incident occurred when three people were killed as a roof partially ripped off a supermarket in Anthony.

**21 February 1996**

Anomalously high temperatures were reported over the entire state as Texans experienced heat typical of summer rather than winter. Many records were shattered as the previous records of mid-80 degree F temperatures gave way to temperatures in the high-90s and low-100s. In some regions, temperatures this high had not been observed before the month of May. A summary of the records broken on this day is given in the table below.

Table 3. Records broken on February 21, 1996

| Location | February 21st High Temperature | Previous Record |
|---|---|---|
| Abilene | 92° | 85°, 1971 |
| Amarillo | 81° | 80°, 1935 |
| Austin | 99° | 97°, 1986 |
| College Station | 99° | 88°, 1917 |
| Corpus Christi | 90° | 87°, 1962 |
| Del Rio | 103° | 89°, 1986 |
| Dallas/Ft. Worth | 95° | 83°, 1925 |
| Houston | 89° | 84°, 1980 |
| Lubbock | 84° | 82°, 1935 |
| Midland | 88° | 85°, 1972 |
| San Antonio | 100° | 89°, 1899 |
| Waco | 96° | 84°, 1917 |

**2-3 March 1996**

Forest fires were caused from the combination of extremely dry conditions, low humidities, strong winds and dormant winter vegetation. Several large grass fires burned 10,000 acres in Ellis County and 15,000 acres in Coryell County.

**5 April 1996**

A cold front passing through Texas dumped 18" of snow on Sweetwater (Nolan County), while an all-time 24 hour snowfall record was broken in Abilene when 9.3" fell across the region. Two inches of snow fell in Midland from this system, where it was the first time since 1983 that snow fell in April.

**May-June 1996**

Drought conditions engulfed Texas as anomalously high temperatures and anomalously low precipitation occurred over the state. Mean monthly temperatures for May were some of the highest ever over Texas, while June and July were also significantly warmer than normal. The hot temperatures caused evaporation to eat away at the available water supplies -- supplies which were not replenished by rainfall due to the extremely dry conditions over this period. Although the drought conditions were most severe during these months, most regions of Texas experienced well below normal precipitation for the majority of 1996. A summary of the damage to property and crops due to the drought is included in Table 4.

**1-9 July 1996**

A ridge of high pressure developed over the Southern Plains during the first week of the month. A dry air mass, dry soils, light downslope winds and stong solar heating contributed to temperatures at or above 100 degrees for 7 consecutive days across much of North Texas. Excessive heat advisories were issued for this region as heat indices of 110 to 120 degrees were prevalent during the afternoon hours. Nine elderly people died from heat related problems during this heat wave.

**Late August 1996**

Hurricane Dolly made landfall near Tampico, Mexico, which significantly affected the weather in Texas. Showers and thunderstorms associated with Dolly produced much needed rain over a large portion of the state. A small tornado during this time destroyed homes and uprooted trees near Brownsville.

**19 September 1996**

Heavy precipitation in the early morning hours of the 19th caused a flash floods in downtown Houston and Pasadena. The water produced widespread street flooding which made its way into homes and businesses causing over $1 million in damage.

**5-8 October 1996**

A combination of high pressure across the eastern U.S. and Tropical Storm Josephine produced strong gradient winds which caused coastal flooding along the Upper Texas Coast. Tides ranged from 2 to 5 feet above astronomical predicted levels and caused substantial beach erosion, damaged beach houses and low lying coastal roads. Seven homes were destroyed and 75-80 homes were damaged at an estimated cost of $21 million.

Table 4. Monthly data concerning extreme weather events. For each type of event, the number of people killed and injured are listed. Also, property damage and crop damage estimates are listed, according to the following scale:

| | | | |
|---|---|---|---|
| 1 | $1 to $50 | 5 | $50,000 to $500,000 |
| 2 | $50 to $500 | 6 | $500,000 to $5 million |
| 3 | $500 to $5000 | 7 | $5 million to $50 million |
| 4 | $5000 to $50,000 | 8 | $50 million to $500 million |

Note: There were no deaths, injuries, property damage or crop damage due to hurricanes or tropical storms. Statistics for October through December are included for 1995 because they were unavailable for last year's publication.

| | **1995** | | | **1996** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |
| **TORNADOES** | | | | | | | | | | | | | |
| Number | 1 | 0 | 10 | 8 | 1 | 2 | 23 | 36 | 8 | 3 | 8 | 34 | 8 |
| Days | 1 | 0 | 3 | 1 | 1 | 1 | 5 | 9 | 5 | 3 | 6 | 11 | 1 |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries | 0 | 0 | 1 | 7 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 2 | 0 |
| Property | 0 | 0 | 6 | 6 | 4 | 0 | 5 | 6 | 3 | 4 | 4 | 6 | 6 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **HAIL** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Injuries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 1 | 0 | 0 |
| Property | 5 | 5 | 5 | 5 | 0 | 8 | 8 | 7 | 6 | 4 | 4 | 5 | 6 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7 | 4 | 4 | 0 | 5 |
| **THUNDERSTORM WINDS** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| Property | 4 | 5 | 6 | 5 | 0 | 5 | 6 | 7 | 7 | 6 | 6 | 6 | 5 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 4 | 4 | 0 | 0 | 0 |

Table 4 (continued).

| | 1995 | | | 1996 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |
| **HIGH WINDS** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Property | 0 | 4 | 0 | 6 | 4 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **LIGHTNING** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 2 | 0 | 0 |
| Injuries | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 1 |
| Property | 0 | 3 | 0 | 0 | 0 | 4 | 5 | 3 | 6 | 6 | 4 | 3 | 0 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FLASH FLOODS** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Injuries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Property | 0 | 4 | 5 | 4 | 0 | 0 | 0 | 0 | 6 | 6 | 6 | 6 | 2 |
| Crop | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 5 | 4 |
| **FLOODS** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Injuries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Property | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |

Table 4 (continued).

| | 1995 | | | 1996 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |
| **HEAVY SNOW & BLIZZARDS** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Property | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ICE STORMS** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Property | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crop | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **DROUGHT-RELATED** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Property | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 7 | 7 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 7 | 8 | 7 | 7 |
| **HEAT-RELATED** | | | | | | | | | | | | | |
| Deaths | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Injuries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Property | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crop | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# CHAPTER 4

# DIVISIONAL AND FIRST ORDER STATION AVERAGES

Tables 5 and 6 show the monthly divisional average temperature and total precipitation and their deviations from normal. Drought conditions swept across Texas in 1996 as well below normal precipitation was observed in many locations. Normal monthly precipitation was not observed in any region of Texas until the High Plains received 102% of the normal rainfall in June. Along with the extremely dry conditions, anomalously warm temperatures, especially in February, May, June and July broke many records statewide, and caused 1996 to be warmer than normal in every climate region across Texas. Departures ranged from 0.2°F in the High Plains to 1.5°F in the Trans Pecos region.

January precipitation was almost non-existent in the southern portion of the state, and minimal elsewhere to start off the year; four of the ten climate regions received less than 10% of the normal monthly precipitation. Mean monthly temperatures were 1 to 2 degrees F above normal over most of Texas.

The beginning of February was very cold across most of the state, but this was not characteristic of the remainder of the month. After this first week, when snow and ice were reported as far south as Waco, temperatures began and continued to rise throughout the month as 80s, 90s and 100s were observed over most of the Lone Star State near the latter part of February. In most places, mean monthly temperatures were greater than 4°F above normal, while all regions received less than half of the normal monthly precipitation throughout the state.

The hot trend reversed during March and April as temperature anomalies were as far below normal in March as they were above normal in February. Relatively no relief from the dry conditions occurred during March as all regions in Texas again received significantly below normal precipitation. April did provide above normal precipitation for extreme West and East Texas, but all other locations were not as lucky. The Panhandle suffered most during April as Amarillo and Lubbock received 0 percent and 11 percent of their normal monthly precipitation, respectively.

Extreme heat, even more anomalous than February, returned to Texas during May. West Texas observed monthly temperatures greater than 8 degrees F above normal.

In other regions of the state, except near the Texas Coast where the water modifies temperature extremes, anomalies of 6 and 7 degree F above normal were experienced. Drought conditions continued to become worse throughout May. The Southern Panhandle was the only location in Texas to receive greater than 70 percent of the normal monthly precipitation.

Temperatures remained 2 to 3 degrees F above normal for June and July. The intense heat, in combination with the continued devastating lack of rainfall throughout Texas, drew down lakes and reservoirs to minuscule levels. The Palmer Drought Severity Index indicated much of Central and Eastern Texas as being in an "Extreme Drought" while a "Severe Drought" was being experienced in the Panhandle, the Rio Grande Valley, and the Texas Coast.

August brought much needed relief to the state as all locations reported above normal precipitation. Rain amounts were as much as 400 percent above normal across Central Texas and at least 200 percent above normal in many other regions. The break from dry conditions was caused mainly by the remnants of Hurricane Dolly which allowed for numerous showers and thunderstorms to occur. During this welcome relief, monthly temperatures were slightly below normal.

As quickly as hopes of escaping the drought were excited in August, they were destroyed in both September and especially October. Except for a tongue of moisture between Dallas and San Angelo, rainfall departures once again reached devastating values in October -- 25 percent of normal rainfall was typical for most of Texas.

A line extending across Midland and Waco separated below normal temperatures to the north from above normal temperatures to the south in November. Except for extreme West and South Texas, precipitation amounts were well above normal across the state. But as learned a few months earlier, Mother Nature can play with our emotions. December returned Texas to well below normal rainfall conditions, ending a year Texans will not soon forget and hope not to experience again for quite some time.

Table 5. 1996 Average Temperatures by month by division. Bold values indicate actual mean temperature (°F), non-bold values indicate the departure from the 1961 - 1990 normals.

| | High Plains | Low Rolling Plains | North Central | East Texas | Trans-Pecos | Edwards Plateau | South Central | Upper Coast | Southern | Lower Valley |
|---|---|---|---|---|---|---|---|---|---|---|
| | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* |
| **January** | **37.1** | **41.0** | **43.3** | **45.8** | **46.5** | **46.4** | **52.6** | **53.0** | **55.5** | **60.4** |
| | 0.4 | 0.4 | 0.0 | 0.5 | 2.0 | 0.8 | 1.5 | 1.4 | 2.2 | 2.8 |
| **February** | **43.8** | **48.9** | **51.6** | **52.6** | **54.0** | **53.2** | **58.0** | **57.4** | **60.8** | **63.6** |
| | 2.9 | 3.7 | 3.8 | 3.3 | 5.0 | 3.3 | 3.1 | 2.7 | 3.4 | 2.5 |
| **March** | **44.9** | **49.6** | **52.1** | **52.4** | **53.5** | **54.1** | **57.5** | **57.3** | **60.8** | **63.7** |
| | -3.7 | -4.1 | -4.3 | -5.1 | -2.7 | -4.1 | -5.1 | -4.7 | -4.9 | -4.7 |
| **April** | **57.7** | **62.3** | **63.4** | **63.6** | **64.3** | **65.8** | **69.0** | **67.4** | **72.2** | **72.4** |
| | -0.8 | -1.2 | -2.0 | -2.1 | -0.7 | -1.1 | -1.1 | -2.0 | -1.3 | -2.7 |
| **May** | **73.4** | **78.2** | **78.3** | **77.5** | **79.8** | **79.7** | **80.8** | **79.2** | **83.7** | **81.5** |
| | 6.5 | 6.8 | 6.0 | 5.2 | 7.3 | 6.2 | 5.0 | 3.7 | 4.9 | 2.2 |
| **June** | **77.0** | **80.8** | **80.9** | **79.8** | **82.5** | **82.8** | **83.0** | **81.7** | **86.4** | **84.4** |
| | 2.0 | 2.0 | 1.5 | 1.0 | 3.1 | 3.3 | 1.8 | 0.9 | 3.0 | 1.4 |
| **July** | **78.4** | **83.8** | **85.3** | **84.1** | **82.8** | **85.4** | **85.9** | **84.6** | **88.0** | **86.6** |
| | -0.5 | 0.8 | 1.6 | 1.8 | 1.9 | 3.0 | 2.2 | 1.5 | 2.6 | 2.2 |
| **August** | **75.6** | **80.1** | **81.3** | **80.5** | **78.5** | **82.1** | **83.9** | **82.6** | **85.6** | **84.9** |
| | -1.5 | -1.6 | -2.0 | -1.7 | -0.8 | 0.3 | 0.0 | -0.5 | 0.2 | 0.2 |
| **September** | **67.3** | **71.7** | **73.9** | **74.1** | **73.0** | **75.3** | **79.1** | **79.2** | **82.1** | **82.8** |
| | -2.7 | -2.5 | -2.6 | -2.3 | -0.8 | -0.8 | -0.3 | 0.1 | 1.0 | 1.1 |
| **October** | **58.8** | **63.2** | **65.9** | **65.9** | **64.9** | **66.3** | **71.8** | **71.4** | **74.3** | **75.8** |
| | -0.9 | -0.9 | -0.6 | -0.6 | 0.5 | -0.3 | 0.7 | 0.5 | 1.4 | 0.6 |
| **November** | **47.0** | **51.1** | **54.6** | **55.8** | **55.2** | **56.7** | **63.0** | **64.0** | **65.9** | **70.1** |
| | -0.7 | -1.3 | -1.0 | -1.1 | 1.7 | 0.5 | 0.9 | 1.5 | 1.9 | 2.2 |
| **December** | **40.2** | **46.1** | **49.1** | **51.2** | **48.0** | **49.3** | **56.6** | **58.4** | **57.7** | **63.7** |
| | 1.4 | 3.0 | 2.7 | 2.9 | 1.9 | 1.5 | 2.6 | 3.7 | 1.8 | 3.2 |
| **Annual** | **58.4** | **63.1** | **65.0** | **65.3** | **65.3** | **66.4** | **70.1** | **69.7** | **72.8** | **74.2** |
| | 0.2 | 0.4 | 0.3 | 0.2 | 1.5 | 1.1 | 0.9 | 0.7 | 1.4 | 0.9 |

Table 6. 1996 Average Precipitation by month by division. Bold values indicate actual mean precipitation (inches), non-bold values indicate the percentage of the 1961 - 1990 normals.

| | High Plains | Low Rolling Plains | North Central | East Texas | Trans-Pecos | Edwards Plateau | South Central | Upper Coast | Southern | Lower Valley |
|---|---|---|---|---|---|---|---|---|---|---|
| | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* |
| **January** | **0.09** | **0.33** | **0.87** | **1.60** | **0.14** | **0.06** | **0.08** | **2.12** | **0.00** | **0.04** |
| | 20 | 42 | 49 | 47 | 35 | 6 | 4 | 60 | 0 | 3 |
| **February** | **0.11** | **0.08** | **0.28** | **0.53** | **0.10** | **0.26** | **0.38** | **0.76** | **0.13** | **0.09** |
| | 16 | 7 | 12 | 15 | 22 | 19 | 17 | 26 | 10 | 6 |
| **March** | **0.16** | **0.90** | **1.83** | **1.73** | **0.03** | **0.58** | **0.89** | **0.74** | **0.21** | **0.30** |
| | 17 | 67 | 69 | 46 | 9 | 48 | 51 | 29 | 26 | 46 |
| **April** | **0.21** | **0.87** | **2.49** | **3.55** | **0.49** | **1.67** | **1.69** | **1.80** | **0.76** | **0.86** |
| | 19 | 47 | 78 | 89 | 96 | 84 | 66 | 62 | 42 | 63 |
| **May** | **1.57** | **1.73** | **1.83** | **1.68** | **0.45** | **2.09** | **0.55** | **0.59** | **0.71** | **0.44** |
| | 62 | 52 | 39 | 33 | 41 | 66 | 13 | 12 | 23 | 15 |
| **June** | **3.05** | **2.74** | **2.75** | **3.85** | **2.27** | **1.49** | **3.78** | **7.51** | **1.40** | **1.51** |
| | 102 | 89 | 79 | 92 | 149 | 56 | 97 | 142 | 49 | 53 |
| **July** | **4.70** | **2.58** | **3.15** | **4.19** | **1.54** | **1.22** | **0.91** | **1.83** | **1.34** | **0.10** |
| | 201 | 132 | 149 | 141 | 87 | 65 | 40 | 43 | 82 | 5 |
| **August** | **4.48** | **4.58** | **5.94** | **6.85** | **3.22** | **4.63** | **6.07** | **9.06** | **4.39** | **4.29** |
| | 171 | 183 | 276 | 268 | 153 | 200 | 227 | 230 | 186 | 177 |
| **September** | **2.93** | **3.86** | **4.74** | **5.37** | **2.59** | **4.12** | **4.78** | **7.55** | **2.65** | **3.98** |
| | 119 | 111 | 124 | 132 | 107 | 124 | 102 | 123 | 70 | 76 |
| **October** | **0.66** | **1.39** | **3.10** | **2.79** | **0.16** | **2.68** | **1.02** | **2.92** | **0.99** | **4.91** |
| | 45 | 60 | 90 | 71 | 12 | 99 | 30 | 72 | 39 | 196 |
| **November** | **1.10** | **2.42** | **5.80** | **5.63** | **0.77** | **2.77** | **2.46** | **2.47** | **0.98** | **0.64** |
| | 138 | 205 | 239 | 135 | 138 | 199 | 96 | 64 | 78 | 134 |
| **December** | **0.20** | **0.03** | **1.21** | **3.47** | **0.02** | **0.89** | **1.88** | **3.12** | **0.48** | **0.47** |
| | 39 | 3 | 62 | 85 | 4 | 88 | 95 | 91 | 48 | 38 |
| **Annual** | **19.26** | **21.51** | **33.99** | **41.24** | **11.78** | **22.46** | **24.49** | **40.47** | **14.04** | **17.63** |
| | 102 | 90 | 100 | 90 | 91 | 94 | 71 | 85 | 60 | 70 |

# FIRST ORDER STATION DATA

The following descriptions and tables are for the 17 first order stations in Texas, as well as Shreveport, Louisiana. Several comments regarding these tables:

- The extreme values listed are for the period of record in which the station has been at the present location (i.e., Houston's extremes date back to when the station was first relocated to Intercontinental Airport).
- T signifies a trace, which in precipitation terms implies <0.005", and for snowfall, <0.05".
- POR denotes the period of record, in years.
- An asterisk (*) denotes a value between 0 and 0.05.
- Blanks indicate data are not reported for that station (or specified parameters have been discontinued due to the implementation of ASOS).
- ASOS records wind data in terms of degrees rather than direction (i.e., 270°, or '27', rather than west, or 'W'). For the purpose of consistency, wind records that were previously accompanied by its direction in the "Normals, Means and Extremes" have been changed to corresponding degrees. These values in degrees have been italicized to distinguish them from the actual directions measured by ASOS. The directions and their corresponding degrees are given below:

| | |
|---|---|
| 'N' = '36' (360°) | 'S' = '18' (180°) |
| 'NE' = '4' (45°) | 'SW' = '22' (225°) |
| 'E' = '9' (90°) | 'W' = '27' (270°) |
| 'SE' = '13' (135°) | 'NW' = '31' (315°) |

- Dates of the extremes listed are the latest dates on which that value has occurred.

# Abilene, Texas

Abilene is located in North Central Texas. The station elevation is 1,750 feet above sea level. Topography of the area includes rolling plains, treeless except for mesquite, broken by low hills to the south and west. The land rises gently to the east and southeast. Regional agricultural products are mainly cattle, dry-land cotton, and feed crops.

Abilene is on the boundary between the humid east Texas climate and the semi-arid west and north Texas climate. The rainfall pattern is typical of the Great Plains. Most precipitation occurs from April to October and is usually associated with thunderstorms. Severe storms are infrequent, occurring mostly in the spring.

The large range of high and low temperatures, characteristic of the Great Plains, extends south to the Abilene area. High daytime temperatures prevail in the summer, but are normally broken by thunderstorms about five times a month. Rapid cooling after sunset results in pleasant nights with low summertime temperatures in the upper 60s and low 70s. High summer temperatures are usually associated with fair skies, southwesterly winds, and low humidities.

Rapid wintertime temperature changes occur when cold, dry, arctic air replaces warm moist tropical air. Drops in temperature of 20 to 30 degrees in one hour are not unusual. However, cold weather periods are short lived. Fair, mild weather is typical.

South is the prevailing wind direction, and southerly winds are frequently high and persist for several days. Strong northerly winds often occur during the passage of cold fronts. Dusty conditions are infrequent, occurring mostly with westerly winds. Dust storm frequency and intensity depend on soil conditions in eastern New Mexico, west Texas, and the Texas Panhandle.

Based on the 1951-1980 period, the average first occurrence of 32°F in the fall is November 13 and the average last occurrence in the spring is March 25.

## Abilene 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 57.1 | 65.7 | 66.1 | 77.4 | 90.8 | 91.4 | 95.2 | 89.5 | 82.6 | 77.0 | 64.8 | 62.4 | 76.7 |
| Daily Minimum | 29.2 | 37.1 | 38.2 | 48.7 | 66.3 | 69.0 | 73.6 | 70.4 | 61.7 | 52.2 | 41.7 | 35.3 | 52.0 |
| Monthly | 43.2 | 51.4 | 52.2 | 63.1 | 78.6 | 80.2 | 84.4 | 80.0 | 72.2 | 64.6 | 53.3 | 48.9 | 64.3 |
| Monthly Dew Point | 22.1 | 24.3 | 27.5 | 38.0 | 61.7 | 64.7 | 65.1 | 65.7 | 61.8 | | 42.3 | 31.1 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 76 | 93 | 86 | 91 | 100 | 100 | 104 | 103 | 91 | 87 | 89 | 79 | 104 |
| -Date | 13 | 22 | 13 | 27 | 22 | 19 | 7 | 4 | 3 | 20 | 20 | 11 | 7-Jul |
| Lowest | 14 | 6 | 17 | 31 | 52 | 57 | 66 | 63 | 40 | 38 | 24 | 11 | 6 |
| -Date | 31 | 4 | 8 | 6 | 2 | 8 | 25 | 13 | 28 | 22 | 26 | 19 | 4-Feb |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 673 | 422 | 414 | 138 | 0 | 0 | 0 | 0 | 22 | 86 | 360 | 497 | 2612 |
| Cooling | 0 | 36 | 23 | 87 | 431 | 461 | 609 | 472 | 242 | 80 | 14 | 4 | 2459 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 62 | 54 | 62 | 63 | | 82 | 75 | 83 | 90 | 84 | 83 | 71 | |
| 6:00 PM | 37 | 28 | 28 | 30 | | 44 | 42 | 53 | 59 | 53 | 61 | 44 | |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | 3.6 | 5.4 | 4.8 | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 83 | 79 | 82 | 79 | | | 91 | 85 | 85 | 84 | 68 | 87 | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 2 | 2 | 3 | 4 | 3 | 7 | 6 | 14 | 12 | 7 | 6 | 0 | 66 |
| Snow or Ice | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| Thunderstorms | 0 | 0 | 2 | 4 | 5 | 6 | 9 | 7 | 8 | 4 | 2 | 0 | 47 |
| Heavy Fog | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 11 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 2 | 0 | 2 | 18 | 22 | 27 | 17 | 2 | 0 | 0 | 0 | 90 |
| - 32° and below | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 19 | 10 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 61 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.70 | 0.04 | 1.26 | 2.56 | 1.93 | 2.61 | 1.92 | 6.92 | 6.02 | 2.56 | 2.44 | T | 28.96 |
| Maximum in 24 h | 0.63 | 0.04 | 1.11 | 1.89 | 1.42 | 1.07 | 1.12 | 1.87 | 3.08 | 1.76 | 0.91 | T | 3.08 |
| -Date | 1 | 1-2 | 26-27 | 4-5 | 30-31 | 6-7 | 12 | 8-9 | 14-15 | 27-28 | 24 | 15 | 14-15 Oct |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 4.5 | 0.4 | T | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 15.2 |
| Maximum in 24 h | 4.5 | 0.4 | T | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 9.3 |
| -Date | 1 | 1-2 | 27 | 5 | | | | | | | 24 | | Apr-97 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 14.0 | 12.7 | 15.4 | 14.7 | 15.8 | 10.1 | 9.4 | 8.9 | 8.2 | 10.7 | 10.7 | 12.0 | 11.9 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | S | N | N | SW | 31 | 01 | 34 | 21 | 33 | 34 | 32 | 21 | 19 |
| Speed | 49 | 43 | 52 | 48 | 66 | 53 | 48 | 33 | 68 | 40 | 41 | 43 | 68 |
| -Date | 28 | 11 | 18 | 22 | 5 | 5 | 26 | 4 | 18 | 21 | 6 | 2 | 18-Sep |

## Abilene

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 54.8 | 59.7 | 68.9 | 77.8 | 84.4 | 91.4 | 95.2 | 94.5 | 86.7 | 77.9 | 66.3 | 57.0 | 76.2 |
| Daily Minimum | 30 | 30.8 | 35.1 | 43.3 | 52.9 | 61.1 | 68.9 | 72.7 | 71.7 | 65.3 | 54.8 | 43.4 | 33.9 | 52.8 |
| Monthly | 30 | 42.8 | 47.4 | 56.1 | 65.4 | 72.7 | 80.2 | 84.0 | 83.2 | 76.0 | 66.4 | 54.9 | 45.5 | 64.6 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 57 | 89 | 93 | 97 | 99 | 107 | 109 | 110 | 109 | 106 | 103 | 92 | 89 | 110 |
| -Year | | 1943 | 1996 | 1974 | 1948 | 1967 | 1994 | 1978 | 1943 | 1952 | 1979 | 1980 | 1955 | Jul-78 |
| Lowest | 57 | -9 | -7 | 7 | 25 | 36 | 47 | 55 | 50 | 35 | 23 | 14 | -7 | -9 |
| -Year | | 1947 | 1985 | 1943 | 1973 | 1979 | 1964 | 1940 | 1992 | 1942 | 1993 | 1976 | 1989 | Jan-47 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 688 | 493 | 299 | 94 | 7 | 0 | 0 | 0 | 6 | 75 | 317 | 605 | 2584 |
| Cooling | 30 | 0 | 0 | 23 | 106 | 245 | 456 | 589 | 564 | 336 | 118 | 14 | 0 | 2451 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 33 | 73 | 73 | 70 | 73 | 80 | 78 | 73 | 74 | 78 | 76 | 75 | 73 | 75 |
| 6:00 PM | 33 | 50 | 47 | 39 | 40 | 45 | 43 | 38 | 40 | 48 | 48 | 51 | 52 | 45 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 58 | 5.7 | 5.6 | 5.4 | 5.1 | 5.4 | 4.5 | 4.4 | 4.4 | 4.6 | 4.4 | 4.8 | 5.3 | 5.0 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 49 | 61 | 64 | 70 | 72 | 70 | 78 | 79 | 77 | 70 | 71 | 67 | 62 | 70 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 57 | 5.2 | 5.3 | 4.8 | 6.1 | 7.9 | 6.2 | 4.8 | 5.6 | 6.1 | 5.6 | 4.5 | 4.8 | 66.9 |
| Snow or Ice | 57 | 0.7 | 0.5 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 1.8 |
| Thunderstorms | 57 | 0.6 | 1.4 | 2.8 | 5.1 | 8.0 | 6.2 | 4.7 | 5.3 | 3.5 | 2.9 | 1.5 | 0.7 | 42.7 |
| Heavy Fog | 57 | 1.3 | 1.5 | 0.7 | 0.5 | 0.4 | 0.1 | * | 0.1 | 0.4 | 0.7 | 1.0 | 1.1 | 7.8 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 33 | 0.0 | 0.0 | 0.5 | 2.5 | 7.3 | 19.4 | 26.3 | 24.4 | 11.5 | 2.0 | 0.1 | 0.0 | 94.0 |
| - 32° and below | 33 | 1.9 | 1.0 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 1.1 | 4.2 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 33 | 16.9 | 11.1 | 4.2 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 5.4 | 13.5 | 51.8 |
| - 0° and below | 33 | * | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.03 | 1.16 | 1.36 | 1.90 | 2.97 | 2.86 | 2.09 | 2.80 | 3.21 | 2.51 | 1.48 | 1.03 | 24.40 |
| Maximum Monthly | 57 | 4.35 | 3.60 | 5.16 | 6.80 | 13.19 | 9.60 | 7.15 | 8.18 | 11.03 | 10.68 | 4.60 | 6.28 | 13.19 |
| -Year | | 1968 | 1992 | 1979 | 1966 | 1957 | 1961 | 1968 | 1969 | 1974 | 1981 | 1968 | 1991 | May-57 |
| Minimum Monthly | 57 | T | 0.04 | 0.03 | T | 0.15 | T | T | T | T | 0.00 | 0.00 | T | 0.00 |
| -Year | | 1967 | 1996 | 1963 | 1961 | 1956 | 1994 | 1970 | 1943 | 1956 | 1952 | 1949 | 1996 | Oct-52 |
| Maximum in 24 h | 57 | 2.18 | 1.94 | 2.23 | 3.75 | 4.76 | 3.66 | 3.74 | 6.30 | 6.70 | 6.08 | 2.43 | 2.62 | 6.70 |
| -Year | | 1961 | 1992 | 1977 | 1957 | 1990 | 1959 | 1960 | 1978 | 1961 | 1981 | 1975 | 1991 | Sep-61 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.9 | 1.1 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.7 | 4.7 |
| Maximum Monthly | 57 | 13.5 | 8.4 | 7.3 | 9.3 | T | T | T | 0.0 | 0.0 | 0.3 | 8.1 | 7.8 | 13.5 |
| -Year | | 1973 | 1956 | 1970 | 1996 | 1995 | 1993 | 1995 | | | 1993 | 1968 | 1983 | Jan-73 |
| Maximum in 24 h | 57 | 7.5 | 4.5 | 6.1 | 9.3 | T | T | T | 0.0 | 0.0 | 0.3 | 5.3 | 4.2 | 9.3 |
| -Year | | 1973 | 1979 | 1970 | 1996 | 1995 | 1993 | 1995 | | | 1993 | 1976 | 1946 | Jan-73 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 51 | 11.7 | 12.5 | 13.9 | 13.8 | 12.9 | 12.6 | 10.8 | 10.2 | 10.3 | 10.9 | 11.6 | 11.7 | 11.9 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 12 | 51 | 52 | 61 | 56 | 71 | 64 | 63 | 52 | 68 | 58 | 49 | 59 | 71 |
| Direction | | *22* | *36* | *27* | *36* | *18* | *36* | *27* | *27* | 33 | *31* | *36* | *31* | *18* |
| -Year | | 1994 | 1990 | 1984 | 1990 | 1993 | 1995 | 1995 | 1987 | 1996 | 1984 | 1994 | 1993 | May-93 |

# Amarillo, Texas

The station is located 7 statute miles east northeast of the downtown post office in a region of rather flat topography. The Canadian River flows eastward 18 miles north of the station, with its bed about 800 feet below the plains. The Prairie Dog Town Fork of the Red River flows southeastward about 15 miles south of the station where it enters the Palo Duro Canyon, which is about 1000 feet deep. There are numerous shallow Playa lakes, often dry, over the area, and the nearly treeless grasslands slope downward to the east. The terrain gradually rises to the west and northwest.

Three-fourths of the total annual precipitation fall from April through September, occurring from thunderstorm activity. Snow usually melts within a few days after it falls. Heavier snowfalls of 10 inches or more, usually with near blizzard conditions, average once every 5 years and last 2 to 3 days.

The Amarillo area is subject to rapid and large temperature changes, especially during the winter months when cold fronts from the northern Rocky Mountain and Plains states sweep across the area. Temperature drops of 50°F to 60°F within a 12-hour period are not uncommon. Temperature drops of 40°F have occurred within a few minutes.

Humidity averages are low, occasionally dropping below 20% in the spring. Low humidity moderates the effect of high summer afternoon temperatures, permits evaporative cooling systems to be very effective, and provides many pleasant evenings and nights. Severe local storms are infrequent, although a few thunderstorms with damaging hail, lightning, and wind in a very localized area occur most years, usually in spring and summer. These storms are often accompanied by very heavy rain, which produces local flooding, particularly of roads and streets. Tornadoes are rare.

Based on the 1951-1980 period, the average first occurrence of 32°F in the fall is October 29 and the average last occurrence in the spring is April 14.

## Amarillo

## 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 51.5 | 58.7 | 61.6 | 73.6 | 88.4 | 89.7 | 89.2 | 84.8 | 77.2 | 71.6 | 59.9 | 54.3 | 71.7 |
| Daily Minimum | 18.3 | 27.6 | 26.8 | 40.1 | 56.6 | 61.4 | 65.0 | 63.9 | 54.5 | 43.6 | 31.4 | 25.1 | 42.9 |
| Monthly | 34.9 | 43.1 | 44.2 | 56.9 | 72.5 | 75.6 | 77.1 | 74.4 | 65.9 | 57.6 | 45.7 | 39.7 | 57.3 |
| Monthly Dew Point | 14.7 | 17.7 | 16.9 | 25.0 | 46.3 | 57.5 | 61.3 | 62.8 | | 40.4 | 31.9 | | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 71 | 84 | 81 | 94 | 103 | 105 | 102 | 95 | 89 | 88 | 85 | 80 | 105 |
| -Date | 22 | 22 | 23 | 24 | 16 | 20 | 7 | 3 | 22 | 12 | 20 | 9 | 20-Jun |
| Lowest | 4 | -3 | 6 | 27 | 39 | 49 | 60 | 58 | 35 | 29 | 16 | 0 | -3 |
| -Date | 19 | 4 | 7 | 6 | 1 | 8 | 10 | 31 | 27 | 18 | 27 | 19 | 4-Feb |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 926 | 634 | 636 | 250 | 21 | 0 | 3 | 0 | 70 | 251 | 571 | 775 | 4137 |
| Cooling | 0 | 5 | 0 | 14 | 260 | 325 | 386 | 297 | 103 | 27 | 0 | 0 | 1417 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 65 | 57 | 60 | | 77 | 83 | 84 | 90 | 89 | 76 | 82 | 65 | |
| 6:00 PM | 37 | 32 | 27 | | 31 | 43 | 48 | 58 | 55 | 50 | 58 | 44 | |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 74 | | | | | | 77 | 72 | 59 | 71 | 63 | 73 | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 2 | 3 | 3 | 0 | 3 | 11 | 15 | 11 | 9 | 5 | 6 | 1 | 69 |
| Snow or Ice | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 5 |
| Thunderstorms | 0 | 0 | 0 | 0 | 6 | 13 | 14 | 13 | 3 | 1 | 2 | 0 | 52 |
| Heavy Fog | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 3 | 2 | 6 | 0 | 16 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 0 | 0 | 1 | 16 | 14 | 15 | 6 | 0 | 0 | 0 | 0 | 52 |
| - 32° and below | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 29 | 18 | 22 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 23 | 117 |
| - 0° and below | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.07 | 0.24 | 0.24 | T | 1.67 | 2.86 | 4.95 | 6.43 | 1.86 | 0.84 | 1.30 | 0.05 | 20.51 |
| Maximum in 24 h | 0.05 | 0.11 | 0.12 | T | 1.29 | 0.98 | 1.18 | 2.09 | 0.77 | 0.56 | 0.77 | 0.05 | 2.09 |
| -Date | 18 | 1-2 | 30 | 14+ | 30-31 | 29 | 27 | 26-27 | 6-7 | 28-29 | 30 | 17 | 26-27 Aug |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 1.1 | 3.7 | 0.1 | 0.0 | T | 0.0 | T | | 0.0 | 1.5 | 8.0 | 1.1 | |
| Maximum in 24 h | 1.0 | 3.1 | 0.1 | 0.0 | T | 0.0 | T | | 0.0 | 1.5 | 8.0 | 1.1 | |
| -Date | 18 | 1 | 6 | | 31+ | | 30 | | | 21 | 30 | 17 | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 13.7 | 12.6 | 13.9 | 15.6 | 15.7 | 12.1 | 11.6 | 10.7 | 11.3 | 13.6 | 13.0 | 14.0 | 13.2 |
| PEAK GUST | | | | | | | | | | | | | |
| Speed | 54 | 49 | 46 | 48 | 49 | 56 | 51 | 51 | 37 | 61 | 45 | 48 | 61 |
| Direction | 26 | 22 | 19 | 2 | 20 | 4 | 3 | 33 | 3 | 23 | 20 | 29 | 13 |
| -Date | 17 | 26 | 29 | 28 | 26 | 3 | 24 | 7 | 26 | 25 | 16 | 10 | 25-Oct |

## Amarillo

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 49.0 | 52.8 | 61.6 | 71.5 | 79.1 | 87.6 | 91.7 | 89.1 | 81.8 | 72.5 | 59.7 | 50.1 | 70.5 |
| Daily Minimum | 30 | 21.2 | 25.5 | 32.7 | 42.1 | 51.6 | 60.7 | 65.5 | 63.8 | 56.4 | 44.5 | 32.3 | 23.7 | 43.3 |
| Monthly | 30 | 35.1 | 39.2 | 47.1 | 56.8 | 65.4 | 74.1 | 78.6 | 76.5 | 69.1 | 58.5 | 46.0 | 36.9 | 56.9 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 56 | 81 | 88 | 94 | 98 | 103 | 108 | 105 | 106 | 102 | 95 | 87 | 81 | 108 |
| -Year | | 1950 | 1963 | 1971 | 1989 | 1996 | 1990 | 1994 | 1944 | 1983 | 1954 | 1980 | 1955 | Jun-90 |
| Lowest | 56 | -11 | -14 | -3 | 14 | 28 | 42 | 51 | 49 | 30 | 12 | 0 | -8 | -14 |
| -Year | | 1984 | 1951 | 1948 | 1945 | 1954 | 1955 | 1990 | 1956 | 1984 | 1993 | 1976 | 1989 | Feb-51 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 927 | 722 | 555 | 266 | 89 | 6 | 0 | 0 | 26 | 226 | 570 | 871 | 4258 |
| Cooling | 30 | 0 | 0 | 0 | 20 | 102 | 279 | 422 | 357 | 149 | 25 | 0 | 0 | 1354 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 30 | 70 | 72 | 68 | 68 | 74 | 77 | 74 | 78 | 80 | 73 | 72 | 70 | 73 |
| 6:00 PM | 30 | 46 | 43 | 35 | 31 | 37 | 39 | 38 | 43 | 45 | 42 | 48 | 50 | 41 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 55 | 70 | 69 | 74 | 76 | 73 | 78 | 80 | 78 | 75 | 77 | 73 | 69 | 74 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 30 | 3.9 | 4.4 | 5.2 | 4.9 | 7.9 | 8.9 | 7.7 | 8.7 | 6.5 | 4.7 | 3.6 | 4.1 | 70.5 |
| Snow or Ice | 30 | 1.4 | 1.3 | 1.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 | 0.8 | 5.4 |
| Thunderstorms | 30 | 0.2 | 0.5 | 1.6 | 3.5 | 8.4 | 9.6 | 9.3 | 9.0 | 4.2 | 2.4 | 0.6 | 0.2 | 49.5 |
| Heavy Fog | 30 | 3.3 | 4.2 | 3.3 | 1.9 | 2.1 | 0.7 | 0.5 | 0.7 | 2.0 | 2.5 | 2.7 | 2.9 | 26.8 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 30 | 0.0 | 0.0 | 0.1 | 1.0 | 4.7 | 12.8 | 21.1 | 16.5 | 6.4 | 1.0 | 0.0 | 0.0 | 63.6 |
| - 32° and below | 30 | 4.5 | 2.8 | 0.9 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.8 | 3.6 | 12.6 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 30 | 27.5 | 21.8 | 14.7 | 3.5 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 1.8 | 14.5 | 26.7 | 110.8 |
| - 0° and below | 30 | 1.1 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.7 | 2.2 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.50 | 0.61 | 0.96 | 0.99 | 2.48 | 3.70 | 2.62 | 3.22 | 1.99 | 1.37 | 0.69 | 0.43 | 19.56 |
| Maximum Monthly | 55 | 2.33 | 1.83 | 3.99 | 3.74 | 9.81 | 10.73 | 7.59 | 7.55 | 5.02 | 7.64 | 2.26 | 4.52 | 10.73 |
| -Year | | 1968 | 1948 | 1973 | 1942 | 1951 | 1965 | 1960 | 1974 | 1950 | 1941 | 1961 | 1959 | Jun-65 |
| Minimum Monthly | 55 | 0.00 | T | T | T | 0.04 | 0.01 | 0.12 | 0.28 | 0.03 | 0.00 | 0.00 | T | 0.00 |
| -Year | | 1986 | 1991 | 1950 | 1996 | 1984 | 1953 | 1946 | 1983 | 1977 | 1952 | 1989 | 1976 | Nov-89 |
| Maximum in 24 h | 55 | 1.74 | 1.28 | 2.27 | 1.99 | 6.75 | 6.15 | 4.74 | 4.26 | 3.42 | 3.45 | 1.53 | 3.11 | 6.75 |
| -Year | | 1968 | 1971 | 1973 | 1985 | 1951 | 1960 | 1982 | 1945 | 1951 | 1948 | 1980 | 1943 | May-51 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 3.8 | 4.6 | 2.9 | 0.6 | * | 0.0 | 0.0 | 0.0 | * | 0.3 | 1.9 | 2.8 | 16.9 |
| Maximum Monthly | 55 | 14.5 | 17.3 | 14.7 | 6.4 | 0.5 | T | T | 0.0 | 0.3 | 3.9 | 13.6 | 15.3 | 17.3 |
| -Year | | 1983 | 1971 | 1961 | 1947 | 1978 | 1992 | 1996 | | 1984 | 1976 | 1952 | 1987 | Feb-71 |
| Maximum in 24 h | 55 | 10.2 | 13.5 | 9.8 | 5.1 | 0.5 | T | T | 0.0 | 0.3 | 3.2 | 12.2 | 11.3 | 13.5 |
| -Year | | 1994 | 1971 | 1957 | 1947 | 1978 | 1992 | 1996 | | 1984 | 1976 | 1952 | 1987 | Feb-71 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 33 | 12.7 | 13.7 | 15.3 | 15.4 | 14.3 | 14.1 | 12.9 | 12.2 | 12.7 | 12.8 | 12.8 | 12.8 | 13.5 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 4 | 54 | 55 | 51 | 62 | 49 | 68 | 53 | 53 | 52 | 61 | 52 | 57 | 68 |
| Direction | | 26 | *22* | *4* | *22* | 20 | *31* | *31* | *31* | *27* | 23 | *31* | *31* | *31* |
| -Year | | 1996 | 1993 | 1993 | 1994 | 1996 | 1994 | 1994 | 1993 | 1994 | 1996 | 1994 | 1993 | Jun-94 |

# Austin, Texas

Austin, capital of Texas, is located on the Colorado River where the stream crosses the Balcones Escarpment separating the Texas Hill Country from the Blackland Prairies to the east. Elevations within the city vary from 400 feet to nearly 1000 feet above sea level. Native trees include cedar, oak, walnut, mesquite, and pecan.

The climate of Austin is humid subtropical with hot summers. Winters are mild, with below freezing temperatures occurring on an average of about 25 days each year. Rather strong northerly winds, accompanied by sharp drops in temperature, frequently occur during the winter months in connection with cold fronts, but cold spells are usually of short duration, seldom lasting more than two days. Daytime temperatures in summer are hot, but summer nights are usually pleasant.

Precipitation is fairly evenly distributed throughout the year, with heaviest amounts occurring in late spring. A secondary rainfall peak occurs in September, primarily because of tropical cyclones that migrate out of the Gulf of Mexico. Precipitation from April through September usually results from thunderstorms, with fairly large amounts of rain falling within short periods of time. While thunderstorms and heavy rains may occur in all months of the year, most of the winter precipitation consists of light rain. Snow is insignificant as a source of moisture, and usually melts as rapidly as it falls. The city may experience several seasons in succession with no measurable snowfall.

Prevailing winds are southerly, however in winter, northerly winds are about as frequent as those from the south. Destructive winds and damaging hailstorms are infrequent. On rare occasions dissipation tropical storms produce strong winds and heavy rains in the area. Blowing dust occurs occasionally in spring, but visibility rarely drops substantially, and then only for a few hours.

The average length of the warm season (freeze-free period) is 273 days. The average occurrence of the last temperature of 32°F in spring is early March and the average occurrence of the first temperature of 32°F is late November.

**Austin** **1996**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 63.2 | 69.3 | 69.0 | 82.1 | 90.7 | 92.8 | 98.3 | 94.1 | 86.8 | 79.4 | 70.8 | 65.2 | 80.1 |
| Daily Minimum | 37.8 | 46.0 | 45.4 | 55.0 | 70.5 | 72.1 | 75.1 | 73.6 | 68.4 | 60.3 | 50.1 | 44.5 | 58.2 |
| Monthly | 50.5 | 57.6 | 57.2 | 68.6 | 80.6 | 82.5 | 86.7 | 83.9 | 77.6 | 69.9 | 60.5 | 54.9 | 69.2 |
| Monthly Dew Point | 33.2 | 38.8 | 39.2 | 50.7 | 68.7 | 69.9 | 69.1 | 69.9 | 66.9 | 59.6 | 50.8 | 42.7 | 55.0 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 79 | 99 | 87 | 97 | 97 | 102 | 102 | 102 | 92 | 89 | 86 | 83 | 102 |
| -Date | 23 | 21 | 30 | 19 | 29 | 20 | 23 | 3 | 17 | 17 | 6 | 6 | 3x |
| Lowest | 20 | 19 | 26 | 38 | 51 | 61 | 72 | 66 | 51 | 39 | 34 | 23 | 19 |
| -Date | 8 | 4 | 9 | 5 | 1 | 9 | 5 | 31 | 28 | 23 | 24 | 19 | 4-Feb |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 442 | 286 | 282 | 59 | 0 | 0 | 0 | 0 | 6 | 33 | 176 | 327 | 1611 |
| Cooling | 3 | 83 | 47 | 174 | 491 | 529 | 682 | 588 | 392 | 192 | 45 | 21 | 3247 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 71 | 69 | 75 | 79 | 92 | 92 | 91 | 90 | 88 | 88 | 89 | 80 | 84 |
| 6:00 PM | 42 | 42 | 44 | 40 | 51 | 52 | 39 | 55 | 61 | 62 | 64 | 57 | 51 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 66 | 55 | 49 | 73 | 67 | | 75 | 55 | 60 | 51 | 33 | 45 | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 2 | 4 | 5 | 4 | 6 | 8 | 1 | 12 | 12 | 9 | 8 | 5 | 76 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 0 | 2 | 4 | 3 | 6 | 2 | 8 | 7 | 2 | 2 | 1 | 37 |
| Heavy Fog | 3 | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 6 | 5 | 24 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 4 | 0 | 7 | 18 | 24 | 31 | 23 | 9 | 0 | 0 | 0 | 116 |
| - 32° and below | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 10 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.06 | 0.62 | 0.60 | 1.90 | 1.82 | 4.48 | 0.15 | 8.81 | 4.02 | 0.78 | 4.13 | 2.19 | 29.56 |
| Maximum in 24 h | 0.05 | 0.53 | 0.46 | 0.90 | 1.01 | 1.94 | 0.15 | 3.38 | 1.26 | 0.39 | 1.04 | 1.78 | 3.38 |
| -Date | 17-18 | 29 | 26-27 | 28-29 | 27 | 7 | 10 | 23-24 | 19-20 | 27-28 | 24 | 15-16 | 23-24 Aug |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 0.3 |
| Maximum in 24 h | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 0.3 |
| -Date | | 3 | | | | | | | | | 24 | 16 | 3-Feb |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 9.4 | 9.7 | 10.1 | 10.3 | 10.3 | 6.9 | 7.5 | 6.3 | 5.4 | 7.2 | 7.8 | 7.3 | 8.2 |
| PEAK GUST | | | | | | | | | | | | | |
| Speed | 39 | 39 | 45 | 40 | 41 | 39 | 37 | 41 | 43 | 36 | 39 | 41 | 45 |
| Direction | 33 | 2 | 33 | 5 | 27 | 33 | 13 | 19 | 5 | 33 | 32 | 1 | 33 |
| -Date | 18 | 11 | 7 | 29 | 27 | 4 | 10 | 14 | 24 | 21 | 7 | 15 | 7-Mar |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 58.9 | 63.4 | 71.9 | 79.4 | 84.7 | 91.1 | 95.0 | 95.5 | 90.5 | 82.1 | 71.8 | 62.0 | 78.9 |
| Daily Minimum | 30 | 38.6 | 42.1 | 51.1 | 59.8 | 66.5 | 71.5 | 73.9 | 73.9 | 69.8 | 60.0 | 49.9 | 41.2 | 58.2 |
| Monthly | 30 | 48.8 | 52.8 | 61.5 | 69.6 | 75.6 | 81.3 | 84.5 | 84.8 | 80.2 | 71.1 | 60.9 | 51.6 | 68.6 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 55 | 90 | 99 | 98 | 98 | 100 | 105 | 109 | 106 | 104 | 98 | 91 | 90 | 109 |
| -Year | | 1971 | 1996 | 1971 | 1982 | 1984 | 1980 | 1954 | 1990 | 1985 | 1991 | 1951 | 1955 | Jul-54 |
| Lowest | 55 | -2 | 7 | 18 | 35 | 43 | 53 | 64 | 61 | 41 | 30 | 20 | 4 | -2 |
| -Year | | 1949 | 1951 | 1948 | 1973 | 1954 | 1970 | 1970 | 1967 | 1942 | 1993 | 1976 | 1989 | Feb-51 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 514 | 353 | 175 | 28 | 0 | 0 | 0 | 0 | 0 | 17 | 175 | 426 | 1688 |
| Cooling | 30 | 12 | 11 | 66 | 166 | 329 | 489 | 605 | 614 | 456 | 206 | 52 | 10 | 3016 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 35 | 79 | 79 | 79 | 82 | 88 | 89 | 88 | 87 | 86 | 84 | 82 | 80 | 84 |
| 6:00 PM | 35 | 58 | 52 | 49 | 53 | 58 | 54 | 46 | 46 | 54 | 54 | 58 | 59 | 53 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 55 | 6.3 | 6.1 | 6.1 | 6.2 | 6.2 | 5.2 | 4.7 | 4.6 | 5.0 | 4.8 | 5.4 | 6.0 | 5.6 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 55 | 48 | 51 | 55 | 54 | 56 | 69 | 75 | 74 | 66 | 64 | 55 | 49 | 60 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 55 | 8.1 | 7.8 | 7.3 | 7.4 | 9.1 | 6.6 | 4.7 | 5.1 | 7.1 | 6.4 | 7.1 | 7.6 | 84.3 |
| Snow or Ice | 55 | 0.2 | 0.1 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.4 |
| Thunderstorms | 55 | 1.0 | 2.2 | 3.2 | 4.7 | 7.1 | 5.0 | 3.9 | 4.8 | 4.0 | 2.8 | 1.7 | 1.2 | 41.6 |
| Heavy Fog | 55 | 4.4 | 3.0 | 2.5 | 1.2 | 1.0 | 0.4 | 0.3 | 0.3 | 0.8 | 2.0 | 2.7 | 4.1 | 22.7 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 35 | * | 0.1 | 0.6 | 1.5 | 6.3 | 21.1 | 28.2 | 28.3 | 17.1 | 4.2 | 0.0 | 0.0 | 107.4 |
| - 32° and below | 35 | 0.5 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.0 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 35 | 7.9 | 4.3 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 1.1 | 5.1 | 19.3 |
| - 0° and below | 35 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.71 | 2.17 | 1.87 | 2.56 | 4.78 | 3.72 | 2.04 | 2.05 | 3.30 | 3.43 | 2.37 | 1.88 | 31.88 |
| Maximum Monthly | 55 | 9.21 | 6.56 | 6.03 | 9.93 | 9.98 | 14.96 | 10.54 | 8.90 | 8.11 | 12.31 | 7.91 | 14.16 | 14.96 |
| -Year | | 1991 | 1992 | 1983 | 1957 | 1965 | 1981 | 1979 | 1974 | 1942 | 1960 | 1946 | 1991 | Jun-81 |
| Minimum Monthly | 55 | 0.04 | 0.28 | T | 0.06 | 0.81 | T | 0.00 | 0.00 | 0.07 | T | T | T | 0.00 |
| -Year | | 1971 | 1954 | 1972 | 1984 | 1960 | 1967 | 1962 | 1952 | 1947 | 1952 | 1970 | 1950 | Jul-62 |
| Maximum in 24 h | 55 | 4.41 | 3.73 | 2.69 | 3.86 | 5.66 | 6.50 | 5.46 | 6.01 | 6.74 | 7.22 | 5.09 | 6.19 | 7.22 |
| -Year | | 1991 | 1958 | 1980 | 1942 | 1979 | 1964 | 1961 | 1994 | 1973 | 1960 | 1974 | 1991 | Oct-60 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.5 | 0.3 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.0 | 0.8 |
| Maximum Monthly | 55 | 7.5 | 6.0 | 2.0 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | T | 7.5 |
| -Year | | 1985 | 1966 | 1965 | 1995 | 1993 | | | | | | 1980 | 1993 | Jan-85 |
| Maximum in 24 h | 55 | 7.0 | 6.0 | 2.0 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | T | 7.0 |
| -Year | | 1944 | 1966 | 1965 | 1995 | 1993 | | | | | | 1980 | 1993 | Jan-44 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 55 | 9.6 | 10.0 | 10.7 | 10.4 | 9.5 | 9.1 | 8.3 | 7.8 | 7.9 | 8.0 | 9.0 | 9.1 | 9.1 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 52 | 55 | 56 | 51 | 63 | 54 | 44 | 47 | 81 | 46 | 49 | 63 | 81 |
| Direction | 13 | *27* | *31* | *31* | *27* | *31* | *36* | *22* | *4* | *36* | *31* | *31* | *31* | *31* |
| -Year | | 1992 | 1984 | 1984 | 1989 | 1992 | 1990 | 1988 | 1988 | 1987 | 1988 | 1988 | 1987 | Sep-87 |

# Brownsville, Texas

Brownsville is located at the southern tip of Texas. It is the largest city in the four county area referred to as the Lower Rio Grande Valley or Just the Valley.

The Gulf of Mexico, located about 18 miles east, is the dominate influence on local weather. Prevailing southeast breezes off the Gulf provide a humid but generally mild climate. Winds are frequently strong and gusty in the spring.

Brownsville weather is generally favorable for outdoor activities and the Valley is a popular tourist area, especially for Winter Texans who come to enjoy the mild winters. High temperatures range mostly in the 70s and 80s from October through April, with lows in the 50s and 60s during the same period. For the remainder of the year highs are frequently in the 90s with low in the 70s.

Temperature extremes are rare but do occur. Temperatures in the 90s have occurred in every month of the year, with 100°F readings noted as early as March and as late as September. Temperatures of 100°F or more are associated with west winds bringing hot dry air out of Mexico. Very hot temperatures are often moderated by a cooling sea breeze from the Gulf during the afternoon hours.

Located about 150 miles north of the tropics, cold weather in Brownsville is infrequent and of short duration. Some winters pass without a single day with freezing temperatures. This climate permits year round gardening and cultivation of citrus and other cold sensitive tropical and sub-tropical plants. Damaging cold comes from frigid air masses, called northers or arctic outbreaks, plunging south from Canada or the Arctic. The worst of these can drop temperatures well below freezing for several hours, and a few have produced readings in the teens. Fortunately such events are very rare since they are disastrous to the local economy.

Rainfall is not well distributed. Heaviest rains occur in May through June and mid August through mid October. Extended periods of cool rainy weather, called overrunning, can occur in winter. Torrential rains of 10 to 20 inches or more may accompany tropical storms or hurricanes that occasionally move over the area in summer or fall. Rainy spells may be followed by long dry periods. Irrigation is required to ensure production of corps

such as cotton, grains and vegetables. Snow and freezing rain or drizzle are so rare that years may pass between occurrences.

Brownsville is blessed by having little severe weather. Damaging hail or winds from heavy thunderstorms are generally limited to the Spring season and many years may elapse between occurrences. Tornadoes are even more rare. Tropical storms and hurricanes from the Gulf are a threat each summer and fall, but again, damaging storms are quite rare.

## Brownsville

## 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 72.8 | 73.6 | 75.2 | 82.7 | 90.1 | 93.6 | 95.5 | 93.1 | 89.0 | 84.1 | 80.1 | 73.9 | 83.6 |
| Daily Minimum | 48.8 | 53.8 | 55.1 | 61.4 | 75.2 | 75.8 | 77.1 | 76.3 | 74.1 | 67.9 | 58.9 | 54.2 | 64.9 |
| Monthly | 60.8 | 63.7 | 65.2 | 72.1 | 82.7 | 84.7 | 86.3 | 84.7 | 81.6 | 76.0 | 69.5 | 64.1 | 74.3 |
| Monthly Dew Point | 50.4 | 54.5 | 53.6 | 62.1 | 72.7 | 73.3 | 74.0 | 74.6 | | 69.9 | 61.6 | 56.9 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 83 | 93 | 90 | 94 | 94 | 96 | 97 | 98 | 93 | 89 | 88 | 91 | 98 |
| -Date | 26 | 19 | 17 | 14 | 30 | 21 | 25 | 5 | 21 | 17 | 7 | 7 | 5-Aug |
| Lowest | 32 | 32 | 37 | 45 | 62 | 67 | 73 | 73 | 61 | 52 | 37 | 29 | 29 |
| -Date | 8 | 3 | 8 | 6 | 1 | 9 | 4 | 31 | 29 | 23 | 25 | 19 | 19-Dec |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 177 | 158 | 122 | 23 | 0 | 0 | 0 | 0 | 0 | 1 | 44 | 135 | 660 |
| Cooling | 54 | 129 | 134 | 240 | 553 | 596 | 668 | 621 | 507 | 349 | 187 | 110 | 4148 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 84 | 86 | 84 | 90 | 90 | 92 | 91 | 92 | 95 | 97 | 92 | 91 | 90 |
| 6:00 PM | 68 | 71 | 65 | 70 | 75 | 65 | 61 | 70 | 77 | 82 | 75 | 80 | 72 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | 93 | | 88 | 73 | | | | | 46 | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 2 | 3 | 0 | 3 | 1 | 1 | 4 | 11 | 9 | 9 | 4 | 8 | 55 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 7 | 6 | 0 | 1 | 0 | 18 |
| Heavy Fog | 6 | 9 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 9 | 37 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 2 | 2 | 4 | 22 | 30 | 31 | 27 | 20 | 0 | 0 | 1 | 139 |
| - 32° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.06 | 0.15 | T | 0.50 | 0.08 | 0.01 | 0.65 | 5.77 | 8.57 | 11.49 | 0.66 | 0.77 | 28.71 |
| Maximum in 24 h | 0.06 | 0.12 | T | 0.35 | 0.08 | 0.01 | 0.48 | 1.79 | 3.58 | 10.53 | 0.45 | 0.50 | 10.53 |
| -Date | 2 | 11 | 31+ | 29 | 11 | 29 | 3 | 21-22 | 13 | 4-5 | 15-16 | 20-21 | 4-5 Oct |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Maximum in 24 h | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| -Date | | | | | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 11.5 | 12.8 | 12.2 | 13.6 | 15.8 | 11.2 | 11.7 | 10.6 | 8.3 | 8.5 | 9.2 | 7.6 | 11.1 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 18 | 19 | 35 | 18 | 14 | 12 | 17 | 16 | 3 | 34 | 18 | 33 | 3 |
| Speed | 47 | 38 | 44 | 43 | 34 | 32 | 37 | 36 | 55 | 40 | 39 | 38 | 55 |
| -Date | 17 | 19 | 7 | 28 | 26+ | 23+ | 22 | 18 | 20 | 22 | 6 | 15 | 20-Sep |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 68.9 | 72.2 | 78.4 | 84.0 | 87.8 | 91.0 | 93.3 | 93.6 | 90.4 | 85.3 | 78.3 | 71.1 | 82.9 |
| Daily Minimum | 30 | 49.9 | 52.5 | 59.1 | 66.5 | 72.0 | 74.9 | 75.7 | 75.4 | 73.2 | 66.1 | 59.0 | 52.4 | 64.7 |
| Monthly | 30 | 59.4 | 62.4 | 68.8 | 75.3 | 79.9 | 83.0 | 84.5 | 84.5 | 81.8 | 75.7 | 68.7 | 62.1 | 73.8 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 58 | 93 | 94 | 106 | 102 | 102 | 102 | 102 | 102 | 104 | 96 | 97 | 94 | 106 |
| -Year | | 1971 | 1986 | 1984 | 1984 | 1974 | 1989 | 1939 | 1962 | 1947 | 1986 | 1988 | 1977 | Mar-84 |
| Lowest | 58 | 19 | 22 | 32 | 38 | 52 | 60 | 68 | 63 | 55 | 35 | 31 | 16 | 16 |
| -Year | | 1962 | 1951 | 1989 | 1980 | 1970 | 1975 | 1989 | 1967 | 1995 | 1993 | 1993 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 232 | 135 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 177 | 635 |
| Cooling | 30 | 59 | 62 | 159 | 312 | 462 | 540 | 605 | 605 | 504 | 332 | 161 | 87 | 3888 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 30 | 88 | 89 | 88 | 88 | 90 | 91 | 91 | 91 | 90 | 89 | 87 | 87 | 89 |
| 6:00 PM | 30 | 73 | 69 | 66 | 68 | 69 | 66 | 62 | 63 | 68 | 69 | 72 | 74 | 68 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 54 | 7.0 | 6.6 | 6.7 | 6.7 | 6.1 | 5.2 | 4.8 | 5.0 | 5.4 | 4.9 | 5.8 | 6.8 | 5.9 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 54 | 41 | 48 | 53 | 57 | 64 | 73 | 80 | 76 | 68 | 65 | 51 | 42 | 60 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 54 | 7.8 | 6.1 | 4.2 | 3.9 | 5.0 | 5.9 | 4.7 | 6.7 | 9.8 | 6.5 | 6.0 | 6.8 | 73.4 |
| Snow or Ice | 54 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Thunderstorms | 54 | 0.6 | 0.8 | 0.7 | 2.4 | 3.6 | 3.0 | 2.8 | 4.6 | 5.0 | 2.1 | 1.0 | 0.5 | 27.1 |
| Heavy Fog | 54 | 6.0 | 4.6 | 3.5 | 2.3 | 1.0 | 0.2 | 0.1 | 0.2 | 0.3 | 0.8 | 3.0 | 5.2 | 27.2 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 30 | 0.1 | 0.2 | 1.2 | 3.5 | 9.2 | 22.9 | 27.3 | 27.7 | 18.7 | 5.5 | 0.5 | * | 116.8 |
| - 32° and below | 30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | * |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 30 | 1.2 | 0.5 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 2.7 |
| - 0° and below | 30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.56 | 1.06 | 0.53 | 1.56 | 2.94 | 2.73 | 1.90 | 2.77 | 6.00 | 2.80 | 1.51 | 1.25 | 26.61 |
| Maximum Monthly | 57 | 5.11 | 10.25 | 4.27 | 10.35 | 9.12 | 13.06 | 9.43 | 9.56 | 20.18 | 17.12 | 7.69 | 9.45 | 20.18 |
| -Year | | 1945 | 1958 | 1941 | 1991 | 1982 | 1942 | 1976 | 1975 | 1984 | 1958 | 1986 | 1940 | Sep-84 |
| Minimum Monthly | 57 | T | T | T | T | T | 0.01 | T | 0.02 | 0.07 | 0.34 | 0.01 | T | T |
| -Year | | 1956 | 1954 | 1996 | 1988 | 1978 | 1996 | 1993 | 1974 | 1959 | 1961 | 1949 | 1969 | Jul-93 |
| Maximum in 24 h | 57 | 3.00 | 4.98 | 2.59 | 9.37 | 4.56 | 8.18 | 4.25 | 5.48 | 12.19 | 10.53 | 4.08 | 5.69 | 12.19 |
| -Year | | 1988 | 1958 | 1981 | 1991 | 1969 | 1942 | 1976 | 1980 | 1967 | 1996 | 1986 | 1940 | Sep-67 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Maximum Monthly | 57 | T | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.0 | 0.0 | T | T | T |
| -Year | | 1993 | 1973 | 1993 | | | | | 1992 | | | 1991 | 1966 | Mar-93 |
| Maximum in 24 h | 57 | T | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.0 | 0.0 | T | T | T |
| -Year | | 1993 | 1973 | 1993 | | | | | 1992 | | | 1991 | 1966 | Mar-93 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 54 | 11.2 | 11.9 | 13.2 | 13.7 | 12.9 | 11.9 | 11.3 | 10.2 | 9.3 | 9.4 | 10.6 | 10.7 | 11.4 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 47 | 49 | 52 | 54 | 60 | 62 | 51 | 54 | 62 | 49 | 46 | 44 | 62 |
| Direction | 13 | 18 | *18* | *27* | *13* | *31* | *31* | *18* | *9* | *4* | *36* | *18* | *18* | *4* |
| -Year | | 1996 | 1990 | 1993 | 1985 | 1985 | 1988 | 1986 | 1992 | 1988 | 1988 | 1994 | 1988 | Sep-88 |

# Corpus Christi, Texas

Corpus Christi is located on Corpus Christi Bay, an inlet of the Gulf of Mexico in south Texas. The climatic conditions vary between the humid subtropical region to the northeast along the Texas coast and the semi-arid region to the west and southwest. Temperatures at the International Airport, which is about 7 miles west of downtown Corpus Christi, may be substantially different than those in the city during calm winter mornings and during summer afternoon sea breezes.

Peak rainfall months are May and September. Winter months have the least amounts of rainfall. The hurricane season from June to November can greatly effect the rainfall totals. Dry periods frequently occur. Several months during the years of record have had no rainfall, or only a trace. Snow falls on an average of about one day every two years.

There is little change in the day-to-day weather of the summer months, except for an occasional rainshower or a tropical storm in the area. High temperatures range in the high 80s to mid 90s, except for brief periods in the high 90s. The sea breeze during the afternoon and evening hours moderates the summer heal. Low temperatures are usually in the mid 70s. Mornings are generally warm. Summertime temperatures rarely reach 100°F near the bay, but occasionally do in most other parts of the city. Temperatures above 100°F are frequent about 30 to 60 miles to the west and southwest. Summertime afternoons are more pleasant than mornings because they are usually clear and windy. In the summer season the region receives nearly 80 percent of the possible sunshine.

The fall months of September and October are essentially an extension of the summer months. November is a transition to the conditions of the coming winter months, with greater temperature extremes, stronger winds, and the first occurrences of northers. The winter months are relatively mild, but with temperatures sufficiently low to be stimulating. Temperatures below 32°F seldom occur near the bay, but are more frequent inland. January is the coldest month with a prevailing northerly wind. The most extreme cold weather, in which daytime highs once very three or four years. The earliest

occurrence of a temperature below 32°F is in early November and the latest occurrence in the spring is mid to late March.

Relative humidity, because of the nearness of the Gulf of Mexico, is high throughout the year. However, during the afternoons the humidity usually drops to between 50 and 60 percent.

Severe tropical storms average about one every ten years. Lesser strength storms average about one every five years. The city of Corpus Christi has a feature not found in most other coastal cities. A bluff rises 30 to 40 feet above the level of the lowlands area near the bay. This serves as a natural protection from high water. Protection for the main city is now furnished by sea walls.

Chief hurricane months are August and September although tropical storms have occurred as early as June and as late as October. The majority of the storms pass either to the south or east of the city. Tornadoes are an infrequent occurrence in the area, and hail occurs only about once a year.

## Corpus Christi

**1996**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 70.3 | 72.3 | 72.8 | 81.3 | 87.6 | 93.1 | 95.8 | 93.6 | 90.1 | 86.2 | 78.3 | 71.8 | 82.8 |
| Daily Minimum | 43.3 | 49.6 | 49.9 | 58.5 | 74.0 | 73.5 | 74.9 | 74.9 | 72.4 | 66.2 | 56.5 | 49.4 | 61.9 |
| Monthly | 56.8 | 60.9 | 61.4 | 69.9 | 80.8 | 83.3 | 85.4 | 84.3 | 81.3 | 76.2 | 67.4 | 60.6 | 72.4 |
| Monthly Dew Point | 44.6 | 49.7 | 48.2 | 59.8 | 72.6 | 73.4 | 74.2 | 73.9 | 73.2 | 66.1 | 57.1 | 51.8 | 62.1 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 86 | 93 | 92 | 93 | 91 | 97 | 98 | 99 | 96 | 94 | 91 | 85 | 99 |
| -Date | 23 | 20 | 6 | 25 | 26 | 19 | 31 | 11 | 16 | 17 | 21 | 11 | 11-Aug |
| Lowest | 22 | 29 | 30 | 42 | 58 | 65 | 69 | 71 | 52 | 41 | 38 | 21 | 21 |
| -Date | 8 | 4 | 10 | 7 | 1 | 9 | 4 | 17 | 29 | 23 | 25 | 19 | 19-Dec |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 283 | 212 | 190 | 47 | 0 | 0 | 0 | 0 | 0 | 8 | 82 | 192 | 1014 |
| Cooling | 36 | 99 | 84 | 202 | 497 | 552 | 638 | 603 | 494 | 365 | 163 | 66 | 3799 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 83 | 84 | 79 | 86 | 92 | | 95 | 94 | 95 | 89 | 86 | 88 | |
| 6:00 PM | 59 | 62 | 59 | 65 | 75 | 65 | 62 | 68 | 73 | 70 | 69 | 72 | 67 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 61 | 51 | 54 | 74 | 75 | 89 | 82 | 61 | 63 | 58 | 57 | 41 | 64 |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 1 | 1 | 1 | 5 | 2 | 3 | 2 | 11 | 13 | 5 | 6 | 5 | 55 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 1 | 1 | 3 | 1 | 6 | 1 | 11 | 6 | 0 | 0 | 1 | 31 |
| Heavy Fog | 10 | 3 | 3 | 2 | 1 | 0 | 0 | 1 | 1 | 3 | 1 | 13 | 38 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 3 | 3 | 4 | 9 | 30 | 31 | 23 | 20 | 9 | 2 | 0 | 134 |
| - 32° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 6 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.01 | 0.02 | 0.05 | 1.56 | 1.14 | 2.14 | 0.35 | 8.57 | 2.21 | 0.86 | 0.99 | 0.73 | 18.63 |
| Maximum in 24 h | 0.01 | 0.02 | 0.05 | 1.08 | 1.12 | 1.94 | 0.34 | 2.65 | 0.56 | 0.32 | 0.57 | 0.39 | 2.65 |
| -Date | 6 | 2 | 27 | 5-6 | 11 | 25-26 | 8 | 23-24 | 20 | 4-5 | 24 | 15 | 23-24 Aug |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | | | | | | | | | | | | |
| Maximum in 24 h | 0.0 | | | | | | | | | | | | |
| -Date | | | | | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 12.9 | 13.9 | 14.1 | 14.6 | 15.4 | 9.7 | 10.8 | 11.0 | 8.9 | 12.1 | 13.2 | 10.7 | 12.3 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 16 | 2 | 36 | 15 | 36 | 2 | 16 | 13 | 3 | 36 | 15 | 35 | 36 |
| Speed | 46 | 39 | 42 | 44 | 53 | 47 | 32 | 43 | 44 | 39 | 41 | 40 | 53 |
| -Date | 17 | 11 | 7 | 11 | 11 | 7 | 22 | 23 | 27 | 22 | 6 | 15 | 11-May |

## Corpus Christi

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 65.0 | 69.0 | 75.7 | 81.7 | 86.2 | 90.4 | 93.3 | 93.4 | 89.7 | 83.9 | 75.8 | 68.3 | 81.0 |
| Daily Minimum | 30 | 45.3 | 48.0 | 55.3 | 63.2 | 69.5 | 73.4 | 74.8 | 75.0 | 72.3 | 63.9 | 55.6 | 48.4 | 62.1 |
| Monthly | 30 | 55.1 | 58.5 | 65.6 | 72.5 | 77.9 | 81.9 | 84.1 | 84.2 | 81.0 | 73.9 | 65.7 | 58.3 | 71.6 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 58 | 91 | 98 | 102 | 102 | 103 | 101 | 104 | 103 | 103 | 98 | 98 | 91 | 104 |
| -Year | | 1971 | 1940 | 1989 | 1984 | 1984 | 1980 | 1939 | 1962 | 1977 | 1950 | 1988 | 1977 | Jul-39 |
| Lowest | 58 | 14 | 18 | 24 | 33 | 47 | 58 | 64 | 64 | 50 | 28 | 28 | 13 | 13 |
| -Year | | 1962 | 1951 | 1980 | 1987 | 1970 | 1975 | 1967 | 1967 | 1942 | 1993 | 1993 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 338 | 213 | 100 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | 261 | 1016 |
| Cooling | 30 | 31 | 31 | 119 | 234 | 400 | 507 | 592 | 595 | 480 | 281 | 116 | 53 | 3439 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 32 | 87 | 88 | 87 | 90 | 92 | 93 | 93 | 92 | 90 | 90 | 87 | 86 | 90 |
| 6:00 PM | 32 | 71 | 67 | 65 | 69 | 71 | 68 | 63 | 64 | 68 | 68 | 71 | 71 | 68 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 53 | 6.9 | 6.5 | 6.6 | 6.7 | 6.4 | 5.2 | 4.8 | 4.9 | 5.2 | 4.7 | 5.8 | 6.6 | 5.9 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 53 | 43 | 49 | 54 | 56 | 59 | 72 | 80 | 77 | 68 | 68 | 54 | 43 | 60 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 57 | 8.3 | 7.0 | 5.5 | 5.1 | 6.6 | 6.1 | 4.7 | 5.8 | 9.1 | 6.5 | 5.8 | 6.8 | 77.3 |
| Snow or Ice | 57 | * | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * |
| Thunderstorms | 57 | 0.8 | 1.2 | 1.4 | 2.4 | 4.7 | 3.3 | 2.7 | 3.8 | 4.8 | 2.3 | 1.0 | 0.7 | 29.1 |
| Heavy Fog | 54 | 5.9 | 4.9 | 4.0 | 2.5 | 1.1 | 0.2 | 0.2 | 0.2 | 0.3 | 1.2 | 3.3 | 5.3 | 29.1 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 32 | 0.1 | 0.2 | 0.9 | 1.7 | 4.7 | 19.0 | 27.5 | 27.2 | 17.2 | 5.2 | 0.4 | 0.1 | 104.2 |
| - 32° and below | 32 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 32 | 2.8 | 1.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.3 | 1.5 | 6.2 |
| - 0° and below | 32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.71 | 1.96 | 0.94 | 1.72 | 3.33 | 3.38 | 2.39 | 3.31 | 5.52 | 3.02 | 1.59 | 1.26 | 30.13 |
| Maximum Monthl | 58 | 10.78 | 8.11 | 4.89 | 8.04 | 9.38 | 13.35 | 11.92 | 14.79 | 20.33 | 11.02 | 8.53 | 9.80 | 20.33 |
| -Year | | 1958 | 1982 | 1995 | 1956 | 1968 | 1973 | 1976 | 1980 | 1967 | 1981 | 1947 | 1991 | Sep-67 |
| Minimum Monthly | 58 | 0.03 | T | T | T | T | 0.03 | 0.00 | 0.10 | 0.49 | 0.00 | T | 0.01 | 0.00 |
| -Year | | 1971 | 1976 | 1971 | 1984 | 1961 | 1980 | 1957 | 1952 | 1981 | 1952 | 1949 | 1950 | Jul-57 |
| Maximum in 24 h | 54 | 6.38 | 4.85 | 2.99 | 7.19 | 4.65 | 5.65 | 4.61 | 8.92 | 8.76 | 7.96 | 3.44 | 6.81 | 8.92 |
| -Year | | 1958 | 1982 | 1990 | 1956 | 1968 | 1978 | 1981 | 1980 | 1967 | 1995 | 1947 | 1991 | Aug-80 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | * | * | * | * | * | 0.0 | 0.0 | 0.0 | 0.0 | * | * | * | 0.1 |
| Maximum Monthl | 58 | 1.2 | 1.1 | T | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | T | T | 1.2 |
| -Year | | 1940 | 1973 | 1990 | 1993 | 1993 | | | | | 1993 | 1979 | 1989 | Jan-40 |
| Maximum in 24 h | 58 | 1.1 | 1.1 | T | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | T | T | 1.1 |
| -Year | | 1940 | 1973 | 1990 | 1993 | 1993 | | | | | 1993 | 1979 | 1989 | Feb-73 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 54 | 12.0 | 13.0 | 14.0 | 14.2 | 12.8 | 11.7 | 11.6 | 11.0 | 10.4 | 10.4 | 11.7 | 11.6 | 12.0 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 52 | 60 | 54 | 67 | 60 | 61 | 49 | 48 | 61 | 53 | 60 | 54 | 67 |
| Direction | 13 | *31* | *31* | *31* | *31* | *31* | *36* | *18* | *9* | *9* | *9* | *31* | *31* | *31* |
| -Year | | 1992 | 1987 | 1991 | 1994 | 1985 | 1988 | 1986 | 1986 | 1988 | 1984 | 1987 | 1994 | Apr-94 |

# Dallas - Fort Worth, Texas

The Dallas-Fort Worth Metroplex is located in North Central Texas, approximately 250 miles north of the Gulf of Mexico. It is near the headwaters of the Trinity River, which lie in the upper margins of the Coastal Plain. The rolling hills in the area range from 500 feet to 800 feet in elevation.

The Dallas-Fort Worth climate is humid subtropical with hot summers. It is also continental, characterized by a wide annual temperature range. Precipitation also varies considerably, ranging from less than 20 inches to more than 50 inches.

Winters are mild, but northers occur about three times each month, and often are accompanied by sudden drops in temperature. Periods of extreme cold that occasionally occur are short-lived, so that even in January mild weather occurs frequently.

The highest temperatures of summer are associated with fair skies, westerly winds and low humidities. Characteristically, hot spells in summer are broken into three-to-five day periods by thunderstorm activity. There are only a few nights each summer when the low temperature exceeds 80°F. Summer daytime temperatures frequently exceed 100°F. Air conditioners are recommended for maximum comfort indoors and while traveling via automobile.

Throughout the year, rainfall occurs more frequently during the night. Usually, periods of rainy weather last for only a day or two, and are followed by several days with fair skies. A large part of the annual precipitation results from thunderstorm activity, with occasional heavy rainfall over brief periods of time. Thunderstorms occur throughout the year, but are most frequent in the spring. Hail falls on about two or three days a year, ordinarily with only slight and scattered damage. Windstorms occurring during thunderstorm activity are sometimes destructive. Snowfall is rare.

The average length of the warm season (freeze-free period) in the Dallas-Fort Worth Metroplex is about 249 days. The average last occurrence of 32°F or below is mid March and the average first occurrence of 32°F or below is in late November.

## Dallas-Fort Worth

**1996**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 55.2 | 64.7 | 65.8 | 77.4 | 89.5 | 93.0 | 95.8 | 91.3 | 83.9 | 77.9 | 64.2 | 60.6 | 76.6 |
| Daily Minimum | 30.9 | 39.5 | 40.7 | 50.9 | 69.9 | 71.9 | 76.5 | 73.7 | 65.1 | 55.9 | 45.5 | 37.7 | 54.9 |
| Monthly | 43.0 | 52.1 | 53.3 | 64.2 | 79.7 | 82.5 | 86.2 | 82.5 | 74.5 | 66.9 | 54.9 | 49.2 | 65.8 |
| Monthly Dew Point | 29.7 | 32.4 | 34.3 | 46.3 | 65.3 | 71.5 | 70.3 | 70.5 | 64.1 | 54.8 | 46.6 | 40.0 | 52.2 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 78 | 95 | 88 | 93 | 99 | 101 | 106 | 101 | 91 | 86 | 79 | 80 | 106 |
| -Date | 13 | 21 | 14 | 19 | 27 | 20 | 7 | 5 | 11 | 4 | 20 | 11 | 7-Jul |
| Lowest | 15 | 8 | 20 | 36 | 54 | 60 | 72 | 68 | 44 | 40 | 29 | 18 | 8 |
| -Date | 19 | 4 | 9 | 5 | 1 | 9 | 25 | 31 | 28 | 23 | 26 | 19 | 4-Feb |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 671 | 403 | 384 | 104 | 0 | 0 | 0 | 0 | 14 | 51 | 308 | 483 | 2418 |
| Cooling | 0 | 37 | 27 | 87 | 464 | 531 | 663 | 549 | 302 | 120 | 10 | 2 | 2792 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 76 | 70 | 71 | 75 | 82 | 87 | 79 | 87 | 88 | 85 | 89 | 86 | 81 |
| 6:00 PM | 54 | 40 | 37 | 41 | 51 | 52 | 48 | 60 | 59 | 56 | 70 | 64 | 53 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 14 | 8 | 5 | 11 | 3 | 77 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 1 | 1 | 5 | 4 | 3 | 10 | 9 | 8 | 2 | 3 | 5 | 1 | 52 |
| Heavy Fog | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 2 | 13 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 2 | 0 | 2 | 19 | 23 | 27 | 20 | 6 | 0 | 0 | 0 | 99 |
| - 32° and below | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 17 | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 44 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.97 | 0.35 | 2.36 | 2.14 | 0.95 | 3.42 | 3.85 | 5.02 | 1.51 | 6.56 | 5.54 | 0.47 | 33.14 |
| Maximum in 24 h | 0.49 | 0.23 | 1.17 | 1.37 | 0.83 | 0.64 | 2.12 | 1.89 | 0.80 | 4.29 | 1.73 | 0.43 | 4.29 |
| -Date | 17-18 | 26-27 | 27 | 4-5 | 10 | 15 | 14 | 31 | 14-15 | 27-28 | 6-7 | 14-15 | 27-28-Oct |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | | T | | | | | | | | | T | T | T |
| Maximum in 24 h | | T | | | | | | | | | T | T | T |
| -Date | | 2x | | | | | | | | | 25+ | 17+ | 3x |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 13.3 | 12.1 | 14.5 | 14.3 | 16.1 | 9.3 | 9.3 | 8.2 | 7.5 | 10.5 | 11.2 | 11.7 | 11.5 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 19 | 1 | 33 | 19 | 18 | 34 | 13 | 34 | 24 | 19 | 15 | 20 | 34 |
| Speed | 51 | 43 | 44 | 45 | 43 | 57 | 37 | 47 | 39 | 48 | 41 | 40 | 57 |
| -Date | 17 | 10 | 18+ | 28 | 31 | 1 | 3 | 11 | 26 | 21 | 16 | 21 | 1-Jun |

## Dallas - Fort Worth

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 54.1 | 58.9 | 67.8 | 76.3 | 82.9 | 91.9 | 96.5 | 96.2 | 87.8 | 78.5 | 66.8 | 57.5 | 76.3 |
| Daily Minimum | 30 | 32.7 | 36.9 | 45.6 | 54.7 | 62.6 | 70.0 | 74.1 | 73.6 | 66.9 | 55.8 | 45.4 | 36.3 | 54.6 |
| Monthly | 30 | 43.4 | 47.9 | 56.7 | 65.5 | 72.8 | 81.0 | 85.3 | 84.9 | 77.4 | 67.2 | 56.2 | 46.9 | 65.4 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 43 | 88 | 95 | 96 | 95 | 103 | 113 | 110 | 108 | 106 | 102 | 89 | 88 | 113 |
| -Year | | 1969 | 1996 | 1991 | 1990 | 1985 | 1980 | 1980 | 1964 | 1985 | 1979 | 1989 | 1955 | Jun-80 |
| Lowest | 43 | 4 | 7 | 15 | 29 | 41 | 51 | 59 | 56 | 43 | 29 | 20 | -1 | -1 |
| -Year | | 1964 | 1985 | 1980 | 1989 | 1978 | 1964 | 1972 | 1967 | 1984 | 1993 | 1959 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 670 | 484 | 286 | 75 | 0 | 0 | 0 | 0 | 0 | 51 | 275 | 566 | 2407 |
| Cooling | 30 | 0 | 5 | 29 | 90 | 246 | 480 | 629 | 617 | 372 | 119 | 11 | 5 | 2603 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 33 | 80 | 79 | 80 | 83 | 87 | 86 | 81 | 81 | 85 | 83 | 81 | 80 | 82 |
| 6:00 PM | 33 | 59 | 54 | 51 | 52 | 58 | 51 | 45 | 45 | 53 | 55 | 58 | 60 | 53 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 42 | 6.2 | 5.9 | 5.9 | 5.9 | 6.0 | 4.9 | 4.3 | 4.3 | 4.8 | 4.6 | 5.3 | 5.7 | 5.3 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 17 | 52 | 54 | 58 | 61 | 47 | 67 | 75 | 73 | 67 | 63 | 57 | 52 | 61 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 43 | 7.3 | 6.5 | 7.3 | 7.9 | 8.9 | 6.5 | 4.8 | 4.7 | 6.7 | 6.1 | 5.9 | 6.5 | 79.1 |
| Snow or Ice | 43 | 0.5 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | 0.1 | 1.0 |
| Thunderstorms | 43 | 1.2 | 1.8 | 4.2 | 6.0 | 7.6 | 6.3 | 4.9 | 4.5 | 3.6 | 3.1 | 1.9 | 1.1 | 46.2 |
| Heavy Fog | 43 | 2.5 | 1.5 | 1.0 | 0.6 | 0.3 | 0.1 | 0.0 | 0.* | 0.1 | 0.8 | 1.4 | 2.5 | 10.8 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 33 | 0.0 | 0.0 | 0.3 | 0.8 | 3.9 | 19.9 | 27.6 | 26.5 | 14.2 | 2.7 | 0.0 | 0.0 | 95.9 |
| - 32° and below | 33 | 1.4 | 0.7 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 3.0 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 33 | 14.2 | 8.7 | 2.7 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 2.8 | 9.6 | 38.3 |
| - 0° and below | 33 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | * |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | | 1.83 | 2.18 | 2.77 | 3.50 | 4.88 | 2.98 | 2.31 | 2.21 | 3.39 | 3.52 | 2.29 | 1.84 | 33.70 |
| Maximum Monthly | 43 | 4.54 | 6.20 | 6.69 | 12.19 | 13.66 | 8.75 | 11.13 | 6.85 | 9.52 | 14.18 | 6.23 | 8.75 | 14.18 |
| -Year | | 1990 | 1965 | 1995 | 1957 | 1982 | 1989 | 1973 | 1970 | 1964 | 1981 | 1964 | 1991 | Oct-81 |
| Minimum Monthly | 43 | T | 0.15 | 0.10 | 0.11 | 0.95 | 0.40 | 0.00 | T | 0.09 | T | 0.20 | 0.17 | 0.00 |
| -Year | | 1986 | 1963 | 1972 | 1987 | 1996 | 1964 | 1993 | 1980 | 1984 | 1975 | 1970 | 1981 | Jul-93 |
| Maximum in 24 h | 43 | 3.11 | 4.06 | 4.39 | 4.55 | 5.34 | 3.15 | 3.75 | 4.05 | 4.76 | 5.91 | 2.83 | 4.22 | 5.91 |
| -Year | | 1990 | 1965 | 1977 | 1957 | 1989 | 1989 | 1975 | 1976 | 1965 | 1949 | 1964 | 1991 | Oct-59 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Maximum Monthly | 43 | 12.1 | 13.5 | 2.5 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 5.0 | 2.6 | 13.5 |
| -Year | | 1964 | 1978 | 1962 | 1995 | 1995 | | | | | 1993 | 1976 | 1963 | Feb-78 |
| Maximum in 24 h | 43 | 12.1 | 7.5 | 2.5 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 4.8 | 2.5 | 12.1 |
| -Year | | 1964 | 1978 | 1962 | 1995 | 1995 | | | | | 1993 | 1976 | 1963 | Jan-64 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 43 | 10.9 | 11.7 | 12.7 | 12.4 | 11.0 | 10.5 | 9.8 | 8.9 | 9.3 | 9.7 | 10.7 | 10.8 | 10.7 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 66 | 54 | 53 | 66 | 71 | 58 | 54 | 81 | 51 | 63 | 68 | 55 | 81 |
| Direction | 13 | *36* | *18* | *27* | *18* | *36* | *31* | *4* | *31* | *18* | *27* | *27* | *18* | *31* |
| -Year | | 1985 | 1985 | 1992 | 1994 | 1994 | 1989 | 1989 | 1985 | 1986 | 1992 | 1992 | 1988 | Aug-85 |

# Del Rio, Texas

Del Rio is located on the Rio Grande River, on the western tip of the Balcones Escarpment, in southwest Texas. Elevation is near 1,000 feet and varies little within the city but rises to 2,300 feet in the northern part of the county. Regional agriculture is chiefly wool and mohair production to the north and west of Del Rio and garden crops to the southeast. Lake Amistad, a reservoir of 65,000 surface acres, lies 10 miles west of Del Rio.

The climate of Del Rio is semi-arid continental. Annual precipitation is insufficient for dry farming. However, San Felipe Springs and the Rio Grande provide adequate water for irrigation farming. Over 80 percent of the average annual precipitation occurs from April through October. During this period, rainfall is chiefly in the form of showers and thunderstorms, often as heavy downpours, resulting in flash flooding. The small amount of precipitation from November through March usually falls as steady light rain.

Hail occurs in the vicinity of Del Rio about once per year and reaches severe proportions about once every five years. Sleet or snow falls on an average of once a year, but frequently melts as it falls. A snowfall heavy enough to blanket the ground only occurs about once every four or five years, and seldom remains for more than 24 hours.

Temperature averages indicate mild winters and quite warm summers. Cold periods in winter are ushered in by strong, dry, dusty north, and northwest winds known as northers, and temperature drops of as much as 25 degrees in a few hours are not uncommon. Cold weather periods usually do not last more than two or three days. Temperature as low as 32 degrees have occurred as early as October and as late as March. Normal occurrences of the earliest freezing temperature in autumn and the latest in spring are early December and mid February, which results in an average growing season of 300 days. Hot weather is persistent from late May to mid September and temperatures above 100 degrees have been recorded as early as March and as late as October. Low humidity and fresh breezes tend to alleviate uncomfortable conditions usually associated with high

temperatures. The mean early morning humidity is about 79 percent, and the mean afternoon humidity is near 44 percent.

Clear to partly cloudy skies predominate, and even in the more cloudy winter months, the mean number of cloudy days are less than the number of clear days.

## Del Rio

## 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 68.4 | 72.7 | 74.8 | 85.7 | 94.7 | 99.1 | 100.7 | 95.8 | 89.1 | 82.0 | 71.4 | 65.3 | 83.3 |
| Daily Minimum | 37.8 | 45.8 | 47.4 | 56.1 | 72.0 | 76.4 | 77.9 | 75.6 | 69.9 | 60.2 | 50.4 | 40.4 | 59.2 |
| Monthly | 53.1 | 59.3 | 61.1 | 70.9 | 83.4 | 87.8 | 89.3 | 85.7 | 79.5 | 71.1 | 60.9 | 52.9 | 71.3 |
| Monthly Dew Point | | | | 42.3 | 63.8 | 63.5 | 64.2 | 66.4 | 67.1 | | 49.1 | 39.7 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 86 | 99 | 90 | 103 | 101 | 106 | 108 | 106 | 94 | 93 | 85 | 83 | 108 |
| -Date | 30 | 21 | 30 | 25 | 28 | 20 | 1 | 3 | 3 | 17 | 21 | 11 | 1-Jul |
| Lowest | 24 | 26 | 30 | 38 | 57 | 67 | 74 | 70 | 50 | 38 | 32 | 20 | 20 |
| -Date | 19 | 5 | 9 | 7 | 1 | 3 | 26 | 30 | 29 | 23 | 26 | 19 | 19-Dec |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 365 | 238 | 205 | 46 | 0 | 0 | 0 | 0 | 0 | 18 | 171 | 372 | 1415 |
| Cooling | 5 | 78 | 90 | 232 | 577 | 690 | 759 | 649 | 441 | 213 | 54 | 0 | 3788 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | | | | 63 | 79 | 71 | 69 | 78 | 88 | 82 | 85 | 85 | |
| 6:00 PM | | | | 25 | 38 | 30 | 30 | 43 | 54 | 50 | 57 | 50 | |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 0 | 3 | 1 | 4 | 4 | 1 | 3 | 9 | 6 | 4 | 6 | 2 | 43 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Heavy Fog | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 13 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 4 | 2 | 13 | 28 | 30 | 30 | 25 | 21 | 2 | 0 | 0 | 155 |
| - 32° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 8 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 23 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | T | 0.39 | 0.02 | 0.62 | 1.20 | 0.02 | 0.07 | 4.77 | 2.09 | 0.88 | 0.87 | 0.34 | 11.27 |
| Maximum in 24 h | T | 0.22 | 0.02 | 0.53 | 0.97 | 0.02 | 0.05 | 2.33 | 1.79 | 0.54 | 0.45 | 0.33 | 2.33 |
| -Date | 30 | 28 | 27 | 5 | 30 | 25 | 11 | 30 | 14 | 28 | 27-28 | 15 | 23-May |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | T | 0.0 | | | | | | | | | | |
| Maximum in 24 h | 0.0 | T | 0.0 | | | | | | | | | | |
| -Date | | 29 | | | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | | | | 10.2 | 12.8 | 11.0 | 10.7 | 9.2 | 7.3 | 8.1 | 8.6 | 6.6 | |
| PEAK GUST | | | | | | | | | | | | | |
| Speed | | | | 44 | 39 | 37 | 37 | 38 | 47 | 44 | 43 | 36 | |
| Direction | | | | 30 | 15 | 2 | 2 | 21 | 22 | 35 | 32 | 34 | |
| -Date | | | | 12 | 3 | 2 | 14 | 5 | 14 | 21 | 24 | 17 | |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 61.9 | 67.1 | 75.7 | 83.4 | 88.2 | 93.6 | 96.2 | 96.0 | 90.4 | 81.7 | 71.7 | 63.5 | 80.8 |
| Daily Minimum | 30 | 38.5 | 42.9 | 50.9 | 59.2 | 66.3 | 71.7 | 74.1 | 73.6 | 69.1 | 59.7 | 49.0 | 40.6 | 58.0 |
| Monthly | 30 | 50.2 | 55.1 | 63.3 | 71.3 | 77.3 | 82.7 | 85.2 | 84.8 | 79.8 | 70.7 | 60.4 | 52.1 | 69.4 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 34 | 89 | 99 | 101 | 106 | 106 | 112 | 108 | 109 | 105 | 106 | 96 | 90 | 112 |
| -Year | | 1972 | 1996 | 1971 | 1984 | 1979 | 1988 | 1996 | 1969 | 1983 | 1979 | 1988 | 1977 | Jun-88 |
| Lowest | 34 | 15 | 14 | 21 | 33 | 45 | 55 | 64 | 64 | 48 | 28 | 22 | 10 | 10 |
| -Year | | 1982 | 1985 | 1980 | 1987 | 1970 | 1970 | 1976 | 1966 | 1995 | 1993 | 1976 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 465 | 291 | 139 | 14 | 0 | 0 | 0 | 0 | 0 | 19 | 171 | 407 | 1506 |
| Cooling | 30 | 6 | 14 | 87 | 203 | 381 | 531 | 626 | 614 | 444 | 196 | 33 | 7 | 3142 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 17 | 76 | 74 | 72 | 77 | 83 | 82 | 79 | 80 | 84 | 82 | 80 | 76 | 79 |
| 6:00 PM | 17 | 46 | 40 | 36 | 40 | 46 | 42 | 39 | 41 | 49 | 50 | 52 | 49 | 44 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 17 | 5.8 | 5.5 | 5.5 | 6.1 | 6.4 | 5.5 | 4.9 | 5.0 | 5.4 | 4.9 | 5.2 | 5.6 | 5.5 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | | |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 33 | 5.3 | 5.1 | 5.0 | 5.5 | 7.5 | 5.3 | 4.2 | 4.1 | 6.5 | 5.0 | 4.5 | 5.5 | 63.5 |
| Snow or Ice | 33 | 0.2 | 0.1 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.0 | 0.0 | 0.3 |
| Thunderstorms | 21 | 0.3 | 0.5 | 2.0 | 4.3 | 7.9 | 4.3 | 3.8 | 3.9 | 3.9 | 2.0 | 0.8 | 0.4 | 34.1 |
| Heavy Fog | 21 | 3.0 | 1.6 | 0.9 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 3.0 | 4.2 | 14.3 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 33 | 0.0 | 0.3 | 1.9 | 6.1 | 13.2 | 24.7 | 28.0 | 28.3 | 18.9 | 4.3 | 0.2 | * | 125.9 |
| - 32° and below | 33 | 0.1 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 33 | 6.4 | 3.2 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.2 | 4.5 | 16.1 |
| - 0° and below | 33 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.56 | 0.95 | 0.69 | 1.98 | 2.03 | 2.11 | 1.85 | 1.47 | 2.83 | 2.24 | 0.92 | 0.61 | 18.24 |
| Maximum Monthly | 34 | 2.36 | 3.80 | 3.20 | 7.51 | 5.15 | 5.74 | 13.18 | 6.10 | 15.79 | 11.33 | 3.36 | 3.14 | 15.79 |
| -Year | | 1994 | 1992 | 1990 | 1981 | 1980 | 1987 | 1976 | 1971 | 1964 | 1969 | 1969 | 1994 | Sep-64 |
| Minimum Monthly | 34 | T | 0.00 | T | 0.12 | 0.20 | T | 0.04 | T | 0.36 | 0.00 | T | T | 0.00 |
| -Year | | 1996 | 1974 | 1971 | 1988 | 1973 | 1990 | 1970 | 1985 | 1981 | 1979 | 1988 | 1973 | Oct-79 |
| Maximum in 24 h | 30 | 1.91 | 2.57 | 1.73 | 4.57 | 3.76 | 2.67 | 6.34 | 3.81 | 5.52 | 7.60 | 2.74 | 2.40 | 7.60 |
| -Year | | 1994 | 1987 | 1979 | 1969 | 1995 | 1993 | 1975 | 1969 | 1970 | 1969 | 1978 | 1994 | Oct-69 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.6 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.0 | 0.0 | 0.9 |
| Maximum Monthly | 33 | 9.8 | 2.7 | 3.0 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | T | T | 9.8 |
| -Year | | 1985 | 1973 | 1965 | 1990 | 1995 | | | | | 1993 | 1976 | 1989 | Feb-73 |
| Maximum in 24 h | 30 | 8.6 | 2.7 | 3.0 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | T | T | 8.6 |
| -Year | | 1985 | 1973 | 1965 | 1990 | 1995 | | | | | 1993 | 1976 | 1989 | Jan-73 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 18 | 8.8 | 9.5 | 10.9 | 11.0 | 10.7 | 11.4 | 10.9 | 10.2 | 9.2 | 9.1 | 8.5 | 8.4 | 9.9 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 18 | 37 | 37 | 52 | 44 | 48 | 38 | 38 | 60 | 47 | 46 | 43 | 43 | 60 |
| Direction | 18 | *31* | *31* | *31* | 30 | *31* | *36* | *31* | *13* | 22 | *31* | 32 | *27* | *13* |
| -Year | | 1973 | 1974 | 1964 | 1996 | 1970 | 1968 | 1969 | 1970 | 1996 | 1967 | 1996 | 1969 | Aug-70 |

# El Paso, Texas

The city of El Paso is located in the extreme west point of Texas al an elevation of about 3,700 feet. The National Weather Service station is located on a mesa about 200 feet higher than the city. The climate of the region is characterized by an abundance of sunshine throughout the year, high daytime summer temperatures, very low humidity, scanty rainfall, and a relatively mild winter season. The Franklin Mountains begin within the city limits and extend northward for about 16 miles. Peaks of these mountains range from 4687 to 7152 feet above sea level.

Rainfall throughout the year is light, insufficient for any growth except desert vegetation. Irrigation is necessary for crops, gardens, and lawns. Dry periods lasting several months are not unusual. Almost half of the precipitation occurs in the three-month period, July through September, form brief but often heavy thunderstorms. Small amounts of snow fall nearly every winter, but snow cover rarely amounts to more than an inch and seldom remains on the ground for more than a few hours.

Daytime summer temperatures are high, frequently above 90°F and occasionally above 100°F. Summer nights are usually comfortable, with temperatures in the 60s. It should be noted that when temperatures are high the relative humidity is generally quite low. A 20-year tabulation of observations with temperatures above 90°F shows that in April, May and June the humidity averaged from 10% to 14%, while in July, August, and September it averaged 22% to 24%. This low humidity aids the efficiency of evaporative air coolers, which are widely used in homes and public buildings and are quite effective in cooling the air to comfortable temperatures.

Winter daytime temperatures are mild. At night they drop below freezing about half the time in December and January. The flat, irrigated land of the Rio Grande Valley in the vicinity of El Paso is noticeably cooler, particularly at night, than the airport or the city proper, both in summer and winter. This results in more comfortable temperatures in summer but increases the severity of freezes in winter. The cooler air in the Valley also

causes marked short-period fluctuations of temperature and dewpoint at the airport with changes in wind direction, especially during the early morning hours.

Dust and sandstorms are the most unpleasant features of the weather in El Paso. While wind speeds are not excessively high, the soil surface is dry and loose and natural vegetation is sparse, so moderately strong winds raise considerable dust and sand. A tabulation of duststorms for a period of 20 years shows that they are most frequent in March and April, and comparatively rare in the period July through December. Prevailing winds are from the north in winter and the south in summer.

## El Paso 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 61.4 | 67.8 | 69.2 | 79.5 | 94.1 | 97.3 | 94.4 | 90.2 | 85.9 | 79.9 | | 61.0 | |
| Daily Minimum | 31.6 | 41.2 | 40.0 | 51.4 | 66.1 | 69.6 | 71.3 | 69.0 | 61.1 | 51.1 | | 31.5 | |
| Monthly | 46.5 | 54.5 | 54.6 | 65.5 | 80.1 | 83.5 | 82.9 | 79.6 | 73.5 | 65.5 | | 46.3 | |
| Monthly Dew Point | 17.5 | 24.9 | 14.7 | 19.2 | 27.0 | 45.2 | 57.2 | 55.5 | 49.5 | 35.4 | | 17.9 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 73 | 80 | 80 | 96 | 102 | 107 | 100 | 99 | 94 | 92 | | 74 | |
| -Date | 30 | 18 | 21 | 27 | 13 | 21 | 30 | 14 | 1 | 9 | | 9 | |
| Lowest | 20 | 28 | 21 | 35 | 52 | 56 | 67 | 62 | 49 | 26 | | 6 | |
| -Date | 24 | 28 | 9 | 7 | 1 | 1 | 15 | 24 | 29 | 22 | | 18 | |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 562 | 305 | 322 | 89 | 0 | 0 | 0 | 0 | 0 | 103 | | 571 | |
| Cooling | 0 | 6 | 7 | 112 | 475 | 560 | 561 | 462 | 263 | 125 | | 0 | |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 5:00 AM | 47 | 47 | 31 | 29 | 23 | 47 | 64 | 62 | 65 | 50 | 44 | 47 | 46 |
| 5:00 PM | 22 | 22 | 14 | 13 | 10 | 19 | 28 | 36 | 30 | 23 | 24 | 23 | 22 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 98 | 93 | 98 | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 1 | 3 | 0 | 2 | 0 | 5 | 12 | 10 | 9 | 0 | | 0 | |
| Snow or Ice | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | |
| Thunderstorms | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 2 | 3 | 0 | | 0 | |
| Heavy Fog | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | | 0 | |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 0 | 0 | 5 | 27 | 26 | 28 | 19 | 7 | 7 | | 0 | |
| - 32° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 20 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | 16 | |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.11 | 0.19 | T | 0.49 | 0.00 | 2.36 | 1.97 | 1.87 | 1.24 | T | | 0.00 | |
| Maximum in 24 h | 0.11 | 0.17 | T | 0.47 | 0.00 | 1.15 | 0.56 | 0.86 | 0.63 | T | | 0.00 | |
| -Date | 2 | 1-2 | 29+ | 5 | | 29 | 10 | 17-18 | 7-8 | 27+ | | | |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 1.6 | 0.0 | | T | 0.0 | | | | | | | 0.0 | |
| Maximum in 24 h | 1.6 | 0.0 | | T | 0.0 | | | | | | | 0.0 | |
| -Date | 2 | | | 5 | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 9.5 | 8.9 | 10.8 | 11.6 | 10.9 | 8.2 | 7.2 | 7.7 | 7.8 | 8.7 | | | |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 26 | 25 | 26 | 28 | 23 | 22 | 29 | 3 | 11 | 25 | | 25 | |
| Speed | 75 | 52 | 60 | 57 | 48 | 51 | 62 | 46 | 45 | 47 | | 40 | |
| -Date | 17 | 26 | 29 | 2 | 13 | 29 | 30 | 17 | 1 | 25 | | 23 | |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 56.1 | 62.2 | 69.9 | 78.7 | 87.1 | 96.5 | 96.1 | 93.5 | 87.1 | 78.4 | 66.4 | 57.5 | 77.5 |
| Daily Minimum | 30 | 29.4 | 33.9 | 40.2 | 48.0 | 56.5 | 64.3 | 68.4 | 66.6 | 61.6 | 49.6 | 38.4 | 30.7 | 49.0 |
| Monthly | 30 | 42.8 | 48.1 | 55.1 | 63.4 | 71.8 | 80.4 | 82.3 | 80.1 | 74.4 | 64.0 | 52.4 | 44.1 | 63.2 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 57 | 80 | 83 | 89 | 98 | 104 | 114 | 112 | 108 | 104 | 96 | 87 | 80 | 114 |
| -Year | | 1970 | 1986 | 1989 | 1989 | 1951 | 1994 | 1979 | 1980 | 1982 | 1994 | 1983 | 1973 | Jun-94 |
| Lowest | 57 | -8 | 8 | 14 | 23 | 31 | 46 | 57 | 56 | 41 | 25 | 1 | 5 | -8 |
| -Year | | 1962 | 1985 | 1971 | 1983 | 1967 | 1988 | 1988 | 1973 | 1945 | 1970 | 1976 | 1953 | Jan-62 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 688 | 473 | 316 | 110 | 7 | 0 | 0 | 0 | 0 | 88 | 378 | 648 | 2708 |
| Cooling | 30 | 0 | 0 | 10 | 62 | 217 | 462 | 536 | 468 | 282 | 57 | 0 | 0 | 2094 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 5:00 AM | 36 | 66 | 56 | 47 | 40 | 42 | 45 | 62 | 67 | 68 | 64 | 62 | 66 | 57 |
| 5:00 PM | 36 | 35 | 27 | 21 | 16 | 17 | 18 | 29 | 33 | 34 | 30 | 32 | 38 | 28 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 53 | 4.6 | 4.3 | 4.2 | 3.5 | 3.2 | 2.8 | 4.5 | 4.3 | 3.5 | 3.2 | 3.5 | 4.3 | 3.8 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 53 | 77 | 82 | 86 | 88 | 89 | 90 | 81 | 81 | 83 | 84 | 82 | 77 | 83 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 57 | 4.1 | 2.9 | 2.5 | 1.7 | 2.5 | 3.3 | 7.9 | 8.0 | 5.4 | 4.1 | 2.8 | 3.9 | 49.1 |
| Snow or Ice | 57 | 0.5 | 0.3 | * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.3 | 0.5 | 1.7 |
| Thunderstorms | 57 | 0.2 | 0.4 | 0.5 | 1.0 | 3.0 | 4.5 | 10.4 | 10.1 | 4.1 | 1.8 | 0.3 | 0.2 | 36.5 |
| Heavy Fog | 57 | 0.7 | 0.2 | 0.1 | * | * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.6 | 2.1 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 36 | 0.0 | 0.0 | 0.0 | 2.1 | 12.9 | 26.0 | 27.0 | 23.8 | 12.3 | 1.8 | 0.0 | 0.0 | 105.9 |
| - 32° and below | 36 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.7 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 36 | 19.0 | 11.7 | 4.9 | 0.8 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 8.0 | 17.9 | 62.7 |
| - 0° and below | 36 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.40 | 0.41 | 0.29 | 0.20 | 0.25 | 0.67 | 1.54 | 1.58 | 1.70 | 0.76 | 0.44 | 0.57 | 8.81 |
| Maximum Monthly | 57 | 1.84 | 1.69 | 2.26 | 1.42 | 4.22 | 3.18 | 5.53 | 5.57 | 6.68 | 4.31 | 1.63 | 3.29 | 6.68 |
| -Year | | 1949 | 1973 | 1958 | 1986 | 1992 | 1984 | 1968 | 1984 | 1974 | 1945 | 1961 | 1991 | Sep-74 |
| Minimum Monthly | 57 | 0.00 | 0.00 | T | 0.00 | 0.00 | T | 0.04 | T | T | 0.00 | 0.00 | 0.00 | 0.00 |
| -Year | | 1967 | 1943 | 1996 | 1978 | 1996 | 1990 | 1978 | 1962 | 1959 | 1952 | 1964 | 1996 | May-96 |
| Maximum in 24 h | 57 | 0.61 | 0.87 | 1.72 | 1.08 | 2.40 | 1.56 | 2.63 | 2.30 | 2.52 | 1.77 | 1.19 | 1.76 | 2.63 |
| -Year | | 1960 | 1956 | 1941 | 1966 | 1992 | 1986 | 1968 | 1984 | 1958 | 1945 | 1943 | 1987 | Jul-68 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.6 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.0 | 0.0 | 0.9 |
| Maximum Monthly | 57 | 8.3 | 8.9 | 7.3 | 16.5 | T | T | T | 0.0 | T | 1.0 | 12.7 | 25.9 | 25.9 |
| -Year | | 1949 | 1956 | 1958 | 1983 | 1992 | 1992 | 1990 | | 1993 | 1980 | 1976 | 1987 | Dec-87 |
| Maximum in 24 h | 57 | 5.2 | 7.2 | 7.3 | 8.8 | T | T | T | 0.0 | T | 1.0 | 7.8 | 16.8 | 16.8 |
| -Year | | 1992 | 1956 | 1958 | 1983 | 1992 | 1992 | 1990 | | 1993 | 1980 | 1961 | 1987 | Dec-87 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 54 | 8.3 | 9.1 | 10.9 | 11.0 | 10.3 | 9.3 | 8.3 | 7.8 | 7.6 | 7.5 | 8.0 | 7.9 | 8.8 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 75 | 60 | 60 | 57 | 52 | 69 | 63 | 48 | 62 | 53 | 54 | 61 | 75 |
| Direction | 13 | 26 | *27* | 26 | 28 | *27* | *13* | 25 | *13* | 26 | 25 | *27* | 25 | *13* |
| -Year | | 1996 | 1987 | 1996 | 1996 | 1995 | 1994 | 1995 | 1991 | 1995 | 1995 | 1994 | 1995 | Jun-94 |

# Houston, Texas

Houston, the largest city in Texas, is located in the flat Coastal Plains, about 50 miles from the Gulf of Mexico and about 25 miles from Galveston Bay. The climate is predominantly marine. The terrain includes numerous small streams and bayous which, together with the nearness to Galveston Bay, favor the development of both ground and advective fogs. Prevailing winds are from the southeast and south, except in January, when frequent passages of high pressure areas bring invasions of polar air and prevailing northerly winds.

Temperatures are moderated by the influence of winds from the Gulf, which result in mild winters. Another effect of the nearness of the Gulf is abundant rainfall, except for rare extended dry periods. Polar air penetrates the area frequently enough to provide variability in the weather.

Records of sky cover for daylight hours indicate about one-fourth of the days per year as clear, with a high number of clear days in October and November. Cloudy days are relatively frequent from December to May and partly cloudy days are the more frequent for June through September. Sunshine averages nearly 60% of the possible amount for the year ranging from 42% in January to 67% in June.

Heavy fog occurs on an average of 16 days a year and light fog occurs about 62 days a year in the city. The frequency of heavy fog is considerably higher at William P. Hobby Airport than at Intercontinental Airport.

Destructive windstorms are fairly infrequent, but both thundersqualls and tropical storms occasionally pass through the area.

## Houston 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 64.5 | 69.8 | 69.8 | 81.5 | 90.3 | 91.5 | 94.3 | 91.4 | 87.1 | 80.5 | 72.3 | 68.0 | 80.1 |
| Daily Minimum | 39.5 | 47.5 | 46.3 | 57.2 | 72.5 | 69.8 | 73.2 | 72.6 | 67.8 | 60.6 | 51.7 | 46.8 | 58.8 |
| Monthly | 52.0 | 58.7 | 58.1 | 69.4 | 81.4 | 80.7 | 83.8 | 82.0 | 77.5 | 70.6 | 62.0 | 57.4 | 69.5 |
| Monthly Dew Point | 41.6 | 44.8 | 43.7 | 55.3 | 69.7 | 70.3 | 73.2 | 72.8 | 70.0 | 62.5 | 54.9 | | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 82 | 90 | 87 | 92 | 99 | 97 | 97 | 99 | 93 | 88 | 85 | 80 | 99 |
| -Date | 30 | 22 | 30 | 20 | 29 | 19 | 31 | 2 | 16 | 17 | 6 | 28 | 28-Jul |
| Lowest | 19 | 22 | 28 | 37 | 51 | 56 | 70 | 68 | 50 | 40 | 35 | 21 | 19 |
| -Date | 8 | 4 | 10 | 7 | 1 | 9 | 27 | 20 | 29 | 23 | 26 | 20 | 10-Dec |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 408 | 267 | 259 | 54 | 0 | 0 | 0 | 0 | 1 | 29 | 159 | 280 | 1457 |
| Cooling | 15 | 89 | 53 | 192 | 513 | 475 | 587 | 532 | 384 | 205 | 78 | 51 | 3174 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 85 | 80 | 81 | 86 | 90 | 92 | 95 | 96 | 96 | 91 | 91 | 89 | 89 |
| 6:00 PM | 60 | 52 | 51 | 53 | 64 | 62 | 61 | 72 | 78 | 76 | 77 | 75 | 65 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | 5.8 | 6.7 | 5.6 | 5.7 | 6.9 | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 66 | 68 | 74 | 80 | 86 | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 6 | 5 | 4 | 4 | 2 | 11 | 9 | 16 | 12 | 8 | 6 | 11 | 94 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 1 | 0 | 2 | 2 | 11 | 7 | 16 | 13 | 2 | 2 | 5 | 61 |
| Heavy Fog | 5 | 0 | 2 | 1 | 0 | 4 | 0 | 2 | 2 | 2 | 3 | 3 | 24 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 1 | 0 | 3 | 17 | 22 | 29 | 19 | 10 | 0 | 0 | 0 | 101 |
| - 32° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 8 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 21 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.88 | 1.29 | 0.12 | 2.05 | 0.56 | 8.37 | 1.11 | 10.58 | 6.96 | 2.60 | 4.55 | 3.74 | 42.81 |
| Maximum in 24 h | 0.49 | 0.77 | 0.09 | 1.50 | 0.54 | 2.27 | 0.79 | 2.88 | 2.35 | 1.17 | 2.80 | 2.19 | 2.88 |
| -Date | 5 | 28-29 | 24-25 | 22 | 11 | 24-25 | 18 | 10-11 | 18-19 | 5 | 24 | 15 | 10-11 Aug |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | T | 0.0 | 0.0 | 0.0 | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | T |
| Maximum in 24 h | 0.0 | T | 0.0 | 0.0 | 0.0 | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | T |
| -Date | | 3+ | | | | 20 | | | | | | 17 | 3x |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 8.8 | 8.7 | 9.2 | 9.5 | 10.3 | 5.8 | 4.9 | 5.1 | 4.1 | 6.6 | 7.0 | 6.4 | 7.2 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | NW | S | NW | W | E | 6 | 5 | 16 | 25 | 31 | 34 | 32 | 6 |
| Speed | 38 | 31 | 44 | 37 | 37 | 55 | 47 | 46 | 41 | 38 | 38 | 29 | 55 |
| -Date | 18 | 18 | 18 | 29 | 29 | 20 | 29 | 7 | 15 | 22 | 24 | 1 | 20-Jun |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 61.0 | 65.3 | 71.1 | 78.4 | 84.6 | 90.1 | 92.7 | 92.5 | 88.4 | 81.6 | 72.4 | 64.7 | 78.6 |
| Daily Minimum | 30 | 39.7 | 42.6 | 50.0 | 58.1 | 64.4 | 70.6 | 72.4 | 72.0 | 67.9 | 57.6 | 49.6 | 42.2 | 57.3 |
| Monthly | 30 | 50.4 | 53.9 | 60.6 | 68.3 | 74.5 | 80.4 | 82.6 | 82.3 | 78.2 | 69.6 | 61.0 | 53.5 | 67.9 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 27 | 84 | 91 | 91 | 95 | 99 | 103 | 104 | 107 | 102 | 96 | 89 | 85 | 107 |
| -Year | | 1975 | 1986 | 1989 | 1987 | 1996 | 1980 | 1980 | 1980 | 1985 | 1991 | 1989 | 1995 | Aug-80 |
| Lowest | 27 | 12 | 20 | 22 | 31 | 44 | 52 | 62 | 60 | 48 | 29 | 19 | 7 | 7 |
| -Year | | 1982 | 1985 | 1980 | 1987 | 1978 | 1970 | 1990 | 1992 | 1975 | 1993 | 1976 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 468 | 322 | 187 | 36 | 0 | 0 | 0 | 0 | 0 | 31 | 181 | 374 | 1599 |
| Cooling | 30 | 16 | 11 | 50 | 135 | 295 | 462 | 546 | 536 | 396 | 174 | 61 | 18 | 2700 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 27 | 86 | 87 | 87 | 89 | 92 | 92 | 93 | 93 | 93 | 91 | 89 | 87 | 90 |
| 6:00 PM | 27 | 67 | 61 | 60 | 61 | 64 | 63 | 62 | 62 | 66 | 68 | 71 | 71 | 65 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 26 | 7.0 | 6.5 | 6.7 | 6.6 | 6.4 | 5.8 | 5.7 | 5.7 | 5.6 | 5.2 | 6.0 | 6.8 | 6.2 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 26 | 44 | 49 | 53 | 56 | 60 | 67 | 69 | 68 | 66 | 63 | 51 | 50 | 58 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 27 | 10.8 | 8.6 | 9.0 | 7.3 | 8.6 | 9.2 | 9.2 | 8.9 | 9.1 | 7.4 | 8.4 | 9.2 | 105.7 |
| Snow or Ice | 27 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.2 |
| Thunderstorms | 27 | 2.2 | 2.0 | 3.7 | 4.1 | 7.3 | 8.2 | 10.5 | 10.3 | 7.5 | 4.0 | 2.8 | 1.8 | 64.4 |
| Heavy Fog | 27 | 4.9 | 3.7 | 3.0 | 2.7 | 1.7 | 0.6 | 0.2 | 0.4 | 1.2 | 2.8 | 3.6 | 4.2 | 29.0 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 27 | 0.0 | * | 0.1 | 0.8 | 5.0 | 19.9 | 26.7 | 25.6 | 15.1 | 3.0 | 0.0 | 0.0 | 96.2 |
| - 32° and below | 27 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.6 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 27 | 7.0 | 4.3 | 1.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.6 | 4.9 | 19.3 |
| - 0° and below | 27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 3.29 | 2.96 | 2.92 | 3.21 | 5.24 | 4.96 | 3.60 | 3.49 | 4.89 | 4.27 | 3.79 | 3.45 | 46.07 |
| Maximum Monthly | 27 | 9.78 | 5.99 | 8.52 | 10.92 | 14.39 | 16.28 | 8.10 | 10.58 | 11.35 | 16.05 | 8.91 | 9.34 | 16.28 |
| -Year | | 1991 | 1992 | 1972 | 1976 | 1970 | 1989 | 1979 | 1996 | 1976 | 1984 | 1982 | 1991 | Jun-89 |
| Minimum Monthly | 27 | 0.36 | 0.38 | 0.12 | 0.43 | 0.79 | 0.26 | 0.47 | 0.31 | 0.80 | 0.05 | 0.41 | 0.64 | 0.05 |
| -Year | | 1971 | 1976 | 1996 | 1983 | 1977 | 1970 | 1993 | 1990 | 1975 | 1978 | 1988 | 1973 | Oct-78 |
| Maximum in 24 h | 27 | 2.73 | 2.22 | 7.47 | 8.16 | 10.36 | 10.35 | 3.99 | 6.83 | 7.98 | 9.31 | 4.19 | 4.14 | 10.36 |
| -Year | | 1995 | 1985 | 1972 | 1976 | 1989 | 1989 | 1973 | 1981 | 1976 | 1984 | 1986 | 1995 | May-89 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | * | 0.4 |
| Maximum Monthly | 27 | 2.0 | 2.8 | T | T | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 1.7 | 2.8 |
| -Year | | 1973 | 1973 | 1992 | 1993 | 1993 | 1990 | | | | | 1979 | 1989 | Feb-73 |
| Maximum in 24 h | 27 | 2.0 | 1.4 | T | T | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 1.7 | 2.0 |
| -Year | | 1973 | 1980 | 1992 | 1993 | 1993 | 1990 | | | | | 1979 | 1989 | Jan-73 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 27 | 8.2 | 8.8 | 9.3 | 9.2 | 8.2 | 7.8 | 7.0 | 6.3 | 6.9 | 7.0 | 8.0 | 8.0 | 7.9 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 44 | 61 | 51 | 56 | 52 | 68 | 52 | 78 | 44 | 58 | 46 | 56 | 78 |
| Direction | 13 | *31* | *27* | *27* | *27* | *27* | *4* | *36* | *9* | *9* | *27* | *36* | *31* | *9* |
| -Year | | 1994 | 1984 | 1990 | 1990 | 1993 | 1990 | 1994 | 1983 | 1990 | 1988 | 1995 | 1990 | Aug-83 |

# Lubbock, Texas

Lubbock is located on a plateau area of Northwestern Texas that is referred to locally as the South Plains Region. The general elevation of. the area is about 3,250'. The Region is a major part of the Llano Estacado (staked plains). The latter, which includes a large portion of Northwest Texas, is bounded on the east and southeast by an erosional escarpment that Is usually referred to as the Cap Rock. The Llano Estacado extends southwestward into the upper Pecos Valley and westward into eastern New Mexico.

The South Plains are predominantly flat, but contain numerous small playas (or clay lined depressions) and small stream valleys. During the rainy months the playas collect runoff water and form small lakes or ponds. The stream valleys drain into the major rivers of West Texas, but throughout most of the year these streams carry only very light flows.

The escarpment, or Cap Rock, is the primary terrain feature that causes a noticeable distortion of the smooth wind flow patterns across the South Plains. The most noticeable influence is on southeasterly winds as they are deflected upward along the face of the escarpment.

The Lubbock area is the heart of the largest cotton-producing section of Texas. Grain sorghum production and cattle feeding make significant contributions to the agroeconomy of the area. Irrigation from underground sources is often used as a supplement to natural rainfall to improve crop yields. The soils of the region are sandy clay loams which consist of limy clays, silts, and sands of a reddish hue.

The area is semi-arid, transitional between the desert conditions on the west and the humid climates to the east and southeast. The greatest monthly rainfall totals occur from May through September when warm moist tropical air may be carried into the area from the Gulf of Mexico. This air mass often brings moderate to heavy afternoon and evening thunderstorms, accompanied by hail. Precipitation across the area is characterized

by is variability. The monthly precipitation extremes range from trace amounts in several isolated months to 14 inches.

Snow may occur from late October until April. Each snowfall is generally light and seldom remains on the ground for more than two or three days at any one period. High winds are associated primarily with intense thunderstorms and at times may cause significant damage to structures. Winds in excess of 25 mph occasionally occur for periods of 12 hours or longer. These prolonged winds are generally associated with late winter and springtime low-pressure centers. Spring winds often bring widespread dust causing discomfort to residents for periods of several hours.

Overall, the climate of the region is rated as pleasant. Most periods of disagreeable weather are of short duration. They generally occur form the winter months into the early summer months. The summer heat is not considered oppressive. One moderating factor is a variable, but usually gentle, wind. Intrusions of dry air from the west often reduce any discomfort form the summer heat and lower temperatures into the 60s.

The average first occurrence of temperatures below 32°F in the fall is the first of November and the average last occurrence in the spring is in mid April.

## Lubbock

## 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 55.5 | 63.1 | 64.5 | 77.4 | 91.5 | 91.4 | 91.1 | 87.1 | 81.1 | 75.3 | 63.9 | 60.6 | 75.2 |
| Daily Minimum | 23.4 | 30.4 | 31.5 | 44.8 | 62.0 | 65.9 | 68.7 | 66.4 | 56.4 | 45.9 | 34.9 | 27.3 | 46.5 |
| Monthly | 39.4 | 46.7 | 48.0 | 61.1 | 76.8 | 78.7 | 79.9 | 76.8 | 68.8 | 60.6 | 49.4 | 44.0 | 60.9 |
| Monthly Dew Point | 14.4 | 15.8 | 17.8 | 23.6 | 46.1 | 57.8 | 61.1 | | | 40.8 | 30.7 | 18.2 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 73 | 87 | 83 | 97 | 105 | 106 | 100 | 98 | 92 | 91 | 88 | 78 | 106 |
| -Date | 28 | 22 | 13 | 27 | 22 | 20 | 8 | 3 | 23 | 12 | 20 | 9 | 20-Jun |
| Lowest | 10 | 7 | 11 | 31 | 45 | 56 | 64 | 60 | 37 | 31 | 16 | 5 | 5 |
| -Date | 31 | 3 | 7 | 6 | 2 | 8 | 27 | 13 | 28 | 23 | 25 | 19 | 19-Dec |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 785 | 525 | 518 | 162 | 0 | 0 | 0 | 0 | 33 | 188 | 463 | 645 | 3319 |
| Cooling | 0 | 2 | 2 | 50 | 371 | 415 | 469 | 372 | 152 | 58 | 1 | 0 | 1892 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 58 | 50 | 52 | 48 | 65 | 76 | 78 | 80 | 86 | 76 | 74 | 59 | 67 |
| 6:00 PM | 29 | 23 | 22 | 16 | 25 | 36 | 42 | 49 | 46 | 41 | 42 | 27 | 33 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 80 | 70 | 81 | 95 | | 96 | 70 | 69 | | 76 | 90 | 94 | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 4 | 2 | 2 | 2 | 4 | 11 | 10 | 15 | 6 | 3 | 4 | 1 | 64 |
| Snow or Ice | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Thunderstorms | 0 | 0 | 0 | 0 | 5 | 15 | 9 | 10 | 4 | 1 | 0 | 0 | 44 |
| Heavy Fog | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 1 | 14 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 0 | 0 | 3 | 18 | 18 | 19 | 13 | 2 | 2 | 0 | 0 | 75 |
| - 32° and below | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 28 | 16 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 21 | 99 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.19 | 0.06 | 0.09 | 0.11 | 2.76 | 2.80 | 2.24 | 4.52 | 0.63 | 0.33 | 0.37 | 0.02 | 14.12 |
| Maximum in 24 h | 0.15 | 0.05 | 0.08 | 0.08 | 0.96 | 1.17 | 0.69 | 1.27 | 0.27 | 0.26 | 0.29 | 0.02 | 1.27 |
| -Date | 1 | 3 | 27 | 5 | 26 | 26 | 27 | 28 | 14 | 21 | 28-29 | 17 | 14-Sep |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 2.0 | 1.4 | 0.1 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 0.2 | 2.0 |
| Maximum in 24 h | 2.0 | 1.4 | 0.1 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 0.2 | 2.0 |
| -Date | 1 | 3 | 6 | 5 | 26+ | | | | | 21 | 28 | 17 | 1-Jan |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 13.6 | 12.9 | 14.1 | 15.6 | 16.1 | 11.5 | 9.4 | 9.1 | 9.2 | 11.5 | 12.6 | 13.0 | 12.4 |
| PEAK GUST | | | | | | | | | | | | | |
| Speed | 59 | 54 | 52 | 51 | 74 | 53 | 47 | 32 | 44 | 49 | 47 | 46 | 74 |
| Direction | 24 | 20 | 26 | 21 | 24 | 32 | 36 | 36 | 33 | 24 | 22 | 26 | 24 |
| -Date | 17 | 26 | 24 | 13 | 14 | 12 | 22 | 7 | 8 | 29 | 16 | 11 | 14-May |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 52.9 | 57.6 | 66.0 | 75.4 | 83.1 | 90.0 | 91.9 | 89.6 | 82.9 | 74.7 | 63.2 | 54.1 | 73.5 |
| Daily Minimum | 30 | 24.6 | 28.6 | 36.4 | 46.7 | 55.8 | 64.3 | 68.0 | 66.2 | 59.4 | 48.1 | 36.5 | 27.2 | 46.8 |
| Monthly | 30 | 38.8 | 43.1 | 51.2 | 61.1 | 69.4 | 77.2 | 80.0 | 77.9 | 71.1 | 61.4 | 49.8 | 40.6 | 60.1 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 50 | 83 | 87 | 95 | 100 | 105 | 114 | 108 | 106 | 103 | 98 | 88 | 81 | 114 |
| -Year | | 1972 | 1996 | 1989 | 1989 | 1996 | 1994 | 1983 | 1966 | 1948 | 1979 | 1996 | 1958 | Jun-94 |
| Lowest | 50 | -16 | -8 | 2 | 22 | 30 | 44 | 51 | 52 | 33 | 18 | -1 | -2 | -16 |
| -Year | | 1963 | 1960 | 1948 | 1948 | 1967 | 1947 | 1952 | 1956 | 1983 | 1993 | 1957 | 1989 | Jan-63 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 812 | 613 | 437 | 161 | 25 | 0 | 0 | 0 | 17 | 154 | 456 | 756 | 3431 |
| Cooling | 30 | 0 | 0 | 10 | 44 | 162 | 366 | 465 | 400 | 200 | 42 | 0 | 0 | 1689 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 49 | 73 | 73 | 68 | 69 | 76 | 77 | 75 | 78 | 80 | 78 | 74 | 72 | 74 |
| 6:00 PM | 49 | 47 | 41 | 33 | 31 | 37 | 37 | 39 | 42 | 45 | 44 | 46 | 48 | 41 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 47 | 5.3 | 5.2 | 5.0 | 4.8 | 5.0 | 4.2 | 4.4 | 4.3 | 4.4 | 3.8 | 4.4 | 4.9 | 4.6 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 23 | 65 | 66 | 73 | 74 | 71 | 76 | 77 | 76 | 71 | 75 | 68 | 65 | 71 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 50 | 3.9 | 4.2 | 4.1 | 4.5 | 7.5 | 7.0 | 6.8 | 6.7 | 6.0 | 4.8 | 3.5 | 4.2 | 63.2 |
| Snow or Ice | 50 | 0.8 | 0.9 | 0.5 | 0.* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | 0.3 | 0.6 | 3.2 |
| Thunderstorms | 50 | 0.2 | 0.5 | 1.9 | 3.8 | 8.7 | 9.3 | 7.7 | 7.3 | 4.4 | 2.6 | 0.8 | 0.3 | 47.4 |
| Heavy Fog | 50 | 3.1 | 2.9 | 1.6 | 1.0 | 1.1 | 0.4 | 0.1 | 0.4 | 1.2 | 1.7 | 2.3 | 2.0 | 18.0 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 49 | 0.0 | 0.0 | 0.1 | 1.7 | 8.2 | 18.3 | 22.2 | 19.7 | 8.6 | 1.0 | 0.0 | 0.0 | 79.8 |
| - 32° and below | 49 | 3.1 | 1.3 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | 0.2 | 1.6 | 6.6 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 49 | 25.5 | 18.9 | 10.5 | 1.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 12.0 | 23.4 | 93.1 |
| - 0° and below | 49 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | 0.1 | 0.5 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.39 | 0.68 | 0.89 | 0.97 | 2.35 | 2.75 | 2.37 | 2.51 | 2.60 | 1.86 | 0.75 | 0.53 | 18.65 |
| Maximum Monthly | 50 | 4.05 | 2.51 | 3.23 | 3.48 | 7.80 | 7.95 | 7.20 | 8.85 | 8.17 | 10.80 | 2.67 | 2.24 | 10.80 |
| -Year | | 1949 | 1961 | 1958 | 1957 | 1949 | 1967 | 1976 | 1966 | 1995 | 1983 | 1968 | 1991 | Oct-83 |
| Minimum Monthly | 50 | 0.00 | T | T | 0.04 | 0.10 | T | T | 0.05 | T | 0.00 | 0.00 | T | 0.00 |
| -Year | | 1967 | 1955 | 1972 | 1989 | 1962 | 1990 | 1970 | 1960 | 1954 | 1952 | 1960 | 1973 | Jan-67 |
| Maximum in 24 h | 50 | 1.56 | 2.15 | 1.80 | 2.18 | 5.14 | 5.70 | 3.25 | 3.78 | 4.71 | 5.82 | 1.57 | 1.12 | 5.82 |
| -Year | | 1983 | 1961 | 1973 | 1982 | 1949 | 1967 | 1985 | 1966 | 1995 | 1983 | 1968 | 1959 | Oct-83 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 2.4 | 2.8 | 1.4 | 0.2 | * | * | * | 0.0 | 0.0 | 0.2 | 1.1 | 1.8 | 9.9 |
| Maximum Monthly | 48 | 25.3 | 16.8 | 14.3 | 5.3 | 0.7 | 0.6 | T | 0.0 | 0.0 | 7.5 | 21.4 | 9.9 | 25.3 |
| -Year | | 1983 | 1956 | 1958 | 1983 | 1991 | 1995 | 1990 | | | 1976 | 1980 | 1960 | Jan-83 |
| Maximum in 24 h | 48 | 16.3 | 12.1 | 10.0 | 4.5 | 0.7 | 0.6 | T | 0.0 | 0.0 | 4.7 | 10.8 | 6.3 | 16.3 |
| -Year | | 1983 | 1961 | 1969 | 1983 | 1991 | 1995 | 1990 | | | 1976 | 1980 | 1960 | Jan-83 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 47 | 12.0 | 13.2 | 14.7 | 14.8 | 14.2 | 13.6 | 11.4 | 10.1 | 10.6 | 11.2 | 11.7 | 11.8 | 12.4 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 59 | 64 | 77 | 71 | 74 | 85 | 72 | 59 | 58 | 52 | 63 | 64 | 85 |
| Direction | 13 | 24 | *36* | *27* | *18* | 24 | *4* | *36* | *31* | *31* | 36 | *27* | *31* | *4* |
| -Year | | 1996 | 1984 | 1993 | 1985 | 1996 | 1987 | 1990 | 1989 | 1988 | 1995 | 1994 | 1993 | Jun-87 |

# Midland - Odessa, Texas

The Midland - Odessa region is on the southern extension of the South Plains of Texas. The terrain is level with only slight occasional undulations. The climate is typical of a semi-arid region. The vegetation of the area consists mostly of native grasses and a few trees mostly of the mesquite variety.

Most of the annual precipitation in the area comes as a result of very violent spring and early summer thunderstorms. These are usually accompanied by excessive rainfall over limited areas and sometimes hail. Due to the flat nature of the countryside local flooding occurs but is of short duration. Tornadoes are occasionally sighted.

During the late winter and early spring months blowing dust occurs frequently. The flat plains of the area with only grass as vegetation offer little resistance to the strong winds. The sky is occasionally obscured by dust but in most storms visibilities range from 1 to 3 miles.

Daytime temperatures are quite hot in the summer but there is a large diurnal range of temperature and most nights are comfortable. The temperature drops below 32°F in the fall about mid-November and the last temperature below 32°F in spring comes early in April.

Winters are characterized by frequent cold periods followed by rapid warming. Cold frontal passages are followed by chilly weather for two or three days. Cloudiness is at a minimum. Summers are hot and dry with numerous small convective showers.

The prevailing wind direction in this area is from the southeast. This together with the upslope of the terrain from the same direction causes occasional low cloudiness and drizzle during winter and spring months. Snow is infrequent. Maximum temperatures during the summer months frequently are from 2 to 6 degrees cooler than those at places 100 miles southeast due to the cooling effect of the upslope winds.

Very low humidities are conducive to personal comfort because even though summer afternoon temperatures are frequently above 90°F the low humidity with resultant rapid evaporation has a cooling effect. The climate of the area is generally quite pleasant with the most disagreeable weather concentrated in the late inter and spring months.

## Midland-Odessa

## 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 60.9 | 67.1 | 67.9 | 78.6 | 95.6 | 96.5 | 96.4 | 90.2 | 83.5 | 79.0 | 66.8 | 63.2 | 78.8 |
| Daily Minimum | 28.3 | 35.4 | 34.5 | 48.1 | 66.6 | 69.3 | 72.6 | 69.7 | 61.0 | 49.1 | 39.0 | 31.5 | 50.4 |
| Monthly | 44.6 | 51.3 | 51.2 | 63.4 | 81.1 | 82.9 | 84.5 | 80.0 | 72.3 | 64.1 | 52.9 | 47.4 | 64.6 |
| Monthly Dew Point | 17.4 | 20.3 | 20.2 | | 53.3 | 58.9 | 59.8 | 62.0 | 58.7 | 46.2 | 37.4 | 25.4 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 79 | 88 | 86 | 101 | 104 | 107 | 102 | 104 | 95 | 91 | 90 | 77 | 107 |
| -Date | 17 | 21 | 12 | 27 | 22 | 20 | 8 | 3 | 23 | 11 | 20 | 10 | 20-Jun |
| Lowest | 16 | 13 | 12 | 32 | 52 | 59 | 66 | 66 | 37 | 30 | 25 | 10 | 10 |
| -Date | 31 | 3 | 7 | 5 | 1 | 8 | 4 | 31 | 28 | 23 | 25 | 19 | 19-Dec |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 626 | 410 | 423 | 139 | 0 | 0 | 0 | 0 | 25 | 101 | 358 | 538 | 2620 |
| Cooling | 0 | 18 | 6 | 98 | 510 | 546 | 611 | 471 | 252 | 77 | 4 | 0 | 2593 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 57 | 52 | 57 | | 66 | 72 | 64 | 77 | 86 | 80 | 81 | 69 | |
| 6:00 PM | 28 | 22 | 19 | | | 32 | 33 | 46 | 46 | 43 | 48 | 32 | |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | 3.4 | 5.5 | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | 85 | 83 | 82 | | 98 | | 80 | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 1 | 0 | 2 | 2 | 2 | 8 | 3 | 11 | 5 | 2 | 5 | 0 | 41 |
| Snow or Ice | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Thunderstorms | 0 | 0 | 0 | 2 | 5 | 12 | 5 | 7 | 4 | 0 | 2 | 0 | 37 |
| Heavy Fog | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 7 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 0 | 0 | 6 | 26 | 28 | 29 | 20 | 6 | 1 | 1 | 0 | 117 |
| - 32° and below | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 24 | 11 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 16 | 73 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.08 | T | 0.05 | 1.22 | 0.11 | 1.71 | 0.13 | 2.94 | 0.97 | 0.20 | 1.43 | T | 8.84 |
| Maximum in 24 h | 0.08 | T | 0.04 | 1.22 | 0.10 | 0.97 | 0.08 | 0.62 | 0.58 | 0.10 | 1.07 | T | 1.22 |
| -Date | 1 | 3+ | 26-27 | 4-5 | 30 | 25-26 | 14 | 28-29 | 14 | 21 | 28-29 | 17+ | 4-5 Apr |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.6 | 0.2 | 0.2 | 2.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.2 | T | |
| Maximum in 24 h | 0.6 | 0.2 | 0.2 | 2.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.2 | T | |
| -Date | 1 | 3 | 6 | 5 | | | | | | | 24 | 17+ | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 13.1 | 12.9 | 12.1 | 13.1 | 14.4 | 11.2 | 9.9 | 9.6 | 8.9 | 10.4 | 10.5 | 10.0 | 11.3 |
| PEAK GUST | | | | | | | | | | | | | |
| Speed | 59 | 53 | 53 | 45 | 64 | 51 | 39 | 63 | 40 | 38 | 39 | 43 | 64 |
| Direction | SW | S | 25 | 2 | 22 | 3 | 5 | 17 | 25 | 34 | 26 | 26 | 22 |
| -Date | 17 | 26+ | 17 | 28 | 9 | 3 | 24 | 4 | 2 | 21 | 30 | 10 | 9-May |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 56.5 | 61.6 | 71.2 | 79.8 | 87.4 | 93.4 | 95.4 | 94.1 | 85.4 | 77.3 | 66.2 | 58.4 | 77.2 |
| Daily Minimum | 30 | 28.5 | 32.6 | 40.2 | 49.4 | 58.1 | 65.7 | 68.5 | 67.5 | 61.1 | 50.6 | 38.9 | 30.8 | 49.3 |
| Monthly | 30 | 42.5 | 47.1 | 55.7 | 64.6 | 72.8 | 79.6 | 82.0 | 80.8 | 73.3 | 64.0 | 52.6 | 44.6 | 63.3 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 49 | 84 | 90 | 95 | 101 | 108 | 116 | 112 | 107 | 107 | 100 | 90 | 85 | 116 |
| -Year | | 1974 | 1986 | 1989 | 1996 | 1989 | 1994 | 1989 | 1964 | 1953 | 1979 | 1996 | 1954 | Jun-94 |
| Lowest | 49 | -8 | -11 | 9 | 20 | 34 | 47 | 53 | 54 | 36 | 24 | 13 | -1 | -11 |
| -Year | | 1962 | 1985 | 1980 | 1973 | 1970 | 1983 | 1978 | 1989 | 1989 | 1993 | 1993 | 1989 | Feb-85 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 698 | 501 | 309 | 108 | 10 | 0 | 0 | 0 | 10 | 106 | 377 | 632 | 2751 |
| Cooling | 30 | 0 | 0 | 21 | 96 | 252 | 438 | 527 | 490 | 259 | 75 | 5 | 0 | 2163 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 33 | 73 | 73 | 66 | 67 | 76 | 77 | 73 | 76 | 81 | 80 | 75 | 73 | 74 |
| 6:00 PM | 33 | 43 | 36 | 28 | 27 | 31 | 33 | 34 | 37 | 44 | 43 | 44 | 44 | 37 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 47 | 5.2 | 5.1 | 4.8 | 4.7 | 4.7 | 4.0 | 4.5 | 4.4 | 4.4 | 3.9 | 4.3 | 4.8 | 4.6 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 15 | 65 | 67 | 75 | 78 | 78 | 79 | 78 | 74 | 76 | 72 | 72 | 64 | 73 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 49 | 3.9 | 3.9 | 2.5 | 3.4 | 6.0 | 4.9 | 5.2 | 5.6 | 5.7 | 4.5 | 3.1 | 3.4 | 52.1 |
| Snow or Ice | 49 | 0.7 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 | 1.8 |
| Thunderstorms | 48 | 0.3 | 0.5 | 1.3 | 3.2 | 6.8 | 5.8 | 5.9 | 6.2 | 3.8 | 2.4 | 0.7 | 0.4 | 37.3 |
| Heavy Fog | 48 | 3.5 | 2.9 | 0.8 | 0.6 | 0.5 | 0.1 | * | 0.1 | 0.6 | 1.3 | 2.5 | 3.1 | 16.0 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 33 | 0.0 | * | 0.4 | 3.4 | 11.3 | 21.0 | 25.7 | 22.5 | 10.4 | 2.2 | 0.0 | 0.0 | 96.9 |
| - 32° and below | 33 | 1.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.8 | 2.8 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 33 | 20.0 | 13.5 | 5.5 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 6.9 | 17.2 | 64.1 |
| - 0° and below | 33 | * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.1 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | | 0.40 | 0.62 | 0.58 | 0.83 | 1.98 | 1.55 | 1.70 | 1.69 | 2.62 | 1.74 | 0.69 | 0.56 | 14.96 |
| Maximum Monthly | 49 | 3.66 | 2.55 | 2.86 | 2.85 | 7.63 | 3.93 | 8.50 | 4.43 | 9.70 | 7.45 | 2.32 | 3.30 | 9.70 |
| -Year | | 1949 | 1992 | 1970 | 1949 | 1992 | 1949 | 1991 | 1974 | 1980 | 1986 | 1968 | 1986 | Sep-80 |
| Minimum Monthly | 49 | 0.00 | T | T | 0.00 | 0.08 | 0.01 | T | 0.17 | 0.08 | 0.00 | 0.00 | T | 0.00 |
| -Year | | 1967 | 1996 | 1994 | 1964 | 1968 | 1993 | 1961 | 1965 | 1986 | 1985 | 1975 | 1996 | Jul-61 |
| Maximum in 24 h | 43 | 1.15 | 1.22 | 2.20 | 1.62 | 4.75 | 3.07 | 5.99 | 2.41 | 4.37 | 3.59 | 2.16 | 1.58 | 5.99 |
| -Year | | 1958 | 1965 | 1970 | 1979 | 1968 | 1993 | 1961 | 1965 | 1986 | 1985 | 1975 | 1979 | Jul-61 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | | | | | | | | | | | | | | |
| Maximum Monthly | 49 | 9.0 | 3.9 | 5.9 | 2.0 | T | T | T | T | 0.0 | 0.6 | 7.2 | 8.5 | 9.00 |
| -Year | | 1985 | 1973 | 1970 | 1996 | 1995 | 1993 | 1995 | 1992 | | 1993 | 1980 | 1986 | Jan-85 |
| Maximum in 24 h | 43 | 6.8 | 3.9 | 5.0 | 2.0 | T | T | T | T | 0.0 | 0.6 | 5.7 | 4.3 | 6.80 |
| -Year | | 1974 | 1985 | 1970 | 1996 | 1995 | 1993 | 1995 | 1992 | | 1993 | 1980 | 1986 | Jan-74 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 43 | 10.2 | 11.2 | 12.6 | 12.8 | 12.4 | 12.3 | 10.8 | 10.0 | 10.1 | 10.1 | 10.4 | 10.1 | 11.1 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 59 | 55 | 74 | 67 | 69 | 71 | 82 | 63 | 82 | 69 | 59 | 47 | 82 |
| Direction | 13 | 23 | *22* | *27* | *27* | *31* | *36* | *22* | *22* | *22* | *36* | *27* | *36* | *22* |
| -Year | | 1996 | 1993 | 1984 | 1984 | 1993 | 1994 | 1987 | 1987 | 1985 | 1986 | 1988 | 1990 | Jul-87 |

# Port Arthur, Texas

Port Arthur is located on the flat Coastal Plain in the extreme southeast corner of Texas. The climate is a mixture of tropical and temperate zone conditions.

Sea breezes prevent extremely high temperatures in the summer, except on rare occasions. The area lies far enough south so that cold air masses modify in severity but still provide freezing temperatures up to six times a year. High humidity is the result of fairly evenly distributed high normal rainfall and prevailing southerly winds from the Gulf of Mexico.

Cloudy, rainy weather is most common in the winter. Only slightly more than half the winters record even a trace of sleet or snow. Heavy rainfall in summer occurs in short duration thunderstorms and in infrequent tropical storms.

Slow moving systems in the spring and fall often result in three to five days of stormy weather and heavy rain. The lightest precipitation usually occurs in March and October. Funnel clouds and waterspouts are common near the coast. The area enjoys approximately 60% of possible sunshine.

Fog, most frequent in midwinter and early spring, is rare in summer. It usually dissipates before noon, but occasionally under stagnant conditions lasts a day or two. Along the immediate coast, fog usually does not form until daybreak, but inland it may form before midnight.

The average wind movement is near 11 mph. Except for severe storms and tropical disturbances, wind seldom exceeds 45 mph. It exceeds 30 mph on only about 40 days in any one year.

The climate is favorable for outdoor activities throughout the year. The abundant rainfall, moderate temperatures, and the short period of temperatures below freezing are particularly favorable for farming and livestock production. Heaviest rain usually falls in the summer when needed for rice. The comparatively dry harvest season simplifies the

gathering of rice and feed crops. Cattle on the open range of the coastal marshes need little supplemental feeding or protection. Improved pastures are easily provided because of the moderate temperatures and abundant rainfall.

## Port Arthur

**1996**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 63.1 | 65.5 | 67.6 | 76.6 | 85.2 | 89.2 | 92.1 | 89.5 | 86.1 | 79.6 | 71.1 | 66.2 | 77.7 |
| Daily Minimum | 41.0 | 46.1 | 46.0 | 56.1 | 69.8 | 71.1 | 74.3 | 72.6 | 69.4 | 61.2 | 53.7 | 48.6 | 59.2 |
| Monthly | 52.0 | 55.8 | 56.8 | 66.4 | 77.5 | 80.2 | 83.2 | 81.1 | 77.8 | 70.4 | 62.4 | 57.4 | 68.4 |
| Monthly Dew Point | 44.8 | 47.7 | 46.6 | 57.5 | 72.1 | 74.1 | 76.7 | | 70.2 | 62.8 | 56.3 | | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 76 | 82 | 82 | 86 | 91 | 93 | 96 | 95 | 91 | 86 | 84 | 77 | 96 |
| -Date | 1 | 19 | 30 | 13 | 29 | 27 | 23 | 2 | 16 | 3 | 1 | 28 | 23-Jul |
| Lowest | 21 | 21 | 28 | 38 | 49 | 59 | 70 | 67 | 53 | 41 | 37 | 22 | 21 |
| -Date | 8 | 4 | 9 | 7 | 1 | 9 | 26 | 12 | 29 | 23 | 27 | 19 | 2x |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 401 | 302 | 274 | 72 | 2 | 0 | 0 | 0 | 0 | 24 | 141 | 265 | 1481 |
| Cooling | 3 | 41 | 29 | 122 | 398 | 459 | 570 | 507 | 387 | 199 | 69 | 36 | 2820 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 88 | 86 | 88 | 92 | 96 | 96 | 97 | 98 | 94 | 92 | 92 | 90 | 92 |
| 6:00 PM | 76 | 77 | 64 | 71 | 81 | 78 | 78 | 84 | 76 | 78 | 81 | 79 | 77 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 9 | 6 | 7 | 9 | 2 | 12 | 13 | 15 | 16 | 5 | 6 | 11 | 111 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 3 | 3 | 0 | 4 | 2 | 12 | 21 | 17 | 11 | 1 | 0 | 5 | 79 |
| Heavy Fog | 1 | 13 | 10 | 4 | 3 | 2 | 2 | 1 | 1 | 4 | 4 | 9 | 54 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 0 | 0 | 0 | 2 | 16 | 27 | 19 | 6 | 0 | 0 | 0 | 70 |
| - 32° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 8 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 20 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 2.45 | 1.28 | 0.45 | 2.08 | 1.04 | 10.25 | 2.22 | 6.34 | 10.80 | 4.43 | 4.82 | 3.26 | 49.42 |
| Maximum in 24 h | 0.90 | 0.62 | 0.23 | 0.81 | 0.88 | 2.65 | 0.63 | 1.69 | 5.86 | 2.47 | 2.40 | 2.03 | 5.86 |
| -Date | 5-6 | 28-29 | 6 | 29 | 11 | 17 | 31 | 21-22 | 27-28 | 24-25 | 16 | 15-16 | 27-28 Sep |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | | | | | | | | | | | | |
| Maximum in 24 h | 0.0 | | | | | | | | | | | | |
| -Date | | | | | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 10.9 | 10.9 | 10.3 | 11.3 | 10.3 | 6.6 | 5.3 | 6.0 | 6.0 | 9.1 | 9.9 | 9.0 | 8.8 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 18 | 3 | 33 | 18 | 10 | 9 | 34 | 6 | 9 | 2 | 27 | 17 | 33, 9 |
| Speed | 41 | 33 | 45 | 36 | 40 | 37 | 43 | 33 | 45 | 32 | 40 | 32 | 45 |
| -Date | 17 | 28 | 18 | 22 | 29 | 17 | 23 | 7 | 6 | 18 | 24 | 21 | 2x |

## Port Arthur

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 60.3 | 64.3 | 71.5 | 78.3 | 84.1 | 89.4 | 91.9 | 91.7 | 87.3 | 80.2 | 71.3 | 64.2 | 77.9 |
| Daily Minimum | 30 | 41.5 | 44.4 | 51.3 | 59.5 | 66.3 | 72.0 | 73.7 | 73.3 | 69.7 | 59.2 | 51.2 | 44.3 | 58.9 |
| Monthly | 30 | 50.9 | 54.4 | 61.4 | 68.9 | 75.2 | 80.7 | 82.8 | 82.6 | 78.6 | 69.7 | 61.2 | 54.3 | 68.4 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 43 | 81 | 85 | 87 | 94 | 97 | 100 | 103 | 107 | 100 | 95 | 88 | 84 | 107 |
| -Year | | 1989 | 1986 | 1974 | 1987 | 1977 | 1954 | 1980 | 1962 | 1980 | 1977 | 1989 | 1978 | Aug-62 |
| Lowest | 43 | 14 | 20 | 23 | 32 | 46 | 56 | 61 | 60 | 45 | 30 | 22 | 12 | 12 |
| -Year | | 1962 | 1981 | 1989 | 1987 | 1954 | 1984 | 1990 | 1989 | 1967 | 1993 | 1976 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 450 | 307 | 155 | 32 | 0 | 0 | 0 | 0 | 0 | 26 | 177 | 352 | 1499 |
| Cooling | 30 | 13 | 10 | 43 | 149 | 316 | 471 | 552 | 546 | 408 | 172 | 63 | 21 | 2764 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 36 | 88 | 87 | 88 | 90 | 92 | 93 | 94 | 94 | 92 | 91 | 89 | 89 | 91 |
| 6:00 PM | 36 | 75 | 70 | 68 | 70 | 70 | 70 | 71 | 72 | 73 | 73 | 76 | 77 | 72 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 43 | 7.0 | 6.5 | 6.6 | 6.6 | 6.1 | 5.5 | 5.8 | 5.7 | 5.5 | 4.9 | 5.8 | 6.6 | 6.1 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 28 | 42 | 52 | 52 | 52 | 64 | 69 | 65 | 63 | 62 | 67 | 57 | 47 | 58 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 43 | 9.9 | 8.7 | 7.8 | 6.7 | 7.6 | 8.5 | 11.2 | 11.9 | 9.8 | 6.3 | 7.8 | 9.3 | 105.5 |
| Snow or Ice | 43 | * | * | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Thunderstorms | 43 | 2.7 | 2.5 | 3.4 | 4.0 | 6.3 | 8.3 | 13.8 | 12.5 | 7.5 | 3.2 | 2.8 | 2.2 | 69.2 |
| Heavy Fog | 43 | 7.0 | 5.4 | 5.8 | 3.0 | 1.4 | 0.2 | 0.2 | 0.2 | 0.7 | 2.9 | 4.4 | 6.1 | 37.3 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 36 | 0.0 | 0.0 | 0.0 | 0.2 | 2.5 | 17.2 | 24.5 | 23.7 | 13.0 | 1.8 | 0.0 | 0.0 | 82.9 |
| - 32° and below | 36 | 0.1 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 36 | 5.9 | 3.3 | 0.9 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.9 | 3.9 | 15.0 |
| - 0° and below | 36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | | 4.77 | 3.38 | 3.24 | 3.51 | 5.71 | 5.59 | 5.38 | 5.34 | 6.31 | 4.29 | 4.85 | 4.81 | 57.18 |
| Maximum Monthly | 43 | 14.87 | 11.76 | 9.35 | 15.30 | 13.18 | 18.90 | 18.71 | 17.26 | 21.96 | 15.09 | 10.84 | 17.98 | 21.96 |
| -Year | | 1991 | 1959 | 1979 | 1973 | 1991 | 1989 | 1959 | 1966 | 1980 | 1970 | 1977 | 1982 | Sep-80 |
| Minimum Monthly | 43 | 0.60 | 0.21 | 0.06 | 0.26 | 0.10 | 0.76 | 0.63 | 0.98 | 0.50 | 0.00 | 0.15 | 1.32 | 0.00 |
| -Year | | 1971 | 1989 | 1955 | 1987 | 1978 | 1980 | 1956 | 1968 | 1953 | 1963 | 1967 | 1954 | Oct-63 |
| Maximum in 24 h | 43 | 4.92 | 5.05 | 6.04 | 10.09 | 9.89 | 10.20 | 10.56 | 8.45 | 17.16 | 8.06 | 7.26 | 9.98 | 17.16 |
| -Year | | 1961 | 1965 | 1979 | 1973 | 1989 | 1961 | 1979 | 1966 | 1980 | 1970 | 1961 | 1982 | Sep-80 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | | | | | | | | | | | | | | |
| Maximum Monthly | 43 | 3.0 | 4.4 | 1.4 | T | T | 0.0 | T | 0.0 | 0.0 | 0.0 | T | 0.7 | 4.4 |
| -Year | | 1973 | 1960 | 1968 | 1995 | 1994 | | 1990 | | | | 1976 | 1989 | Feb-60 |
| Maximum in 24 h | 43 | 3.0 | 4.4 | 1.4 | T | T | 0.0 | T | 0.0 | 0.0 | 0.0 | T | 0.7 | 4.4 |
| -Year | | 1973 | 1960 | 1968 | 1995 | 1994 | | 1990 | | | | 1976 | 1989 | Feb-60 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 43 | 10.7 | 11.2 | 11.6 | 11.6 | 10.1 | 8.8 | 7.5 | 7.2 | 8.4 | 8.8 | 10.1 | 10.3 | 9.7 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 56 | 54 | 53 | 59 | 62 | 76 | 69 | 55 | 58 | 47 | 54 | 51 | 76 |
| Direction | 13 | *22* | *22* | *31* | *27* | *18* | *13* | *22* | *36* | *22* | *31* | *31* | *9* | *13* |
| -Year | | 1994 | 1984 | 1991 | 1990 | 1988 | 1986 | 1991 | 1988 | 1994 | 1985 | 1991 | 1994 | Jun-86 |

# San Angelo, Texas

San Angelo is located near the center of Texas at the northern edge of the Edwards Plateau. Ground elevation ranges from about 1,700 to 2,700 feet above sea level. Topography varies from level and slightly rolling to broken. The climate is generally classified as semiarid or steppe, but has some humid temperate characteristics. Warm, dry weather predominates, although changes may be rapid and frequent with the passage of cold fronts or northers.

High temperatures of summer are associated with fair skies, south to southwest winds and dry air. Low humidities, however, are conducive to personal comfort because of rapid evaporation. Rapid temperature drops occur after sunset, and most nights are pleasant with lows in the upper 60s and lower 70s. Rapid temperature drops occur in the winter as cold polar air invades the region. Temperature drops of 20°F to 30°F in a short time are not uncommon. Cold polar outbreaks have produced record low temperatures of zero or below throughout the area.

The rainfall is typical of the Great Plains. Much of the rainfall occurs from thunderstorm activity, and wide variations in annual precipitation occur from year to year. Heavy rainfall occurs in April, May, June, September, and October. Also, in the late summer months, heavy precipitation may occur when tropical disturbances move inland over south Texas and pass near the San Angelo area.

The prevailing wind direction is from the south, and winds are frequently high and persistent for several days. Dusty conditions are infrequent and occur in early spring when west or northwest winds predominate. The frequency and intensity of the dust storms are dependent on soil conditions in the Texas Panhandle and in New Mexico.

Agriculture in the region consists of cattle, sheep, and goat raising. Cotton, from dryland and irrigated fields, maize, corn, melons, truck farming, and pecan production are also important crops.

## San Angelo

## 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 62.0 | 68.1 | 69.4 | 80.5 | 93.8 | 95.2 | 97.9 | 92.2 | 83.9 | 78.7 | 66.1 | 63.9 | 79.3 |
| Daily Minimum | 28.9 | 37.2 | 37.8 | 48.9 | 67.5 | 69.4 | 72.9 | 70.5 | 62.0 | 51.5 | 42.5 | 33.8 | 51.9 |
| Monthly | 45.5 | 52.6 | 53.6 | 64.7 | 80.7 | 82.3 | 85.4 | 81.4 | 73.0 | 65.1 | 54.3 | 48.9 | 65.6 |
| Monthly Dew Point | 22.4 | 28.4 | 28.6 | 38.4 | 60.1 | 62.8 | 62.5 | 64.9 | 62.6 | 51.5 | 44.4 | 33.2 | 46.7 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 80 | 97 | 86 | 99 | 102 | 106 | 103 | 104 | 90 | 88 | 87 | 77 | 106 |
| -Date | 14 | 22 | 13 | 25 | 22 | 20 | 7 | 3 | 20 | 20 | 20 | 11 | 20-Jun |
| Lowest | 12 | 7 | 15 | 32 | 56 | 58 | 68 | 65 | 40 | 33 | 19 | 11 | 7 |
| -Date | 7 | 4 | 9 | 5 | 2 | 9 | 5 | 13 | 28 | 23 | 25 | 19 | 4-Feb |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 599 | 377 | 363 | 112 | 0 | 0 | 0 | 0 | 29 | 74 | 326 | 491 | 2371 |
| Cooling | 0 | 27 | 16 | 110 | 495 | 528 | 641 | 515 | 275 | 82 | 14 | 0 | 2703 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 67 | 58 | 67 | 66 | 77 | 80 | 75 | 83 | 93 | 84 | 87 | 77 | 76 |
| 6:00 PM | 31 | 31 | 26 | 27 | 34 | 36 | 35 | 48 | 57 | 50 | 59 | 44 | 40 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | 3.1 | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 1 | 3 | 2 | 3 | 4 | 8 | 3 | 11 | 5 | 6 | 6 | 2 | 54 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Thunderstorms | 0 | 0 | 0 | 3 | 7 | 9 | 2 | 9 | 4 | 4 | 3 | 0 | 41 |
| Heavy Fog | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 2 | 0 | 10 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 2 | 0 | 7 | 25 | 27 | 29 | 21 | 3 | 0 | 0 | 0 | 114 |
| - 32° and below | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 19 | 12 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 64 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.06 | 0.23 | 0.28 | 2.38 | 2.08 | 1.81 | 0.26 | 7.66 | 1.92 | 2.42 | 3.35 | 0.05 | 22.50 |
| Maximum in 24 h | 0.06 | 0.18 | 0.28 | 2.04 | 1.16 | 1.10 | 0.15 | 4.67 | 1.54 | 2.19 | 0.92 | 0.05 | 4.67 |
| -Date | 1 | 1 | 26-27 | 4-5 | 10 | 4 | 14 | 28-29 | 14-15 | 27-28 | 28-29 | 14-15 | 28-29 Aug |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | T | T | | | | | | | | | 3.0 | 0.1 | |
| Maximum in 24 h | T | T | | | | | | | | | 3.0 | 0.1 | |
| -Date | 1 | 3+ | | | | | | | | | 24 | 15 | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 12.2 | 10.4 | 11.6 | 11.5 | 12.0 | 8.1 | 8.1 | 7.1 | 6.6 | 8.1 | 9.2 | 9.8 | 9.6 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | W | 2 | 27 | 2 | 30 | 1 | 10 | 15 | 23 | 36 | 32 | 36 | 1.0 |
| Speed | 51 | 41 | 41 | 40 | 48 | 59 | 37 | 36 | 37 | 38 | 54 | 40 | 59 |
| -Date | 23 | 10 | 24+ | 5 | 10 | 2 | 26 | 6 | 26 | 21 | 23 | 17 | 2-Jun |

## San Angelo

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 56.8 | 62.0 | 72.6 | 81.2 | 87.4 | 92.7 | 96.2 | 95.3 | 86.8 | 78.8 | 68.2 | 59.0 | 78.1 |
| Daily Minimum | 30 | 30.6 | 34.7 | 43.5 | 52.7 | 61.1 | 66.4 | 69.1 | 68.4 | 64.0 | 53.6 | 42.6 | 33.0 | 51.6 |
| Monthly | 30 | 43.7 | 48.4 | 58.1 | 67.0 | 74.2 | 79.5 | 82.7 | 81.9 | 75.4 | 66.2 | 55.4 | 46.0 | 64.9 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 49 | 90 | 97 | 97 | 103 | 107 | 110 | 111 | 109 | 107 | 100 | 93 | 91 | 111 |
| -Year | | 1969 | 1996 | 1974 | 1972 | 1989 | 1994 | 1960 | 1986 | 1952 | 1951 | 1980 | 1954 | Jul-60 |
| Lowest | 49 | 5 | -1 | 8 | 25 | 35 | 48 | 56 | 54 | 37 | 26 | 13 | -4 | -4 |
| -Year | | 1982 | 1985 | 1980 | 1973 | 1967 | 1964 | 1990 | 1992 | 1989 | 1993 | 1979 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 660 | 465 | 247 | 70 | 7 | 0 | 0 | 0 | 6 | 71 | 299 | 589 | 2414 |
| Cooling | 30 | 0 | 0 | 33 | 130 | 292 | 435 | 549 | 524 | 318 | 108 | 11 | 0 | 2400 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 36 | 77 | 76 | 72 | 75 | 82 | 82 | 78 | 79 | 84 | 83 | 80 | 78 | 79 |
| 6:00 PM | 36 | 48 | 43 | 36 | 36 | 42 | 42 | 37 | 40 | 49 | 50 | 52 | 52 | 44 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 47 | 5.5 | 5.3 | 5.1 | 5.1 | 5.3 | 4.3 | 4.3 | 4.2 | 4.6 | 4.3 | 4.6 | 5.2 | 4.8 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | | |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 49 | 4.9 | 4.5 | 4.1 | 4.9 | 7.1 | 5.3 | 4.4 | 5.0 | 6.0 | 5.0 | 3.8 | 4.1 | 59.1 |
| Snow or Ice | 49 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 1.3 |
| Thunderstorms | 49 | 0.6 | 1.1 | 2.3 | 4.3 | 7.2 | 5.4 | 4.1 | 4.7 | 3.8 | 2.7 | 1.0 | 0.6 | 37.8 |
| Heavy Fog | 49 | 1.3 | 1.2 | 0.5 | 0.3 | 0.2 | 0.1 | * | * | 0.2 | 0.6 | 1.3 | 1.4 | 7.1 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 36 | * | 0.1 | 0.9 | 5.0 | 11.4 | 21.1 | 27.1 | 26.1 | 12.4 | 2.9 | 0.1 | 0.0 | 107.1 |
| - 32° and below | 36 | 1.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 | 2.5 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 36 | 17.2 | 10.5 | 4.2 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 5.4 | 14.0 | 52.1 |
| - 0° and below | 36 | 0.0 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.80 | 1.07 | 0.91 | 1.67 | 3.00 | 2.33 | 1.06 | 1.93 | 3.41 | 2.40 | 1.08 | 0.79 | 20.45 |
| Maximum Monthly | 49 | 3.65 | 4.45 | 5.00 | 5.10 | 11.24 | 6.01 | 7.21 | 8.13 | 11.00 | 8.68 | 3.55 | 3.98 | 11.24 |
| -Year | | 1961 | 1987 | 1953 | 1977 | 1987 | 1982 | 1959 | 1971 | 1980 | 1981 | 1968 | 1991 | May-87 |
| Minimum Monthly | 49 | 0.00 | 0.01 | T | 0.07 | 0.26 | 0.05 | T | T | T | 0.00 | 0.00 | T | 0.00 |
| -Year | | 1967 | 1974 | 1972 | 1986 | 1962 | 1990 | 1970 | 1959 | 1983 | 1952 | 1950 | 1973 | Jan-67 |
| Maximum in 24 h | 49 | 2.49 | 3.16 | 4.65 | 3.32 | 3.12 | 2.86 | 2.95 | 4.67 | 6.25 | 5.11 | 2.16 | 2.71 | 6.25 |
| -Year | | 1961 | 1987 | 1953 | 1971 | 1987 | 1961 | 1959 | 1996 | 1980 | 1959 | 1975 | 1984 | Sep-80 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.5 | 0.7 | 0.2 | * | * | * | * | | * | * | 0.4 | 0.2 | 3.0 |
| Maximum Monthly | 49 | 9.0 | 5.8 | 3.1 | T | T | T | T | 0.0 | T | T | 8.8 | 3.7 | 9.0 |
| -Year | | 1978 | 1973 | 1962 | 1990 | 1995 | 1992 | 1992 | | 1992 | 1994 | 1968 | 1986 | Jan-78 |
| Maximum in 24 h | 49 | 7.4 | 4.1 | 3.1 | T | T | T | T | 0.0 | T | T | 5.8 | 3.3 | 7.4 |
| -Year | | 1978 | 1966 | 1962 | 1990 | 1995 | 1992 | 1992 | | 1992 | 1994 | 1968 | 1986 | Jan-78 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 47 | 10.2 | 10.8 | 12.2 | 12.1 | 11.2 | 11.0 | 9.8 | 9.1 | 9.0 | 9.3 | 10.0 | 9.9 | 10.4 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 55 | 59 | 61 | 67 | 76 | 71 | 56 | 67 | 52 | 68 | 74 | 53 | 76 |
| Direction | 13 | *36* | *27* | *27* | *22* | *4* | *31* | *18* | *22* | *4* | *27* | *31* | *31* | *4* |
| -Year | | 1993 | 1989 | 1987 | 1993 | 1988 | 1991 | 1993 | 1992 | 1992 | 1992 | 1994 | 1993 | May-88 |

# San Antonio, Texas

The city of San Antonio is located in the south-central portion of Texas on the Balcones escarpment. Northwest of the city the terrain slopes upward to the Edwards Plateau and to the southeast it slopes downward to the Gulf Coastal Plains. Soils are blackland clay and silty loam on the Plains and thin limestone soils on the Edwards Plateau.

The location of San Antonio of the edge of the Gulf Coastal Plains is influenced by a modified subtropical climate predominantly continental during the winter months and marine during the summer months. Temperatures range from 50°F in January to the middle 80s in July and August. While the summer is hot with daily temperatures above 90°F over 80% of the time extremely high temperatures are rare. Mild weather prevails during much of the winter months with below-freezing temperatures occurring on an average of about 20 days each year.

San Antonio is situated between a semi-arid area to the west and the coastal area of heavy precipitation to the east. The normal annual rainfall of nearly 28" is sufficient for the production of most crops. Precipitation is fairly well distributed throughout the year with the heaviest amounts occurring during May and September. The precipitation form April through September usually occurs from thunderstorms. Large amounts of precipitation may fall during short periods of time. Most of the winter precipitation occurs as light rain or drizzle. Thunderstorms and heavy rains have occurred in all months of the year. Hail of damaging intensity seldom occurs but light hail is frequent with the springtime thunderstorms. Measurable snow occurs only once in three or four years. Snowfall of 2" to 4" occurs about every ten years.

Northerly winds prevail during most of the winter and strong northerly winds occasionally occur during storms called northers. Southeasterly winds from the Gulf of Mexico also occur frequently during winter and are predominant in summer.

Since San Antonio is located only 140 miles from the Gulf of Mexico, tropical storms occasionally affect the city with strong winds and heavy rains. One of the fastest winds recorded, 74 mph, occurred as a tropical storm moved inland east of the city in August 1942.

Relative humidity is above 80% during the early morning hours most of the year dropping to near 50% in the late afternoon.

San Antonio has about 50% of the possible amount of sunshine during the winter months and more than 70% during the summer months. Skies are clear to partly cloudy more than 60% of the time and cloudy less than 40%. Air carried over San Antonio by southeasterly winds is lifted orographically, causing low stratus clouds to develop frequently during the later part of the night. These clouds usually dissipate around noon, and clear skies prevail a high percentage of the time during the afternoon.

The first occurrence of 32°F is in late November and the average last occurrence is in early March.

## San Antonio 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 65.8 | 70.7 | 70.9 | 84.3 | 92.6 | 95.3 | 98.8 | 94.8 | 88.4 | 82.0 | 72.4 | 66.3 | 81.9 |
| Daily Minimum | 36.3 | 45.1 | 44.3 | 54.6 | 71.1 | 72.9 | 75.8 | 74.0 | 68.4 | 60.1 | 50.2 | 42.7 | 58.0 |
| Monthly | 51.0 | 57.9 | 57.6 | 69.5 | 81.9 | 84.1 | 87.3 | 84.4 | 78.4 | 71.1 | 61.3 | 54.5 | 69.9 |
| Monthly Dew Point | 32.8 | 37.8 | 39.3 | 48.5 | 66.5 | 67.1 | 67.9 | 68.9 | 67.5 | 59.3 | | 42.5 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 81 | 100 | 89 | 101 | 100 | 103 | 102 | 102 | 95 | 91 | 91 | 84 | 103 |
| -Date | 23 | 21 | 30 | 19 | 20 | 20 | 23 | 5 | 16 | 17 | 6 | 12 | 20-Jun |
| Lowest | 18 | 19 | 25 | 35 | 54 | 62 | 70 | 68 | 50 | 36 | 30 | 18 | 18 |
| -Date | 8 | 4 | 9 | 7 | 1 | 9 | 26 | 15 | 29 | 23 | 26 | 19 | 8-Jan |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 435 | 280 | 277 | 63 | 0 | 0 | 0 | 0 | 0 | 27 | 165 | 325 | 1572 |
| Cooling | 9 | 79 | 57 | 203 | 530 | 578 | 700 | 610 | 411 | 220 | 60 | 8 | 3465 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 73 | 68 | 75 | 76 | 85 | 86 | 85 | 88 | 91 | 86 | 89 | 84 | 82 |
| 6:00 PM | 40 | 40 | 39 | 32 | 46 | 41 | 36 | 52 | 58 | 57 | 60 | 56 | 46 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 0 | 1 | 4 | 4 | 4 | 7 | 2 | 10 | 8 | 3 | 8 | 5 | 56 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 0 | 0 | 3 | 5 | 4 | 4 | 8 | 3 | 0 | 1 | 1 | 29 |
| Heavy Fog | 3 | 2 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 4 | 2 | 3 | 19 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 4 | 0 | 11 | 23 | 29 | 31 | 24 | 16 | 1 | 1 | 0 | 140 |
| - 32° and below | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 12 | 6 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 32 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | T | 0.70 | 0.30 | 0.89 | 1.26 | 2.12 | 1.31 | 2.86 | 3.66 | 0.36 | 2.79 | 1.56 | 17.81 |
| Maximum in 24 h | T | 0.69 | 0.27 | 0.42 | 0.74 | 0.73 | 0.66 | 0.92 | 1.78 | 0.26 | 1.00 | 0.92 | 1.78 |
| -Date | 27+ | 29 | 26-27 | 5 | 27 | 2 | 25 | 31 | 24 | 27-28 | 24 | 15-16 | 24-Sep |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | 0.0 | | | | | | | | | | | |
| Maximum in 24 h | 0.0 | 0.0 | | | | | | | | | | | |
| -Date | | | | | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 8.6 | 9.1 | 9.4 | 10.8 | 12.8 | 9.3 | 9.6 | 8.5 | 6.3 | 7.7 | 8.5 | 6.6 | 8.9 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 34 | 1 | 1 | 33 | 33 | 11 | 29 | 15 | 26 | 35 | 32 | 36 | 26 |
| Speed | 38 | 38 | 46 | 45 | 34 | 33 | 54 | 41 | 71 | 36 | 34 | 40 | 71 |
| -Date | 18 | 28 | 6 | 28 | 27 | 22+ | 25 | 19 | 15 | 21 | 24 | 15 | 15-Sep |

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 60.8 | 65.7 | 73.5 | 80.3 | 85.3 | 91.8 | 95.0 | 95.3 | 89.3 | 81.7 | 71.9 | 63.5 | 79.5 |
| Daily Minimum | 30 | 37.9 | 41.3 | 49.7 | 58.4 | 65.7 | 72.6 | 75.0 | 74.5 | 69.2 | 58.8 | 48.8 | 40.8 | 57.7 |
| Monthly | 30 | 49.3 | 53.5 | 61.7 | 69.3 | 75.5 | 82.2 | 85.0 | 84.9 | 79.3 | 70.2 | 60.4 | 52.2 | 68.6 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 55 | 89 | 100 | 100 | 101 | 103 | 105 | 106 | 108 | 103 | 99 | 94 | 90 | 108 |
| -Year | | 1971 | 1996 | 1991 | 1996 | 1989 | 1980 | 1989 | 1986 | 1985 | 1991 | 1988 | 1955 | Aug-86 |
| Lowest | 55 | 0 | 6 | 19 | 31 | 43 | 53 | 62 | 61 | 41 | 27 | 21 | 6 | 0 |
| -Year | | 1949 | 1951 | 1980 | 1987 | 1984 | 1964 | 1967 | 1992 | 1942 | 1993 | 1976 | 1989 | Jan-49 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 494 | 332 | 167 | 32 | 0 | 0 | 0 | 0 | 0 | 30 | 180 | 409 | 1644 |
| Cooling | 30 | 8 | 10 | 64 | 161 | 326 | 516 | 620 | 617 | 429 | 191 | 42 | 12 | 2996 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 54 | 80 | 80 | 79 | 83 | 88 | 88 | 87 | 86 | 86 | 84 | 81 | 80 | 84 |
| 6:00 PM | 54 | 57 | 52 | 47 | 51 | 55 | 52 | 45 | 45 | 51 | 52 | 56 | 57 | 52 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 53 | 6.3 | 6.2 | 6.2 | 6.4 | 6.4 | 5.5 | 5.1 | 4.9 | 5.2 | 5.0 | 5.6 | 6.1 | 5.7 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 53 | 46 | 51 | 57 | 56 | 56 | 67 | 74 | 74 | 67 | 64 | 54 | 48 | 60 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 54 | 8.1 | 7.7 | 7.3 | 7.3 | 8.6 | 6.5 | 4.3 | 5.0 | 7.1 | 6.3 | 6.5 | 7.6 | 82.3 |
| Snow or Ice | 54 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Thunderstorms | 54 | 1.0 | 1.6 | 2.7 | 4.0 | 6.6 | 4.6 | 3.5 | 4.1 | 4.2 | 2.7 | 1.7 | 0.9 | 37.6 |
| Heavy Fog | 54 | 5.1 | 2.9 | 2.3 | 1.3 | 0.8 | 0.1 | 0.1 | * | 0.2 | 1.4 | 2.8 | 4.4 | 21.4 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 54 | 0.0 | 0.1 | 0.8 | 2.2 | 8.4 | 21.9 | 28.4 | 28.2 | 17.6 | 4.6 | 0.1 | * | 112.3 |
| - 32° and below | 54 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 54 | 8.1 | 4.6 | 1.5 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 2.0 | 5.8 | 22.0 |
| - 0° and below | 54 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.71 | 1.81 | 1.52 | 2.50 | 4.22 | 3.81 | 2.16 | 2.54 | 3.41 | 3.17 | 2.62 | 1.51 | 30.98 |
| Maximum Monthly | 54 | 8.52 | 6.43 | 6.12 | 9.32 | 12.85 | 11.95 | 8.29 | 11.14 | 15.78 | 9.75 | 6.01 | 13.96 | 15.78 |
| -Year | | 1968 | 1965 | 1992 | 1957 | 1987 | 1986 | 1990 | 1974 | 1946 | 1994 | 1977 | 1991 | Sep-46 |
| Minimum Monthly | 54 | T | 0.03 | 0.03 | 0.11 | 0.17 | 0.01 | T | 0.00 | 0.06 | T | T | 0.03 | 0.00 |
| -Year | | 1996 | 1954 | 1961 | 1984 | 1961 | 1967 | 1993 | 1952 | 1947 | 1952 | 1966 | 1950 | Aug-52 |
| Maximum in 24 h | 54 | 3.18 | 2.44 | 3.59 | 4.88 | 6.53 | 6.30 | 6.97 | 5.57 | 7.28 | 5.29 | 4.87 | 6.90 | 7.28 |
| -Year | | 1968 | 1986 | 1992 | 1977 | 1972 | 1986 | 1958 | 1950 | 1973 | 1942 | 1977 | 1991 | Sep-73 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | | | | | | | | | | | | | | |
| Maximum Monthly | 54 | 15.9 | 3.5 | T | T | T | T | 0.0 | 0.0 | 0.0 | T | 0.3 | 0.2 | 15.9 |
| -Year | | 1985 | 1966 | 1994 | 1993 | 1993 | 1989 | | | | 1993 | 1957 | 1964 | Jan-85 |
| Maximum in 24 h | 54 | 3.2 | 2.4 | 3.6 | 4.9 | 6.5 | 6.3 | 7.0 | 5.6 | 7.3 | 5.3 | 4.9 | 6.9 | 7.28 |
| -Year | | 1968 | 1986 | 1992 | 1977 | 1972 | 1986 | 1958 | 1950 | 1973 | 1942 | 1977 | 1991 | Sep-73 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 54 | 8.8 | 9.4 | 10.1 | 10.1 | 9.8 | 9.7 | 9.1 | 8.4 | 8.3 | 8.3 | 8.6 | 8.4 | 9.1 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 51 | 56 | 64 | 47 | 55 | 51 | 54 | 49 | 71 | 44 | 52 | 48 | 71 |
| Direction | 13 | *36* | *31* | *31* | *31* | *31* | *31* | 29 | *22* | 26 | 01 | 36 | *27* | *31* |
| -Year | | 1985 | 1984 | 1994 | 1988 | 1987 | 1984 | 1996 | 1984 | 1996 | 1995 | 1995 | 1987 | Mar-94 |

# Shreveport, Louisiana

Shreveport is located in the northwestern section of Louisiana, some 30 miles south of Arkansas and 15 miles east of Texas. A portion of the city is situated in the Red River bottom lands and the remainder in gently rolling hills that begin about 1 mile west of the river. The NOAA National Weather Service Office is at the Shreveport Regional Airport, about 7 miles southwest of the downtown area. Elevations in the Shreveport area range from about 170 to 280 feet above sea level. The climate of Shreveport is transitional between the subtropical humid type prevalent to the south and the continental climates of the Great Plains and Middle West to the north. During winter, masses of moderate to severely cold air move periodically through the area. Rainfall is abundant with the normal annual total near 45 inches. Amounts are substantial from late autumn to spring and there is a summer-early autumn low amount with monthly averages less than 3 inches in August, September, and October.

The winter months are normally mild with cold spells generally of short duration. Freezing temperatures are recorded on an average of 37 days during the year. The average first occurrence of 32°F in the autumn is mid-November, and the last occurrence in the spring is early March. Although temperatures have fallen below zero degrees, they normally drop below abut 15°F in about one-half the years. Temperatures recorded at the NWS Office at the airport on clear, calm nights are normally 2°F to 5°F warmer than those experienced in the river bottom lands. The summer months are consistently quite warm and humid with temperatures exceeding 100°F on about 10 days a year and exceeding 95°F about 45 days per year. Late afternoon humidity rarely drops below 55%.

Measurable snow occurs only once every other year on average. Many consecutive years may pass with no measurable snow. The heaviest snowstorms in the Shreveport area have produced more than 10 inches. More troublesome than the infrequent heavy snowfall are ice and sleet storms which may cause considerable damage to trees and utility lines, as well as make travel very difficult.

Thunderstorms occur each month, but are most frequent in spring and summer months. Severe local storms, including hailstorms, tornadoes, and local windstorms have occurred over small areas in all seasons, but are most frequent during the spring months, with a secondary peak from late November through early January. Large hail of a damaging nature is infrequent, although hail as large as grapefruit has fallen on a few occasions.

Tropical cyclones are in the dissipating stages by the time they reach this portion of the state and winds from them are usually not a destructive factor. Associated heavy rainfall can contribute to local flooding.

## Shreveport 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 58.2 | 64.0 | 65.5 | 76.7 | 86.5 | 87.6 | 91.4 | 88.6 | 84.5 | 77.1 | 65.6 | 61.5 | 75.6 |
| Daily Minimum | 34.3 | 40.8 | 41.3 | 50.8 | 67.5 | 68.9 | 73.1 | 71.3 | 63.7 | 54.8 | 45.8 | 41.5 | 54.5 |
| Monthly | 46.2 | 52.4 | 53.4 | 63.8 | 77.0 | 78.3 | 82.3 | 80.0 | 74.1 | 66.0 | 55.7 | 51.5 | 65.1 |
| Monthly Dew Point | 35.1 | 37.6 | 37.7 | 49.8 | 67.2 | 69.9 | 73.1 | 71.9 | 65.2 | 57.5 | 48.6 | 43.5 | 54.8 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 76 | 87 | 84 | 87 | 94 | 93 | 99 | 95 | 91 | 87 | 79 | 78 | 99 |
| -Date | 30 | 21 | 6 | 19 | 28 | 17 | 3 | 2 | 10 | 27 | 5 | 12 | 3-Jul |
| Lowest | 12 | 14 | 22 | 34 | 46 | 58 | 68 | 65 | 48 | 39 | 32 | 16 | 12 |
| -Date | 8 | 29 | 9 | 7 | 1 | 9 | 11 | 15 | 29 | 19 | 28 | 20 | 8-Jan |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 576 | 387 | 372 | 115 | 2 | 0 | 0 | 0 | 10 | 59 | 277 | 427 | 2225 |
| Cooling | 3 | 31 | 23 | 85 | 384 | 403 | 543 | 471 | 291 | 96 | 6 | 16 | 2352 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 83 | 76 | 77 | 83 | 91 | 95 | 92 | 96 | 94 | 93 | 89 | 88 | 88 |
| 6:00 PM | 62 | 52 | 47 | 52 | 60 | 65 | 67 | 69 | 68 | 72 | 78 | 73 | 64 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | 82 | 90 | | | 87 | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 3 | 4 | 10 | 8 | 2 | 12 | 9 | 11 | 10 | 6 | 10 | 8 | 93 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 2 | 1 | 5 | 7 | 3 | 12 | 12 | 8 | 7 | 3 | 3 | 2 | 65 |
| Heavy Fog | 5 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 4 | 6 | 23 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 0 | 0 | 0 | 10 | 12 | 22 | 17 | 6 | 0 | 0 | 0 | 67 |
| - 32° and below | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 15 | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 44 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 2.12 | 0.64 | 2.33 | 3.86 | 0.93 | 6.50 | 5.70 | 5.78 | 7.17 | 1.66 | 5.87 | 2.24 | 44.80 |
| Maximum in 24 h | 1.04 | 0.39 | 1.04 | 0.94 | 0.82 | 3.63 | 2.50 | 2.79 | 2.74 | 1.52 | 2.09 | 0.92 | 3.63 |
| -Date | 23 | 1 | 24 | 5 | 11 | 1 | 24 | 9 | 26-27 | 21-22 | 24-25 | 15-16 | 5-6 Jul |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | T | 0.4 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | |
| Maximum in 24 h | T | 0.3 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | |
| -Date | 18+ | 2 | | | | | | | | | | 16 | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 9.9 | 9.8 | 10.1 | 10.0 | 9.5 | 5.5 | 6.2 | 4.7 | 5.4 | 6.4 | 8.1 | 8.1 | 7.8 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 26 | 33 | 31 | 32 | 17 | 15 | 31 | 7 | 33 | 2 | 29 | 18 | 31 |
| Speed | 44 | 39 | 53 | 39 | 30 | 34 | 49 | 37 | 41 | 46 | 51 | 34 | 53 |
| -Date | 18 | 16 | 18 | 15+ | 27 | 23 | 23 | 1 | 19 | 21 | 7 | 21 | 18-Mar |

## Shreveport

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 55.4 | 60.6 | 69.2 | 77.1 | 83.2 | 89.7 | 93.0 | 93.1 | 87.3 | 78.7 | 68.0 | 58.5 | 76.2 |
| Daily Minimum | 30 | 34.8 | 38.0 | 45.8 | 54.1 | 62.0 | 69.0 | 72.3 | 71.3 | 66.0 | 54.3 | 45.3 | 37.3 | 54.2 |
| Monthly | 30 | 45.1 | 49.3 | 57.5 | 65.6 | 72.6 | 79.4 | 82.7 | 82.2 | 76.7 | 66.5 | 56.7 | 48.0 | 65.2 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 44 | 84 | 89 | 92 | 94 | 95 | 101 | 106 | 107 | 105 | 97 | 88 | 84 | 107 |
| -Year | | 1972 | 1986 | 1974 | 1987 | 1977 | 1988 | 1980 | 1962 | 1995 | 1954 | 1984 | 1955 | Aug-62 |
| Lowest | 44 | 3 | 12 | 20 | 31 | 42 | 52 | 58 | 53 | 42 | 28 | 16 | 5 | 3 |
| -Year | | 1962 | 1978 | 1980 | 1989 | 1960 | 1977 | 1972 | 1992 | 1984 | 1993 | 1976 | 1989 | Jan-62 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 623 | 448 | 262 | 69 | 0 | 0 | 0 | 0 | 0 | 63 | 264 | 535 | 2264 |
| Cooling | 30 | 6 | 8 | 30 | 87 | 239 | 432 | 549 | 533 | 351 | 110 | 15 | 8 | 2368 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 44 | 84 | 83 | 83 | 87 | 90 | 91 | 91 | 91 | 91 | 89 | 87 | 85 | 88 |
| 6:00 PM | 44 | 65 | 58 | 54 | 57 | 61 | 60 | 58 | 57 | 60 | 62 | 67 | 68 | 61 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 43 | 6.7 | 6.3 | 6.3 | 6.2 | 6.2 | 5.4 | 5.3 | 5.0 | 5.1 | 4.8 | 5.6 | 6.3 | 5.8 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | 43 | 49 | 55 | 58 | 59 | 64 | 72 | 75 | 74 | 70 | 70 | 59 | 52 | 63 |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 44 | 9.8 | 8.3 | 9.2 | 8.7 | 9.4 | 7.9 | 7.8 | 6.7 | 6.8 | 6.7 | 8.2 | 9.3 | 98.8 |
| Snow or Ice | 44 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | 0.* | 0.5 |
| Thunderstorms | 44 | 2.0 | 2.9 | 4.9 | 5.7 | 7.3 | 7.4 | 8.0 | 6.5 | 4.2 | 2.9 | 3.1 | 2.2 | 57.1 |
| Heavy Fog | 44 | 3.3 | 2.2 | 1.4 | 1.2 | 1.0 | 0.5 | 0.3 | 0.4 | 0.9 | 2.2 | 2.6 | 3.0 | 19.0 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 44 | 0.0 | 0.0 | 0.* | 0.3 | 4.0 | 18.3 | 25.6 | 25.1 | 14.3 | 2.5 | 0.0 | 0.0 | 90.1 |
| - 32° and below | 44 | 1.0 | 0.3 | 0.* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 1.7 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 44 | 12.6 | 7.6 | 2.5 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 3.3 | 9.9 | 36.2 |
| - 0° and below | 44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 3.88 | 3.92 | 3.59 | 3.75 | 5.18 | 4.29 | 3.67 | 2.43 | 3.12 | 3.73 | 4.45 | 4.10 | 46.11 |
| Maximum Monthly | 44 | 10.09 | 8.57 | 7.23 | 21.84 | 11.78 | 17.11 | 9.46 | 9.23 | 9.49 | 12.05 | 10.81 | 10.00 | 21.84 |
| -Year | | 1974 | 1983 | 1969 | 1991 | 1967 | 1989 | 1972 | 1991 | 1968 | 1984 | 1987 | 1982 | Apr-91 |
| Minimum Monthly | 44 | 0.27 | 0.64 | 0.56 | 0.43 | 0.42 | 0.13 | 0.15 | 0.35 | 0.08 | 0.00 | 0.71 | 0.59 | 0.00 |
| -Year | | 1971 | 1996 | 1966 | 1987 | 1988 | 1988 | 1964 | 1985 | 1994 | 1963 | 1967 | 1981 | Oct-63 |
| Maximum in 24 h | 44 | 4.35 | 3.53 | 3.63 | 10.44 | 5.27 | 7.28 | 4.40 | 4.64 | 5.39 | 3.88 | 6.51 | 3.35 | 10.44 |
| -Year | | 1990 | 1965 | 1979 | 1991 | 1978 | 1993 | 1995 | 1955 | 1961 | 1957 | 1987 | 1965 | Apr-91 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Maximum Monthly | 44 | 5.9 | 4.4 | 4.0 | 0.3 | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 1.3 | 5.4 | 5.9 |
| -Year | | 1978 | 1985 | 1964 | 1987 | 1994 | | | | | 1992 | 1980 | 1983 | Jan-78 |
| Maximum in 24 h | 44 | 5.6 | 4.4 | 4.0 | 0.3 | T | 0.0 | 0.0 | 0.0 | 0.0 | T | 1.3 | 5.4 | 5.6 |
| -Year | | 1982 | 1985 | 1965 | 1987 | 1994 | | | | | 1992 | 1980 | 1983 | Jan-82 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 44 | 9.2 | 9.6 | 10.0 | 9.6 | 8.3 | 7.5 | 7.1 | 6.6 | 7.2 | 7.4 | 8.5 | 8.8 | 8.3 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 54 | 54 | 58 | 81 | 83 | 66 | 66 | 56 | 54 | 51 | 63 | 64 | 83 |
| Direction | 13 | *31* | *36* | *31* | *27* | *36* | *36* | *31* | *27* | *31* | *31* | *31* | *27* | *36* |
| -Year | | 1995 | 1990 | 1986 | 1991 | 1991 | 1992 | 1989 | 1991 | 1992 | 1994 | 1992 | 1987 | May-91 |

# Victoria, Texas

The city of Victoria is located in the south-central Texas Coastal Plain. The climate is classified as humid subtropical. Summers are hot with about 100 days with temperatures of 90 degrees or above. However, pleasant sea breezes from the nearby Gulf of Mexico make the high temperatures bearable.

Spring is characterized by mild days, brisk winds, and occasional showers and thunderstorms. Strong southeast winds begin in March, diminish in April and May, and become pleasant sea breezes in the first half of June. Thunderstorm activity increases through March and April, reaching a peak in May. Considerable cloudiness is the rule, with almost 50 percent of the days in the spring having overcast or nearly overcast skies.

The sea breeze diminishes during the summer, and at times fails altogether, and some hot nights are experienced in late June, July, and early August. High summer humidity gives way to clear, drier air in late August. Nighttime temperatures drop to pleasant levels. Thunderstorms continue, and lawns and fields remain green. The first norther usually arrives near the beginning of fall, in late September. October and November are ideal fall months with long periods of clear days with mild temperatures and cool nights. The amount of rainfall decreases.

The winter season weather conditions alternate between clear, cold, dry periods and cloudy, mild, drizzly days as fronts move down from the north. The temperature drops below 32 degrees on an average of about a dozen mornings per year.

The normal rainfall of about 36 inches is well distributed throughout the year, with the heaviest falls coming during the growing season. Some of the smaller streams dry up in the late summer, and during occasional periods of general drought some of the larger streams may reach pool stage.

The area is subject to occasional tropical disturbances during summer and fall. Destructive winds and torrential rains may occur in these storms. Approximately 50 days per year have thunderstorms, but hail is infrequent. Destructive storms with tornadoes are rare.

## Victoria 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 66.2 | 69.9 | 69.5 | 81.2 | 90.3 | 93.5 | 95.5 | 92.4 | 87.5 | 82.7 | 75.2 | 69.5 | 81.1 |
| Daily Minimum | 39.9 | 46.7 | 46.0 | 57.0 | 72.0 | 72.3 | 74.6 | 74.1 | 70.7 | 62.7 | 52.0 | 47.7 | 59.6 |
| Monthly | 53.0 | 58.3 | 57.8 | 69.1 | 81.2 | 82.9 | 85.1 | 83.3 | 79.1 | 72.7 | 63.6 | 58.6 | 70.4 |
| Monthly Dew Point | 45.7 | 50.3 | 48.8 | 56.6 | 70.3 | 71.0 | 73.6 | 74.4 | 73.0 | 65.3 | 56.3 | 51.0 | 61.4 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 81 | 88 | 87 | 92 | 96 | 100 | 99 | 101 | 92 | 89 | 89 | 82 | 101 |
| -Date | 26 | 23 | 30 | 14 | 29 | 18 | 23 | 13 | 24 | 30 | 1 | 29 | 13-Aug |
| Lowest | 21 | 23 | 29 | 37 | 50 | 60 | 72 | 72 | 52 | 40 | 33 | 20 | 20 |
| -Date | 8 | 4 | 10 | 7 | 1 | 9 | 25 | 31 | 29 | 23 | 26 | 19 | 19-Dec |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 373 | 259 | 258 | 50 | 0 | 0 | 0 | 0 | 0 | 14 | 119 | 238 | 1311 |
| Cooling | 9 | 73 | 41 | 184 | 509 | 543 | 631 | 573 | 434 | 261 | 87 | 47 | 3392 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 92 | 88 | 88 | 89 | 92 | 94 | 96 | 97 | 98 | 93 | 94 | 92 | 93 |
| 6:00 PM | 72 | 76 | 67 | 58 | 67 | 59 | 58 | 72 | 79 | 78 | 76 | 76 | 70 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 7 | 6 | 4 | 4 | 2 | 13 | 2 | 17 | 13 | 8 | 9 | 8 | 93 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 0 | 0 | 2 | 2 | 11 | 3 | 18 | 14 | 1 | 1 | 3 | 55 |
| Heavy Fog | 10 | 7 | 7 | 3 | 1 | 0 | 0 | 1 | 2 | 5 | 4 | 10 | 50 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 0 | 0 | 3 | 19 | 24 | 31 | 21 | 13 | 0 | 0 | 0 | 111 |
| - 32° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 6 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.08 | 0.38 | 0.36 | 2.47 | 1.52 | 6.35 | 0.19 | 7.03 | 5.76 | 0.45 | 2.09 | 2.06 | 28.74 |
| Maximum in 24 h | 0.01 | 0.25 | 0.21 | 1.28 | 1.34 | 3.06 | 0.14 | 2.93 | 1.87 | 0.14 | 1.15 | 1.26 | 3.06 |
| -Date | 30+ | 28-29 | 26-27 | 29 | 11 | 25-26 | 25 | 29-30 | 8 | 16 | 24 | 15-16 | 25-26-Jun |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | | | | | | | | | | | | |
| Maximum in 24 h | 0.0 | | | | | | | | | | | | |
| -Date | | | | | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 10.9 | 11.7 | 11.5 | 12.6 | 14.2 | 9.1 | 8.8 | 8.3 | 6.7 | 8.9 | 10.2 | 9.0 | 10.2 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 18 | 19 | 35 | 32 | 13 | 3 | 14 | 27 | 7 | 35 | 35 | 34 | 18 |
| Speed | 51 | 44 | 47 | 46 | 40 | 46 | 29 | 45 | 36 | 36 | 37 | 39 | 51 |
| -Date | 17 | 19 | 7 | 29 | 11 | 2 | 26 | 13 | 24 | 22 | 24 | 15 | 17-Jan |

## Victoria

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 62.8 | 66.8 | 73.7 | 80.2 | 85.3 | 90.7 | 93.5 | 93.9 | 88.9 | 82.4 | 73.4 | 66.0 | 79.8 |
| Daily Minimum | 30 | 42.5 | 45.4 | 52.8 | 61.0 | 67.7 | 72.7 | 74.6 | 74.2 | 70.3 | 60.9 | 52.4 | 45.2 | 60.0 |
| Monthly | 30 | 52.7 | 56.1 | 63.3 | 70.6 | 76.6 | 81.7 | 84.1 | 84.1 | 79.6 | 71.7 | 62.9 | 55.6 | 69.9 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 36 | 88 | 95 | 97 | 98 | 101 | 101 | 104 | 107 | 102 | 99 | 93 | 88 | 107 |
| -Year | | 1971 | 1986 | 1989 | 1963 | 1964 | 1990 | 1964 | 1962 | 1989 | 1991 | 1988 | 1964 | Aug-62 |
| Lowest | 36 | 14 | 19 | 21 | 33 | 49 | 59 | 62 | 62 | 49 | 31 | 24 | 9 | 9 |
| -Year | | 1982 | 1985 | 1980 | 1987 | 1978 | 1984 | 1967 | 1992 | 1984 | 1993 | 1976 | 1989 | Dec-89 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 403 | 266 | 128 | 15 | 0 | 0 | 0 | 0 | 0 | 15 | 147 | 322 | 1296 |
| Cooling | 30 | 21 | 17 | 76 | 183 | 360 | 501 | 592 | 592 | 438 | 223 | 84 | 31 | 3118 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 35 | 87 | 87 | 87 | 89 | 91 | 92 | 92 | 92 | 92 | 90 | 88 | 87 | 90 |
| 6:00 PM | 35 | 68 | 63 | 61 | 63 | 66 | 65 | 60 | 61 | 65 | 65 | 69 | 71 | 65 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 34 | 7.0 | 6.7 | 6.8 | 7.0 | 6.8 | 5.8 | 5.6 | 5.7 | 5.7 | 5.1 | 5.9 | 7.0 | 6.3 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | | |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 35 | 8.3 | 7.1 | 6.8 | 6.2 | 7.6 | 7.6 | 7.4 | 8.6 | 9.9 | 6.2 | 6.5 | 8.1 | 90.3 |
| Snow or Ice | 35 | 0.1 | 0.* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Thunderstorms | 35 | 1.4 | 1.8 | 2.6 | 3.6 | 6.6 | 6.1 | 6.8 | 9.2 | 8.0 | 3.6 | 1.8 | 1.1 | 52.6 |
| Heavy Fog | 35 | 6.9 | 5.1 | 5.1 | 3.9 | 2.1 | 0.6 | 0.2 | 0.2 | 1.1 | 3.2 | 5.6 | 6.3 | 40.3 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 35 | 0.0 | 0.1 | 0.3 | 0.8 | 5.6 | 20.0 | 27.8 | 28.1 | 17.6 | 4.7 | 0.1 | 0.0 | 105.1 |
| - 32° and below | 35 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 35 | 4.6 | 2.3 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | 0.6 | 3.0 | 10.9 |
| - 0° and below | 35 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 2.16 | 2.00 | 1.55 | 2.41 | 4.50 | 4.89 | 3.34 | 3.01 | 5.60 | 3.46 | 2.45 | 2.04 | 37.41 |
| Maximum Monthly | 36 | 7.76 | 9.08 | 5.51 | 11.09 | 14.66 | 12.68 | 13.59 | 7.30 | 19.05 | 10.47 | 8.68 | 6.97 | 19.05 |
| -Year | | 1991 | 1992 | 1985 | 1991 | 1993 | 1973 | 1990 | 1974 | 1978 | 1994 | 1982 | 1975 | Sep-78 |
| Minimum Monthly | 36 | 0.02 | 0.23 | 0.18 | T | 0.69 | T | 0.07 | 0.34 | 1.11 | 0.34 | 0.02 | 0.36 | T |
| -Year | | 1971 | 1988 | 1971 | 1987 | 1989 | 1980 | 1982 | 1965 | 1982 | 1987 | 1981 | 1972 | Apr-87 |
| Maximum in 24 h | 36 | 4.70 | 3.21 | 2.78 | 9.87 | 8.45 | 9.30 | 8.41 | 6.14 | 8.51 | 8.15 | 6.63 | 6.12 | 9.87 |
| -Year | | 1991 | 1992 | 1991 | 1991 | 1972 | 1977 | 1990 | 1964 | 1967 | 1994 | 1982 | 1975 | Apr-91 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Maximum Monthly | 36 | 2.1 | 1.0 | T | 0.0 | T | 0.0 | 0.0 | T | 0.0 | 0.0 | 0.2 | T | 2.1 |
| -Year | | 1985 | 1973 | 1990 | | 1993 | | | 1994 | | | 1976 | 1990 | Jan-85 |
| Maximum in 24 h | 36 | 2.1 | 1.0 | T | 0.0 | T | 0.0 | 0.0 | T | 0.0 | 0.0 | 0.2 | T | 2.1 |
| -Year | | 1985 | 1973 | 1990 | | 1993 | | | 1994 | | | 1976 | 1990 | Jan-85 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 35 | 10.4 | 10.9 | 11.5 | 11.7 | 10.7 | 9.6 | 8.9 | 8.3 | 8.6 | 8.9 | 9.8 | 10.1 | 10.0 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 13 | 51 | 54 | 54 | 62 | 68 | 60 | 54 | 54 | 44 | 75 | 55 | 45 | 75 |
| Direction | 13 | 18 | *36* | *36* | *36* | *36* | *36* | *9* | *36* | *18* | *31* | *36* | *36* | *31* |
| -Year | | 1996 | 1984 | 1993 | 1995 | 1986 | 1995 | 1993 | 1994 | 1993 | 1994 | 1987 | 1991 | Oct-94 |

# Waco, Texas

One of the major cities of Texas, Waco is located in the rich agricultural region of the Brazos River Valley in North Central Texas. The city lies on the edge of the gently rolling Blackland Prairies. To the west lies the roiling to hilly Grand Prairie. Waco is a commercial hub with an economy based on industry, education and agriculture. Baylor University, founded in 1845, is located here. Regional agriculture includes chiefly cattle, poultry, sorghum, cotton and corn. Soils are black waxy, loam and sandy types. Lake Waco, a reservoir of 7,260 surface acres, lies within the Waco city limits, with the north shoreline approximately 0.8 miles south of the Municipal Airport.

The climate of Waco is humid subtropical with hot summers. It is a continental type climate characterized by extreme variations in temperature. Tropical maritime air masses predominate throughout the late spring, summer and early fall months, while Polar air masses frequent the area in winter. In an average year, April and May are the wettest months, while the July-August period is the driest. Most warm season rainfall occurs from thunderstorm activity. Consequently, considerable spatial variation in amounts occur.

Winters are mild. Cold fronts moving down from the High Plains often are accompanied by strong, gusty, northerly winds and sharp drops in temperature. Cold spells are of short duration, rarely lasting longer than 2 or 3 days before a rapid warming occurs. Winter precipitation is closely associated with frontal activity, and may fall as rain, freezing rain, sleet or snow. During most years, snowfall is of little or no consequence.

Daytime temperatures are hot is summer, particularly in July and August. The highest temperatures are associated with fair skies, light winds, and comparatively low humidities. There is little variety in the day-to-day weather during July and August. Air conditioning is recommended for maximum comfort indoors or while traveling.

The spring and fall seasons are very pleasant at Waco. Temperatures are comfortable. Cloudiness and showers are more frequent in the spring than in the fall. The

average first occurrence of 32°F is late November and the average last occurrence is in mid March.

**Waco** **1996**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 58.7 | 67.3 | 67.8 | 80.4 | 90.7 | 92.8 | 97.8 | 93.2 | 85.3 | 79.4 | 68.7 | 62.5 | 78.7 |
| Daily Minimum | 30.5 | 40.3 | 40.1 | 50.2 | 70.4 | 71.7 | 76.3 | 73.5 | 64.3 | 55.3 | 47.4 | 39.0 | 54.9 |
| Monthly | 44.6 | 53.8 | 54.0 | 65.3 | 80.6 | 82.3 | 87.1 | 83.4 | 74.8 | 67.4 | 58.1 | 50.8 | 66.9 |
| Monthly Dew Point | 31.4 | 34.7 | 34.0 | 48.4 | 66.9 | 68.6 | 70.0 | | | 56.6 | | | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 77 | 96 | 86 | 97 | 99 | 101 | 104 | 104 | 92 | 90 | 83 | 81 | 104 |
| -Date | 14 | 22 | 5 | 19 | 29 | 20 | 7 | 3 | 10 | 17 | 5 | 11 | 7-Jul |
| Lowest | 14 | 12 | 16 | 35 | 56 | 54 | 73 | 67 | 44 | 38 | 31 | 19 | 12 |
| -Date | 8 | 4 | 9 | 7 | 1 | 9 | 25 | 20 | 28 | 23 | 26 | 20 | 4-Feb |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 623 | 359 | 366 | 97 | 0 | 0 | 0 | 0 | 17 | 46 | 240 | 442 | 2190 |
| Cooling | 0 | 43 | 32 | 115 | 488 | 525 | 690 | 577 | 318 | 131 | 41 | 6 | 2966 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 77 | 70 | | 82 | 86 | 89 | 86 | 91 | 94 | 89 | 91 | 85 | |
| 6:00 PM | 52 | 43 | | 40 | 50 | 49 | 45 | 59 | 63 | 62 | 70 | 64 | |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 3 | 2 | 5 | 6 | 4 | 4 | 9 | 11 | 9 | 8 | 9 | 3 | 73 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 2 | 1 | 4 | 8 | 6 | 4 | 0 | 6 | 5 | 0 | 2 | 1 | 39 |
| Heavy Fog | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 5 | 12 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 3 | 0 | 6 | 18 | 24 | 28 | 22 | 4 | 1 | 0 | 0 | 106 |
| - 32° and below | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 18 | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 44 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.86 | 0.20 | 0.93 | 2.74 | 1.20 | 2.28 | 2.64 | 6.27 | 1.82 | 0.89 | 4.93 | 2.51 | 27.27 |
| Maximum in 24 h | 0.45 | 0.16 | 0.71 | 1.61 | 0.58 | 1.36 | 1.12 | 1.63 | 0.99 | 0.50 | 2.20 | 1.90 | 2.2 |
| -Date | 17-18 | 2 | 27 | 4-5 | 30-31 | 4 | 12 | 23 | 18 | 27-28 | 24 | 15 | 10-11 Apr |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | 0.0 | | | | | | | | | | | | |
| Maximum in 24 h | 0.0 | | | | | | | | | | | | |
| -Date | | | | | | | | | | | | | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 12.0 | 11.7 | 12.8 | 12.9 | 14.9 | 9.3 | 9.5 | 8.4 | | 9.0 | 10.5 | 9.8 | |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 18 | 36 | 33 | 15 | 11 | 1 | 1 | 17 | 25 | 33 | 29 | 34 | 31 |
| Speed | 45 | 39 | 44 | 43 | 41 | 44 | 45 | 38 | 37 | 44 | 48 | 40 | 48 |
| -Date | 17 | 11 | 7 | 21 | 30 | 1 | 24 | 19 | 26 | 21 | 7 | 15 | 7-Sep |

## Waco

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 56.1 | 60.8 | 69.6 | 78.0 | 84.4 | 92.0 | 96.8 | 97.2 | 89.6 | 80.3 | 68.8 | 59.3 | 77.7 |
| Daily Minimum | 30 | 34.2 | 38.0 | 46.8 | 56.2 | 64.2 | 70.9 | 74.4 | 74.0 | 67.6 | 56.8 | 46.6 | 37.3 | 55.6 |
| Monthly | 30 | 45.2 | 49.4 | 58.2 | 67.1 | 74.3 | 81.5 | 85.6 | 85.6 | 78.6 | 68.5 | 57.7 | 48.3 | 66.7 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 54 | 88 | 96 | 100 | 101 | 102 | 109 | 108 | 112 | 106 | 101 | 92 | 91 | 112 |
| -Year | | 1971 | 1996 | 1971 | 1963 | 1985 | 1980 | 1986 | 1969 | 1985 | 1989 | 1988 | 1955 | Aug-69 |
| Lowest | 54 | -5 | 4 | 15 | 27 | 37 | 52 | 60 | 53 | 40 | 25 | 17 | -4 | -5 |
| -Year | | 1949 | 1985 | 1948 | 1975 | 1981 | 1964 | 1994 | 1992 | 1983 | 1993 | 1976 | 1989 | Jan-49 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 620 | 441 | 247 | 66 | 0 | 0 | 0 | 0 | 0 | 38 | 243 | 524 | 2179 |
| Cooling | 30 | 6 | 0 | 36 | 129 | 288 | 495 | 639 | 639 | 408 | 146 | 24 | 6 | 2816 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 30 | 77 | 76 | 73 | 75 | 79 | 75 | 68 | 67 | 75 | 75 | 78 | 77 | 75 |
| 6:00 PM | 30 | 61 | 56 | 51 | 53 | 56 | 51 | 44 | 43 | 52 | 56 | 62 | 63 | 54 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 3 | 4.5 | 5.0 | 9.0 | 4.5 | 3.5 | 2.5 | 2.0 | 2.5 | 3.0 | 4.0 | 0.0 | 1.0 | 3.5 |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | | |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 30 | 6.6 | 6.5 | 7.3 | 7.0 | 8.6 | 6.7 | 4.1 | 5.3 | 6.9 | 6.0 | 6.6 | 6.1 | 77.7 |
| Snow or Ice | 30 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.* | 0.6 |
| Thunderstorms | 53 | 1.3 | 2.5 | 3.8 | 5.6 | 8.1 | 5.9 | 4.2 | 4.3 | 4.0 | 3.1 | 2.1 | 1.5 | 46.4 |
| Heavy Fog | 53 | 3.0 | 2.1 | 1.2 | 0.8 | 0.7 | 0.2 | 0.0 | 0.0 | 0.2 | 0.8 | 1.9 | 2.6 | 13.5 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 30 | 0.0 | * | 0.4 | 1.5 | 7.5 | 22.1 | 28.4 | 28.5 | 17.6 | 4.2 | 0.1 | 0.0 | 110.3 |
| - 32° and below | 30 | 1.2 | 0.3 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 2.1 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 30 | 13.6 | 7.5 | 2.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | 1.9 | 9.7 | 35.0 |
| - 0° and below | 30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | * | * |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.65 | 2.09 | 2.33 | 3.19 | 4.58 | 3.28 | 1.99 | 1.68 | 3.52 | 3.36 | 2.43 | 1.86 | 31.96 |
| Maximum Monthly | 54 | 5.83 | 6.29 | 6.84 | 13.37 | 15.00 | 12.06 | 8.58 | 8.91 | 7.29 | 10.51 | 6.24 | 8.44 | 15.00 |
| -Year | | 1961 | 1992 | 1945 | 1957 | 1965 | 1961 | 1971 | 1974 | 1970 | 1984 | 1952 | 1991 | May-65 |
| Minimum Monthly | 54 | 0.03 | 0.17 | 0.04 | 0.12 | 0.65 | 0.27 | 0.00 | T | 0.00 | 0.00 | 0.13 | 0.04 | 0.00 |
| -Year | | 1971 | 1972 | 1956 | 1983 | 1988 | 1953 | 1993 | 1952 | 1956 | 1952 | 1970 | 1950 | Oct-52 |
| Maximum in 24 h | 54 | 2.24 | 3.96 | 3.17 | 5.09 | 7.18 | 4.21 | 4.49 | 4.80 | 4.57 | 5.72 | 4.26 | 4.56 | 7.18 |
| -Year | | 1961 | 1986 | 1990 | 1957 | 1953 | 1947 | 1973 | 1958 | 1957 | 1974 | 1952 | 1991 | May-53 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 0.8 | 0.5 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.* | 1.5 |
| Maximum Monthly | 53 | 7.0 | 4.8 | 1.0 | T | T | 0.0 | 0.0 | T | 0.0 | T | 2.4 | 2.0 | 7.0 |
| -Year | | 1949 | 1966 | 1987 | 1993 | 1989 | | | 1991 | | 1993 | 1993 | 1946 | Jan-49 |
| Maximum in 24 h | 53 | 7.0 | 4.8 | 1.0 | T | T | 0.0 | 0.0 | T | 0.0 | T | 2.4 | 2.0 | 7.0 |
| -Year | | 1949 | 1966 | 1987 | 1993 | 1989 | | | 1991 | | 1993 | 1993 | 1946 | Jan-49 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 33 | 10.8 | 11.3 | 12.5 | 12.2 | 10.9 | 10.6 | 10.3 | 9.6 | 9.3 | 9.6 | 10.4 | 10.4 | 10.7 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 3 | 47 | 39 | 44 | 43 | 58 | 53 | 45 | 45 | 55 | 44 | 48 | 40 | 58 |
| Direction | | 32 | 36 | 33 | 15 | 02 | 06 | 1 | 16 | 31 | 33 | 29 | 34 | 02 |
| -Year | | 1994 | 1996 | 1996 | 1996 | 1994 | 1994 | 1996 | 1995 | 1995 | 1996 | 1996 | 1996 | May-94 |

# Wichita Falls, Texas

Wichita Falls is located in the West Cross Timbers subdivision of the North Central Plains of Texas, about 10 miles south of the Red River and 400 miles northwest of the nearest portion of the Gulf of Mexico. The topography is gently rolling mesquite plain, and the elevation of the area is about 1000 feet.

This region lies between the humid subtropical climate of east Texas and a continental climate to the north and west. The climate of Wichita Falls Is classified as continental. It is characterized by rapid changes in temperature, large daily and annual temperature extremes, and by rather erratic rainfall.

The area lies in the path of polar air masses which move down from the north during the winter season. With the passage of cold fronts or northers in the fall and winter, abrupt drops in temperature of as much as 20°F to 30°F within and hour sometimes occur. While the area is subject to a wide range of temperature, winters are on the whole relatively mild. January, the coldest month, has an average temperature around 40°F. Sub-zero temperatures occur about once every five years.

The summers in Wichita Falls are generally of the continental climate type, characterized by low humidity and windy conditions. Temperatures over 100°F are frequent during the common periods of hot weather. July and August, the hottest months, have average temperatures in the middle 80s.

The normal rainfall is nearly 27" per year, but the distribution is erratic to such an extent that prolonged dry periods are common. Several lakes in the area provide water for domestic, industrial, and irrigation purposes. The greater part of the rainfall comes in the form of showers rather than general rains. Over 75% of the annual moisture occurs during the period from late March to mid November, but dry periods of three to four weeks are to be expected during this time almost every year. While the dry conditions materially affect agriculture in this region, complete crop failure seldom results. Moderate flooding along Holliday Creek and the Wichita

River, which run through the city, occur about once in each ten year period. Snowfall, measuring an inch or more, occurs on average only two days a year.

Wind speeds average over 11 mph, and southerly winds prevail. Rather strong winds are observed in all months. Even though strong, gusty winds occur frequently, severe duststorms are rare. Most severe dust observed in the area is blown in from the north and west.

The area around Wichita Falls enjoys excellent aviation weather. Flying activities are possible on all but a very few days of the year. Approximately 95% of the time the ceiling is 1000' or more with visibility of 3 miles or more.

## Wichita Falls 1996

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Daily Maximum | 53.5 | 63.5 | 65.0 | 76.9 | 91.9 | 95.4 | 98.6 | 91.6 | 82.6 | 75.5 | 62.0 | 60.1 | 76.4 |
| Daily Minimum | 25.6 | 33.5 | 35.1 | 46.3 | 66.1 | 69.0 | 74.3 | 71.3 | 62.3 | 51.7 | 39.8 | 32.2 | 50.6 |
| Monthly | 39.5 | 48.5 | 50.1 | 61.6 | 79.0 | 82.2 | 86.5 | 81.5 | 72.5 | 63.6 | 50.9 | 46.2 | 63.5 |
| Monthly Dew Point | 22.7 | 24.2 | 27.1 | 38.7 | 59.5 | 63.4 | 65.2 | 67.6 | 62.4 | 50.9 | | 30.5 | |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | |
| Highest | 76 | 93 | 87 | 91 | 101 | 106 | 110 | 106 | 96 | 86 | 81 | 81 | 110 |
| -Date | 13 | 22 | 14 | 19 | 22 | 20 | 7 | 4 | 10 | 20 | 5 | 10 | 7-Jul |
| Lowest | 11 | 3 | 15 | 36 | 48 | 56 | 67 | 65 | 46 | 40 | 25 | 12 | 3 |
| -Date | 19 | 4 | 9 | 6 | 1 | 9 | 24 | 13 | 28 | 23 | 27 | 19 | 4-Feb |
| **DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | |
| Heating | 783 | 491 | 476 | 148 | 2 | 0 | 0 | 0 | 16 | 103 | 419 | 579 | 3017 |
| Cooling | 0 | 17 | 20 | 53 | 443 | 522 | 672 | 518 | 247 | 67 | 2 | 1 | 2562 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | |
| 6:00 AM | 71 | 58 | 67 | 65 | 74 | | 74 | 87 | 90 | 84 | 85 | 74 | |
| 6:00 PM | 45 | 34 | 31 | 32 | 40 | | 39 | 57 | 62 | 58 | 69 | 50 | |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | |
| Sunrise-Sunset | | | | | | | | | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | |
| **NUMBER OF DAYS** | | | | | | | | | | | | | |
| Precipitation | 2 | 0 | 5 | 4 | 1 | 6 | 8 | 15 | 11 | 8 | 9 | 0 | 69 |
| Snow or Ice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thunderstorms | 0 | 1 | 1 | 5 | 4 | 10 | 9 | 7 | 7 | 3 | 4 | 0 | 51 |
| Heavy Fog | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 2 | 10 |
| TEMPERATURE | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | |
| - 90° and above | 0 | 2 | 0 | 1 | 23 | 23 | 27 | 19 | 3 | 0 | 0 | 0 | 98 |
| - 32° and below | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 |
| Minimum | | | | | | | | | | | | | |
| - 32° and below | 24 | 13 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 69 |
| - 0° and below | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | |
| Total | 0.06 | T | 2.33 | 0.08 | 0.18 | 1.89 | 1.77 | 5.49 | 5.00 | 1.10 | 3.77 | T | 21.67 |
| Maximum in 24 h | 0.05 | T | 1.79 | 0.05 | 0.18 | 0.98 | 0.94 | 1.46 | 0.76 | 0.55 | 1.41 | T | 1.79 |
| -Date | 1 | 27+ | 26-27 | 21-22 | 13 | 16 | 24 | 29 | 26-27 | 20-21 | 23-24 | 31+ | 26-27 Mar |
| SNOW,ICE,HAIL | | | | | | | | | | | | | |
| Total | | T | | | | | | | | | | T | |
| Maximum in 24 h | | T | | | | | | | | | | T | |
| -Date | | 16+ | | | | | | | | | | 17 | |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | |
| Average Speed | 13.9 | 12.3 | 14.5 | 14.4 | 16.1 | 10.3 | 11.3 | 9.3 | 8.6 | 11.8 | 12.3 | 12.2 | 12.3 |
| PEAK GUST | | | | | | | | | | | | | |
| Direction | 32 | 36 | 25 | 19 | 15 | 34 | 33 | 35 | 33 | 17 | 2 | 2 | 33 |
| Speed | 49 | 47 | 52 | 40 | 43 | 55 | 49 | 51 | 64 | 52 | 52 | 52 | 64 |
| -Date | 17 | 23 | 24 | 24+ | 24 | 3 | 24 | 3 | 23 | 20 | 24 | 17 | 23-Sep |

## Wichita Falls

## Normals, Means, and Extremes

| | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORMAL MEAN TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Daily Maximum | 30 | 52.0 | 57.2 | 66.4 | 75.8 | 83.3 | 91.5 | 97.2 | 95.9 | 86.8 | 76.9 | 64.2 | 54.9 | 75.2 |
| Daily Minimum | 30 | 27.6 | 32.1 | 40.6 | 50.3 | 59.1 | 68.0 | 72.7 | 71.4 | 63.9 | 52.2 | 40.6 | 30.8 | 50.8 |
| Monthly | 30 | 39.8 | 44.7 | 53.5 | 63.1 | 71.2 | 79.8 | 85.0 | 83.6 | 75.4 | 64.6 | 52.4 | 42.8 | 63.0 |
| **EXTREME TEMPERATURES (°F)** | | | | | | | | | | | | | | |
| Highest | 49 | 87 | 93 | 100 | 102 | 105 | 117 | 114 | 113 | 108 | 102 | 89 | 88 | 117 |
| -Year | | 1969 | 1996 | 1971 | 1972 | 1985 | 1980 | 1980 | 1964 | 1977 | 1979 | 1988 | 1954 | Jun-80 |
| Lowest | 49 | -5 | -8 | 8 | 24 | 36 | 51 | 54 | 53 | 38 | 25 | 14 | -7 | -8 |
| -Year | | 1966 | 1985 | 1989 | 1975 | 1979 | 1983 | 1970 | 1992 | 1989 | 1957 | 1950 | 1989 | Feb-85 |
| **NORMAL DEGREE DAYS (65°F BASE)** | | | | | | | | | | | | | | |
| Heating | 30 | 781 | 568 | 377 | 125 | 10 | 0 | 0 | 0 | 6 | 104 | 383 | 688 | 3042 |
| Cooling | 30 | 0 | 0 | 20 | 68 | 202 | 444 | 620 | 577 | 318 | 91 | 0 | 0 | 2340 |
| **AVERAGE RELATIVE HUMIDITY (%)** | | | | | | | | | | | | | | |
| 6:00 AM | 30 | 80 | 80 | 79 | 80 | 86 | 85 | 78 | 80 | 86 | 84 | 83 | 80 | 82 |
| 6:00 PM | 30 | 55 | 52 | 46 | 46 | 50 | 47 | 39 | 41 | 51 | 54 | 58 | 60 | 50 |
| **AVERAGE SKY COVER (TENTHS)** | | | | | | | | | | | | | | |
| Sunrise-Sunset | 2 | 6.0 | 6.0 | | 6.0 | 7.0 | 2.0 | 3.0 | 2.0 | | | | | |
| **SUNSHINE** | | | | | | | | | | | | | | |
| Percent of Possible | | | | | | | | | | | | | | |
| **MEAN NUMBER OF DAYS** | | | | | | | | | | | | | | |
| Precipitation | 30 | 4.4 | 5.4 | 6.1 | 6.8 | 8.6 | 6.6 | 4.8 | 6.1 | 6.9 | 6.0 | 4.9 | 5.3 | 71.9 |
| Snow or Ice | 30 | 0.6 | 0.8 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 2.1 |
| Thunderstorms | 52 | 0.9 | 1.4 | 3.4 | 5.3 | 9.1 | 7.1 | 5.3 | 5.4 | 4.1 | 3.3 | 1.6 | 0.9 | 47.8 |
| Heavy Fog | 52 | 2.1 | 2.1 | 1.0 | 0.7 | 0.6 | 0.2 | 0.1 | 0.1 | 0.5 | 1.0 | 1.4 | 2.0 | 11.8 |
| TEMPERATURE | | | | | | | | | | | | | | |
| Maximum | | | | | | | | | | | | | | |
| - 90° and above | 30 | 0.0 | * | 0.9 | 2.5 | 8.3 | 20.8 | 28.0 | 26.7 | 14.5 | 3.6 | 0.0 | 0.0 | 105.3 |
| - 32° and below | 30 | 3.6 | 1.7 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.8 | 7.3 |
| Minimum | | | | | | | | | | | | | | |
| - 32° and below | 30 | 21.6 | 14.4 | 6.3 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 6.3 | 17.9 | 67.4 |
| - 0° and below | 30 | 0.1 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 |
| **PRECIPITATION (INCHES)** | | | | | | | | | | | | | | |
| Normal Total | 30 | 1.04 | 1.46 | 2.21 | 3.01 | 4.07 | 3.52 | 1.72 | 2.48 | 3.82 | 2.74 | 1.54 | 1.29 | 28.90 |
| Maximum Monthly | 52 | 4.48 | 4.55 | 5.38 | 8.50 | 13.22 | 8.60 | 11.86 | 7.61 | 10.23 | 7.86 | 5.69 | 6.93 | 13.22 |
| -Year | | 1968 | 1990 | 1990 | 1957 | 1982 | 1989 | 1950 | 1971 | 1980 | 1972 | 1957 | 1991 | May-82 |
| Minimum Monthly | 52 | 0.00 | T | T | 0.08 | 0.01 | 0.26 | T | T | T | T | 0.00 | T | 0.00 |
| -Year | | 1986 | 1996 | 1956 | 1996 | 1966 | 1980 | 1943 | 1943 | 1983 | 1952 | 1949 | 1996 | Nov-49 |
| Maximum in 24 h | 52 | 2.02 | 3.00 | 4.32 | 4.09 | 5.70 | 5.36 | 3.93 | 4.62 | 6.22 | 5.61 | 2.58 | 2.98 | 6.22 |
| -Year | | 1968 | 1981 | 1988 | 1967 | 1975 | 1985 | 1950 | 1971 | 1980 | 1959 | 1968 | 1991 | Sep-80 |
| SNOW,ICE,HAIL | | | | | | | | | | | | | | |
| Normal Total | 30 | 2.0 | 1.9 | 0.9 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.3 | 1.1 | 6.2 |
| Maximum Monthly | 52 | 11.9 | 11.8 | 10.9 | 0.8 | T | T | 0.0 | 0.0 | 0.0 | 1.0 | 3.9 | 7.1 | 11.9 |
| -Year | | 1966 | 1978 | 1989 | 1973 | 1990 | 1992 | | | | 1993 | 1957 | 1983 | Jan-66 |
| Maximum in 24 h | 52 | 8.1 | 4.5 | 9.7 | 0.8 | T | T | 0.0 | 0.0 | 0.0 | 1.0 | 3.9 | 5.6 | 9.7 |
| -Year | | 1985 | 1958 | 1989 | 1973 | 1990 | 1992 | | | | 1993 | 1957 | 1983 | Mar-89 |
| **WIND (MILES PER HOUR)** | | | | | | | | | | | | | | |
| Mean Speed | 32 | 11.2 | 12.1 | 13.4 | 13.1 | 12.1 | 12.1 | 11.2 | 10.4 | 10.5 | 10.7 | 11.4 | 11.2 | 11.6 |
| PEAK GUST | | | | | | | | | | | | | | |
| Speed | 2 | 51 | 62 | 52 | 53 | 56 | 55 | 74 | 52 | 64 | 52 | 52 | 52 | 74 |
| Direction | 2 | *31* | *27* | 25 | *36* | *4* | 34 | *27* | *4* | 33 | 17 | 2 | 2 | *27* |
| -Year | | 1994 | 1994 | 1996 | 1994 | 1994 | 1996 | 1994 | 1994 | 1996 | 1996 | 1996 | 1996 | Jul-94 |

# CHAPTER 5

# EXTREME VALUES

This chapter lists some of the extremes which occurred in the state of Texas during 1996. This is broken up into two sections: extreme values of temperature, precipitation, and snowfall for each month, and new monthly records set at first-order stations during the year.

Tables 7 through 9 list the data pertaining to the first section. The temperature, precipitation, and snowfall extremes include all available first-order, second-order, and cooperative stations.

Table 10 lists new or tied monthly records, in temperature, precipitation, and snowfall, for all of the first-order stations.

The year of 1996 was most significant with regards to extreme values in the categories of temperature and precipitation. There were only three first-order stations which did not set any new records during the year; Midland-Odessa broke the most records (6) of the 18 stations. The highest daily temperature for the month and the lowest monthly precipitation values were the most frequently broken records in 1996 (previous extreme values were eclipsed 17 times in both categories). The number of stations receiving no monthly precipitation exceeded 130 in both the first and last months of the year, showing the widespread affect of the drought on Texas.

Table 7. Monthly extremes of temperature during 1996.

| | HIGHEST TEMPERATURE | LOWEST TEMPERATURE |
|---|---|---|
| **January** | **93°F** | **-3°F** |
| | La Joya (Hidalgo) - 24th | Stratford (Sherman) - 30th |
| **February** | **102°F** | **-13°F** |
| | Falcon Dam (Starr) - 21st | Perryton (Ochiltree) - 3rd |
| | La Joya (Hidalgo) - 21st | |
| **March** | **100°F** | **-2°F** |
| | Rio Grande City 1SE (Starr) - 25th | Perryton (Ochiltree) - 8th |
| **April** | **110°F** | **20°F** |
| | Langtry (Val Verde) - 26th | Lipscomb (Lipscomb) - 6th |
| **May** | **115°F** | **31°F** |
| | Boquillas Ranger Stn (Brewster) - 23rd | Lipscomb (Lipscomb) - 1st |
| | Heath Canyon (Brewster) - 23rd | |
| **June** | **114°F** | **44°F** |
| | Heath Canyon (Brewster) - 21st | Lipscomb (Lipscomb) - 9th |
| | Castolon (Brewster) - 21st, 22nd | |
| | Boquillas Ranger Stn (Brewster) - 21, 22 | |
| **July** | **111°F** | **52°F** |
| | Archer City (Archer) - 7th | Follett (Lipscomb) - 11th |
| | Bridgeport (Wise) - 7th | |
| | Henrietta (Clay) - 8th | |
| **August** | **111°F** | **53°F** |
| | Boquillas Ranger Stn (Brewster) - 4th | Dimmitt 2N (Castro) - 12th, 13th |
| | Heath Canyon (Brewster) - 4th | Pine Springs (Culberson) - 31st |
| **September** | **105°F** | **33°F** |
| | Rio Grande City 1SE (Starr) - 16th | Wink FAA (Winkler) - 29th |
| | Falcon Dam (Starr) - 17th | |
| | Boquillas Ranger Stn (Brewster) - 24th | |
| **October** | **98°F** | **19°F** |
| | Boquillas Ranger Stn (Brewster) - 11, 12 | Sierra Blanca 2E (Hudspeth) - 23rd |
| | Muleshoe Natl Wdlf Ref (Bailey) - 12th | |
| **November** | **99°F** | **10°F** |
| | Castolon (Brewster) - 7th | Follett (Lipscomb) - 25th |
| **December** | **92°F** | **-6°F** |
| | Santa Rosa 3WNW (Hidalgo) - 8th | Dalhart 6SW (Hartley) - 19th |
| | La Joya (Hidalgo) - 8th | |
| **Annual** | **115°F** | **-13°F** |
| | Boquillas Ranger Stn (Brewster) - 23 May | Perryton (Ochiltree) - 3 Feb |
| | Heath Canyon (Brewster) - 23 May | |

Table 8. Monthly extremes of precipitation during 1996.
(Note: In this chart, 0.00" includes a trace.)

| | GREATEST PRECIPITATION | LEAST PRECIPITATION |
|---|---|---|
| **January** | **7.55"** | **0.00"** |
| | Kirbyville (Jasper) | 146 stations |
| **February** | **2.52"** | **0.00"** |
| | Wharton (Wharton) | 92 stations |
| **March** | **4.45"** | **0.00"** |
| | Bowie (Montague) | 58 stations |
| **April** | **7.14"** | **0.00"** |
| | Newton (Newton) | 62 stations |
| **May** | **8.04"** | **0.00"** |
| | Negley 4SSW (Red River) | 37 stations |
| **June** | **15.34"** | **0.00"** |
| | Baytown (Harris) | Langtry (Val Verde) |
| **July** | **10.17"** | **0.00"** |
| | Kanawha (Red River) | 19 stations |
| **August** | **16.22"** | **0.71"** |
| | Houston NWSO (Galveston) | Lajitas (Brewster) |
| **September** | **14.55"** | **0.38"** |
| | Davilla (Milam) | Levelland (Hockley) |
| **October** | **11.49"** | **0.00"** |
| | Brownsville WSO AP R (Cameron) | 18 stations |
| **November** | **15.29"** | **0.00"** |
| | Clarksville 2NE (Red River) | Port O Connor (Calhoun) |
| | | Richland Springs (San Saba) |
| **December** | **6.67"** | **0.00"** |
| | Ducas (Montgomery) | 136 stations |
| **Annual** | **62.63"** | **6.96"** |
| | Beaumont (Jefferson) | Candelaria (Presidio) |

Table 9. Monthly extremes of frozen precipitation during 1996.

| | GREATEST TOTAL SNOWFALL | GREATEST DEPTH OF SNOW/ICE |
|---|---|---|
| **January** | **6.5"**<br>Valentine 10 WSW (Presidio) | **5"**<br>Valentine 10 WSW (Presidio) - 2nd |
| **February** | **5.6"**<br>Pampa 2 (Gray) | **6"**<br>Pampa 2 (Gray) - 4th |
| **March** | **2.0"**<br>Borger (Hutchinson) | **6"**<br>Borger (Hutchinson) - 6th |
| **April** | **9.8"**<br>Anson (Jones) | **8"**<br>Anson (Jones) - 5th |
| **May - September** | **NONE**<br>- | **NONE**<br>- |
| **October** | **4.0"**<br>Dalhart FAA (Dallam)<br>Friona (Parmer) | **2"**<br>Dalhart FAA (Dallam) - 21st<br>Spearman (Hansford) - 22nd<br>Hereford (Deaf Smith) - 22nd |
| **November** | **11.0"**<br>Follett (Lipscomb) | **11"**<br>Darrouzett (Lipscomb) - 30th |
| **December** | **15.0"**<br>Miami (Roberts) | **11"**<br>Spearman (Hansford) - 1st |

Table 10. New (or tied) monthly temperature, precipitation, and snowfall records set at first-order stations in Texas during 1996.

| Station | Month | Parameter | Value | Length of Record |
|---|---|---|---|---|
| **Abilene** | February | Highest Temperature | 93°F | 57 |
| | February | Lowest Monthly Precipitation | 0.04" | 57 |
| | April | Maximum Monthly Snowfall | 9.3" | 57 |
| | April | 24-hour Maximum Snowfall | 9.3" | 57 |
| | December | Lowest Monthly Precipitation | Trace | 57 |
| **Amarillo** | April | Lowest Monthly Precipitation | Trace | 55 |
| | May | Highest Temperature | 103°F | 56 |
| | July | Maximum Monthly Snowfall | Trace | 55 |
| **Austin** | February | Highest Temperature | 99°F | 55 |
| **Brownsville** | March | Lowest Monthly Precipitation | Trace | 57 |
| | June | Lowest Monthly Precipitation | 0.01" | 57 |
| | October | 24-hour Maximum Precipitation | 10.53" | 57 |
| **Dallas** | February | Highest Temperature | 95°F | 43 |
| | May | Lowest Monthly Precipitation | 0.95" | 43 |
| **Del Rio** | January | Lowest Monthly Precipitation | Trace | 34 |
| | February | Highest Temperature | 99°F | 34 |
| | July | Highest Temperature | 108°F | 34 |
| **El Paso** | March | Lowest Monthly Precipitation | Trace | 57 |
| | May | Lowest Monthly Precipitation | 0.00" | 57 |
| **Houston** | March | Lowest Monthly Precipitation | 0.12" | 27 |
| | May | Highest Temperature | 99°F | 27 |
| | August | Highest Monthly Precipitation | 10.58" | 27 |
| **Lubbock** | February | Highest Temperature | 87°F | 50 |
| | May | Highest Temperature | 105°F | 50 |
| | November | Highest Temperature | 88°F | 50 |
| **Midland - Odessa** | February | Lowest Monthly Precipitation | Trace | 49 |
| | April | Highest Temperature | 101°F | 49 |
| | April | Maximum Monthly Snowfall | 2.0" | 49 |
| | April | 24-hour Maximum Snowfall | 2.0" | 43 |
| | November | Highest Temperature | 90°F | 49 |
| | December | Lowest Monthly Precipitation | Trace | 49 |

Table 10 (continued).

| Station | Month | Parameter | Value | Length of Record |
|---|---|---|---|---|
| **San Angelo** | February | Highest Temperature | 97°F | 49 |
| | August | 24-hour Maximum Precipitation | 4.67" | 49 |
| **San Antonio** | January | Lowest Monthly Precipitation | Trace | 54 |
| | February | Highest Temperature | 100°F | 55 |
| | April | Highest Temperature | 101°F | 55 |
| **Shreveport** | February | Lowest Monthly Precipitation | 0.64" | 44 |
| **Waco** | February | Highest Temperature | 96°F | 54 |
| **Witchita Falls** | February | Highest Temperature | 93°F | 49 |
| | February | Lowest Monthly Precipitation | Trace | 52 |
| | April | Lowest Monthly Precipitation | 0.08" | 52 |
| | December | Lowest Monthly Precipitation | Trace | 52 |

NO NEW RECORDS set in Corpus Christi, Port Arthur or Victoria
*Snowfall records include Ice, Pellet, and Hail measurements*