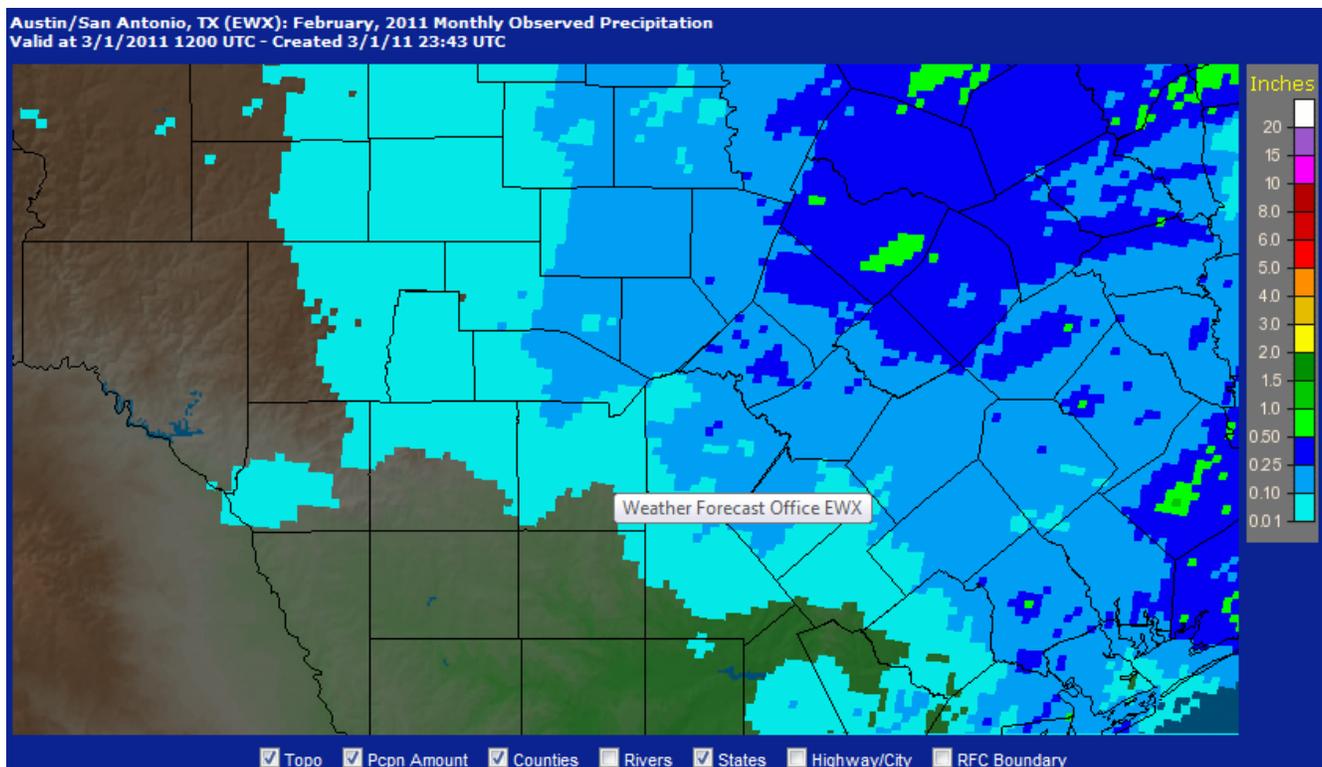


February 2011 Weather in Review

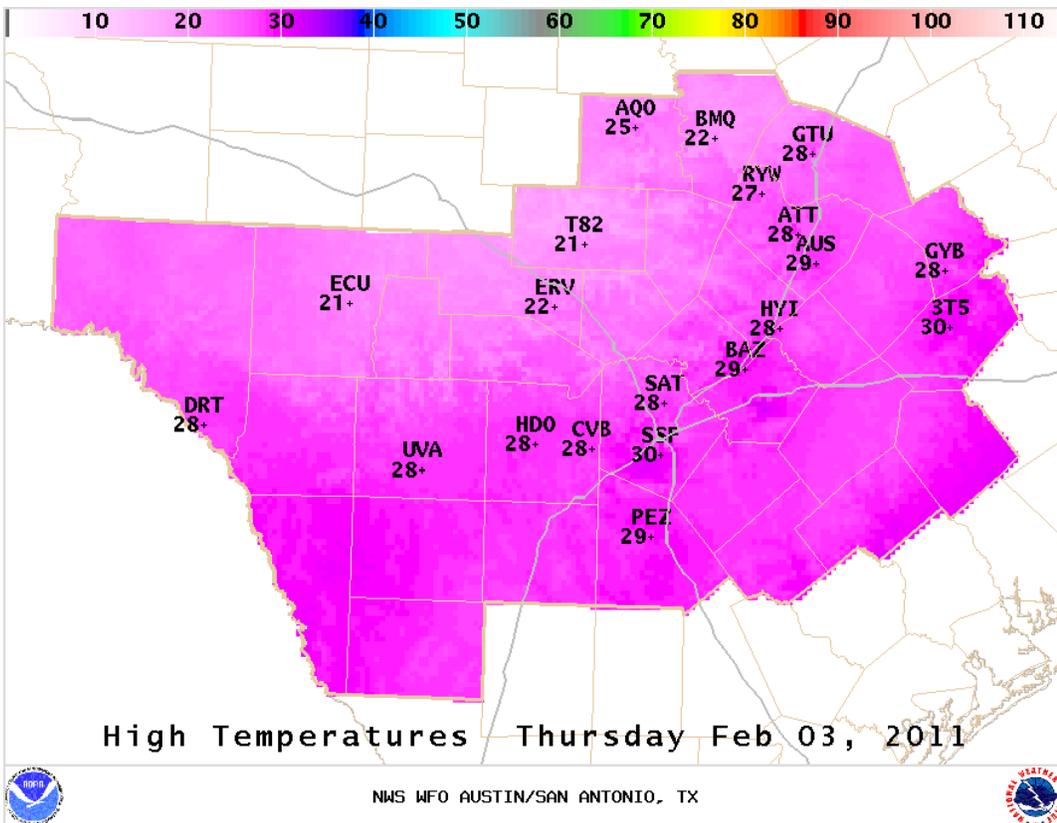
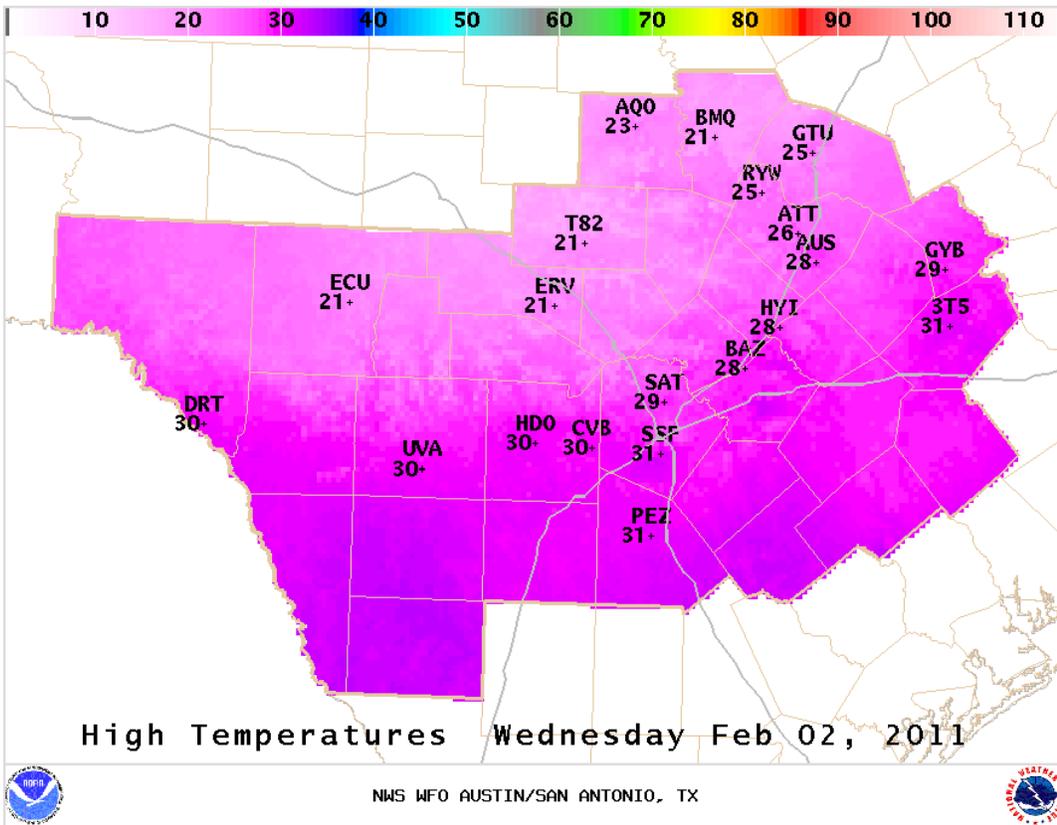
Precipitation in February 2011 returned to the dry pattern that was in place from October to December 2010. Precipitation in January 2011 was wetter than usual east of a Georgetown to Austin to San Antonio to Pleasanton line, while west of this line it was less than average. Dry conditions returned in February 2011, continuing the trend that was in place from October to December 2010. February 2011 was the 11th driest February at Del Rio since 1906; a tie with February 1917 for the 21st driest at San Antonio since 1871; the 18th driest February at Austin Mabry since 1856; and the 9th driest at Austin Bergstrom since 1943. Although the storm track came further south from late December through January, it began to drift to the north in February. After mild conditions January 30 and 31, much colder conditions came February 1st, when temperatures fell markedly in wake of an Arctic Cold Front. The cold weather stayed around through the morning of February 5th, and then warmed quickly to the 60s on the afternoon of the 5th, after highs were in the 20s and 30s earlier in the week. Colder weather returned the 9th to the 11th, followed by a long warming trend the 12th to the 28th, which brought the warmest highs since October and November to the area February 24 and February 27.

The image below shows how dry February 2011 was. The west part of South Central Texas had very little rain.



After unseasonably warm days January 30 and 31 with highs in the 70s to low 80s, much colder weather came February 1st of 2011 with an arctic cold front. Highs February 1st were in the 20s to low 30s across the Hill Country to the 30s and 40s over adjacent parts of South Central Texas. The cold persisted through Friday the 4th to the early morning of Saturday the 5th. Highs in the low to mid 20s over the Hill Country to the 20s to low 30s over adjacent parts of South Central Texas came the 2nd and 3rd. Record low maximums for February 2nd and February 3rd were

established at Austin, Del Rio, and San Antonio on the 2nd and 3rd. The maps below show the cold highs on February 2nd and 3rd over South Central Texas.



The night of the 3rd to early morning of the 4th brought a relatively uncommon event to South Central Texas, with a mix of freezing drizzle, sleet and then snow. These events come about every 2 to 4 years, depending on the chaotic trends that come from an unlimited number of global weather patterns from year to year. The first winter precipitation event of the winter and since February 23rd of 2010 came the night of the 3rd to the early morning of the 4th. The ingredients of a winter precipitation event came together, when a fast moving disturbance from the west combined with enough moisture and below freezing atmospheric conditions, to initially produce freezing drizzle. This was followed by sleet and snow.

The snow that came the night of the 3rd to early morning of the 4th is listed below, measured in inches, for February 3rd-4th, 2011.

Del Rio.....Trace Feb. 3, 2011 and Feb. 4, 2011
New Braunfels.....0.2 Feb. 4, 2011
Austin Mabry.....0.9 Feb. 4, 2011 - broke record daily of 0.5 Feb. 4, 1906
Austin Bergstrom...0.6 Feb. 4, 2011 - established record daily snow for Feb. 4th
San Antonio.....0.4 Feb. 4, 2011 - tied record daily of 0.4 Feb. 4, 1923
Leander.....1.25 Feb. 4, 2011
Georgetown.....1 to 2 Feb. 4, 2011
Pflugerville.....1.5 Feb. 4, 2011

The last time that measurable snow was observed at Austin, Del Rio and San Antonio is listed below before this winter season.

Austin Mabry.....Feb 23, 2010.....0.6 inches
Austin Bergstrom.....Feb 23, 2010.....0.3 inches
Del Rio.....Jan 16, 2007.....0.8 inches
San Antonio.....Feb 13/14, 2004...0.7 inches

The cold brought many more hours than usual of below freezing conditions. Temperatures fell below freezing Tuesday, February 1st through Friday morning, February 4th. Although they were below freezing longer than usual, they were far short of the record number of hours below freezing. At Austin Mabry it was below freezing around 69 1/2 hours, from 234 pm Feb. 1 to Noon on Feb. 4. At Del Rio it was below freezing around 63 hours, from 8 pm Feb. 1 to 11 am on Feb. 4. At San Antonio it was below freezing around 65 hours, from 6 pm Feb. 1 to 11 am on Feb 4.

As the layer of arctic air was moved east Saturday the 5th, much warmer afternoons followed the weekend of February 5th and 6th. Afternoon highs rose to the 60s on February. 5, after a freeze in the early morning hours. After lows at most locations near and below freezing again in the early morning of the 6th, afternoon highs the 6th rose to the 60s to near 70 across the Hill Country to the 70s across adjacent parts of South Central Texas. At Hondo after a low of 25 early Sunday morning the 6th, the high on Sunday the 6th rose to 77.

The mild weather continued Monday the 7th and Tuesday the 8th. Clouds increased the afternoon and evening of Tuesday the 8th, in advance of a fast moving cold front. This fast moving cold front brought much colder conditions in the early morning hours of February 9th.

The swift speed of the February 9th, 2011 cold front was similar to a fast moving cold front that came to the area 30 years ago on nearly the same day. On Tuesday, February 10, 1981, a fast

moving arctic cold front swept across South Central Texas in the late afternoon and evening, causing temperatures to fall rapidly from the 70s February 10, 1981 to the teens and near 20 the next morning on February 11, 1981. The daily lows of February 11, 1981 at Austin Mabry, Del Rio, and San Antonio are still record daily lows for February 11th.

The list below shows the highs on February 10, 1981 and the highs and lows the next day on February 11, 1981.

Location	Daily high Feb. 10, 1981	High and Low Feb. 11, 1981
Austin Mabry	75	35 and 17
Del Rio	79	47 and 21
San Antonio	78	40 and 17

Although the lows of 17 at Austin Mabry, 21 at Del Rio, and 17 at San Antonio February 11, 1981 are daily record lows, they are not the all time lows for February. The all-time lows for February at Austin and San Antonio came during the February 1899 Arctic outbreak, when the low was 4 at San Antonio and -1 at Austin on February 12, 1899. The February monthly low at Del Rio since December 1905 was 11 on February 2, 1951.

The list below shows the highs on Tuesday, February 8, 2011, and the highs and lows the next day on Wednesday, February 9, 2011.

Location	Daily High Feb. 8, 2011	High - Noon to 6 pm and Low Feb. 9, 2011
Austin Mabry	65	35 and 17
Del Rio	79	47 and 21
San Antonio	78	40 and 17

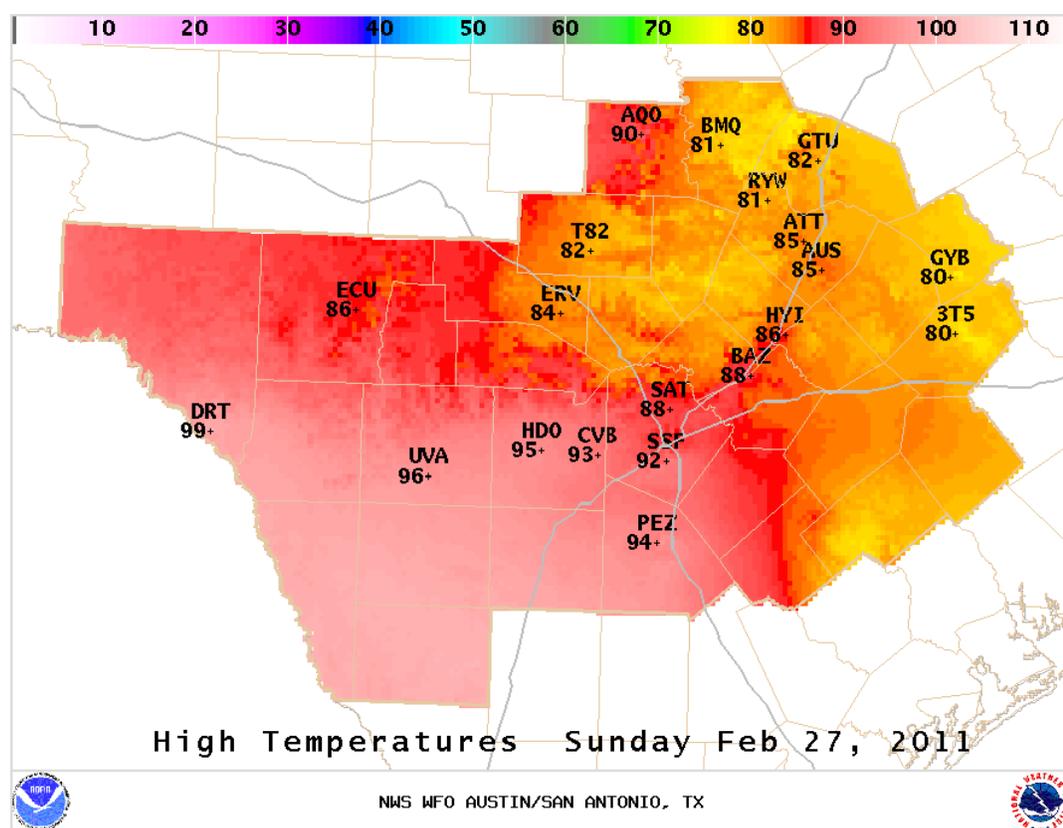
A brief winter precipitation event the morning of February 9th was the 2nd within a one week period. This type of frequency does not come often. The amounts of precipitation for February 9th were light. The last time that winter precipitation events came this frequently in February was February 1996, also during a La Nina winter like this year. Winter precipitation events also came frequently in January 1985, a La Nina winter, and in January and February of 1973, an El Nino winter.

A warming trend during the day on Saturday the 12th was similar to the previous weekend, with highs rising to the 60s after a hard freeze in the morning, when lows were in the teens and 20s across most of the Hill Country to the 20s over adjacent parts of South Central Texas. A few high elevations across the Hill Country had lows in the low to mid 30s, contrasted to valleys where lows were in the teens and 20s.

The coldest lows in February 2011 at Austin Mabry was 17 on Feb. 2, 2011; 16 at Austin Bergstrom on Feb. 11 and 12; 13 at Burnet on Feb. 2; 19 at Del Rio on Feb. 5; 13 at Fredericksburg on Feb. 2; 15 at Hondo on Feb. 4 and 10; 14 at Kerrville on Feb. 2 and Feb. 5; 19 at New Braunfels on Feb. 10 and 11; 19 at San Antonio on Feb. 2; 22 at San Antonio Stinson on Feb. 2; and 17 at Uvalde on Feb. 5.

The warming trend gathered momentum from February 14th through February 28th. Numerous mornings of occasional drizzle or light rain and patchy fog were noted in mid to late February. A Pacific Front and disturbance moved across South Central Texas Thursday, February 24th in the similar way to December 24th; however, rainfall amounts February 24th were less. During the afternoon on Thursday, February 24th, warm conditions spread across the region from the west, causing afternoon highs to warm to the 80s to near 90. It was cooler the night of the 24th and not as warm during the day on Friday, February 25th.

Humidity returned quickly the night of the 25th through the day on Saturday the 26th, bringing a period of drizzle and light rain in the morning, similar to Saturday the 19th. Sunday the 27th began with clouds and drizzle, then turned sunny and unseasonably warm in the late morning and afternoon, with highs rising to the 80s across the north to east part of area to the 90s over the south to west part of South Central Texas. The image below shows the highs on February 27, 2011.



Highs on the 27th were the warmest since October 25th at Del Rio and San Antonio. The highs at Austin February 24th and 27th were the warmest at Austin since November 24, 2010. The high of 99 at Del Rio not only broke the daily record for February 27th, it tied the February monthly high of 99, previously seen on February 21, 1996 and February 25th, 2008. The weather pattern of February 27th, 2011 was similar to February 25, 2008, when a warm day came, followed by a cold front that brought cooler and windy conditions. Both events came in a La Nina winter. This also matched some of the patterns from the winter of 1970 to 1971, another La Nina winter. The cold front that came the night of the 27th to morning of the 28th brought wind gusts to between 30 and 50 mph. Afternoon highs the 28th were 10 to 20 degrees cooler than the day before.

February 2011 Summary

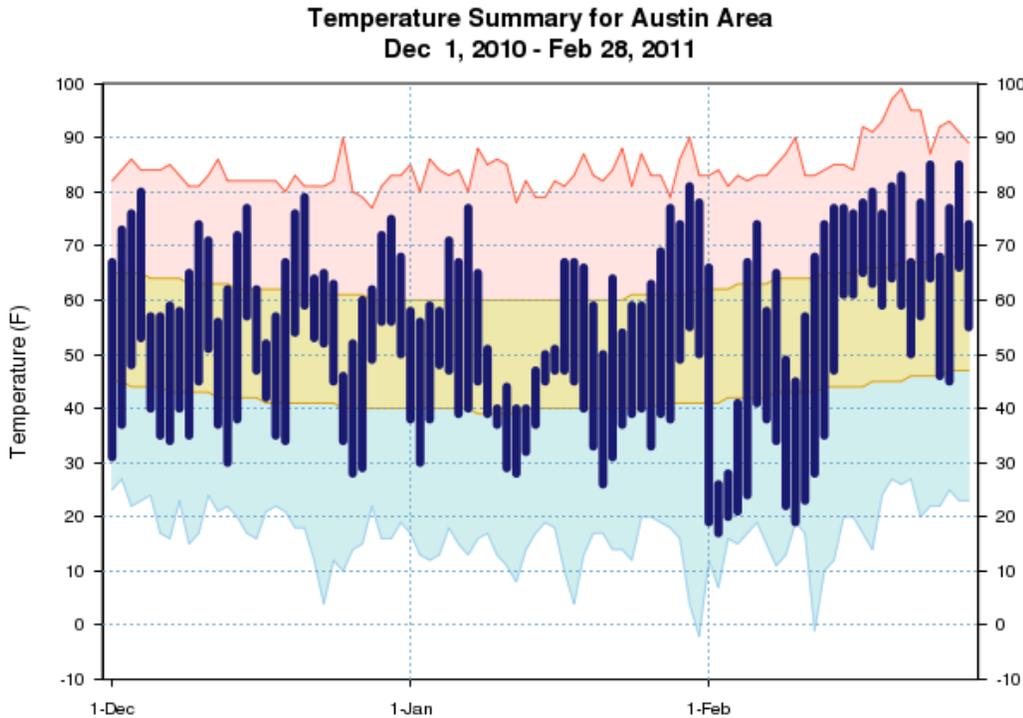
Location	Average Temperature	Average High	Average Low	Warmest/Coollest	Rainfall
Austin Mabry	55.1 +0.5	67.1	43.0	85 on 24th and 27th 17 on 2nd	0.48 -1.51
Austin Bergstrom	53.1 -2.4	67.3	38.8	85 on 24th and 27th 16 on 11th and 12th	0.64 -1.38
Burnet	49.6 -0.8	61.5	37.7	84 on 21st 13 on 2nd	0.35 -1.81
Del Rio	56.5 +0.4	70.3	42.7	99 on 27th 19 on 5th	0.15 -0.81
Hondo	55.8 +0.9	71.3	40.2	95 on 27th 15 on 4th and 10th	0.14 -1.31
New Braunfels	54.4 +1.6	68.2	40.6	88 on 27th 19 on 10th and 11th	0.48 -1.50
San Antonio International Airport	55.4 +0.7	68.2	42.6	88 on 27th 19 on 2nd	0.49 -1.26
San Antonio Stinson	57.4	70.6	44.3	92 on 27th 22 on 2nd	0.32

December 2010 to February 2011 continued to be drier than usual across South Central Texas. Rainfall of only 0.25 inches at Del Rio from December 2010 to February 2011 was the 4th driest December to February at Del Rio since December 1905. The west part of South Central Texas was much drier than the eastern parts of the area, where more rain came, especially in January. The storm track came further south the week of Sunday, December 19 to Saturday, December 25, and this trend continued through January 2011 to the early part of February. From around February 10 to 28, 2011, the storm track moved north and east again, repeating a trend similar to October through Mid-December 2010, when very dry conditions persisted. Rainfall at Del Rio was below normal in December, January and February. At Austin and San Antonio, January had rainfall above normal, while in December and February the rainfall was below normal.

The consistent passage of cold fronts from December 2010 to early February 2011 limited the duration and magnitude of warming trends, brought a few very cold periods and more freezes than usual, and helped winter precipitation events develop late February 3 to February 4 and again on February 9. The warming trend from February 12 to February 28 was the longest from December to February. The warmest and coldest temperatures from December 2010 to February 2011 came in the month of February. The table below summarizes some of these trends.

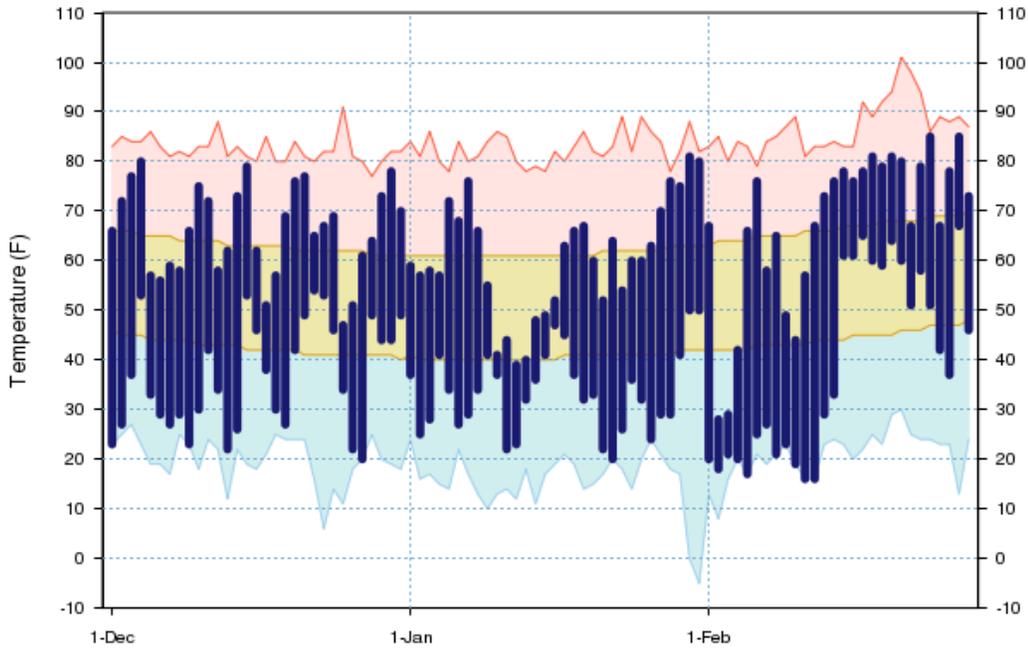
December 2010 to February 2011 Summary					
Location	Average Temperature	Average High	Average Low	Warmest/Coollest	Rainfall
Austin Mabry	53.0 +0.7	64.1	41.8	85 on Feb. 24th and 27th 17 on Feb. 2nd	4.19 -2.13
Austin Bergstrom	50.5 -2.7	64.6	36.3	85 on Feb 24th and 27th 16 on Feb. 11th and 12th	5.11 -1.65
Del Rio	53.7 +0.4	67.5	39.9	99 on Feb. 27th 19 on Feb. 5th	0.25 -2.03
San Antonio International Airport	53.2 +0.7	65.3	41.2	88 on Feb. 27th 19 on Feb. 2nd	3.78 -1.59

The charts below show the daily highs and lows from December 1, 2010 to February 28, 2011.



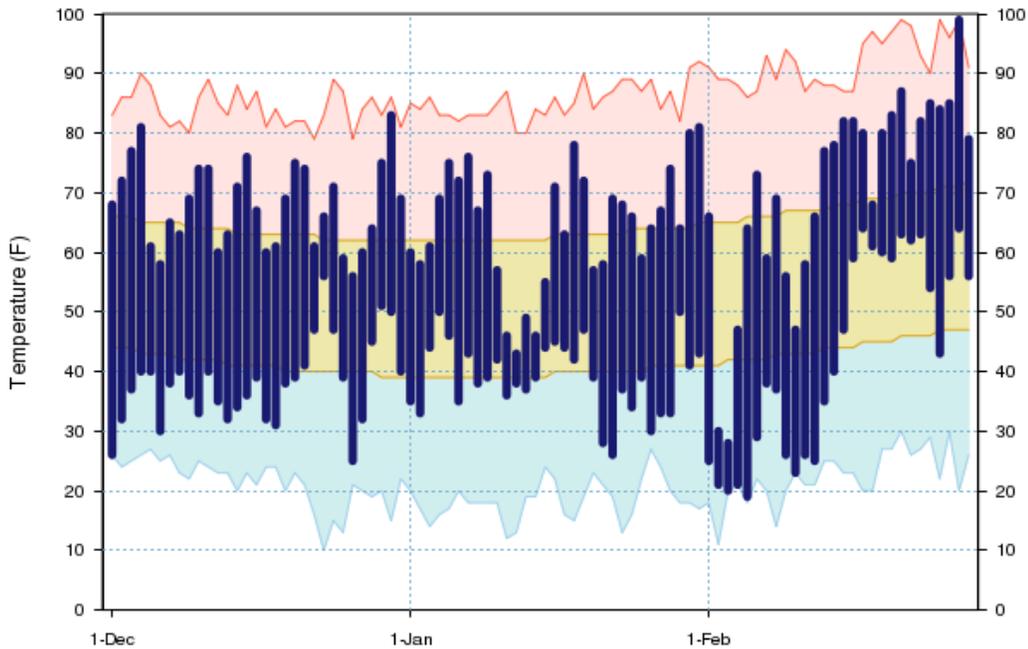
Observed daily maximum and minimum temperatures are connected by dark blue bars.
Area between normal maximum and minimum temperatures has tan shading.
Red line connects record high temperatures. Light blue line connects record low temperatures.

**Temperature Summary for Austin-Bergstrom Airport Area
Dec 1, 2010 - Feb 28, 2011**



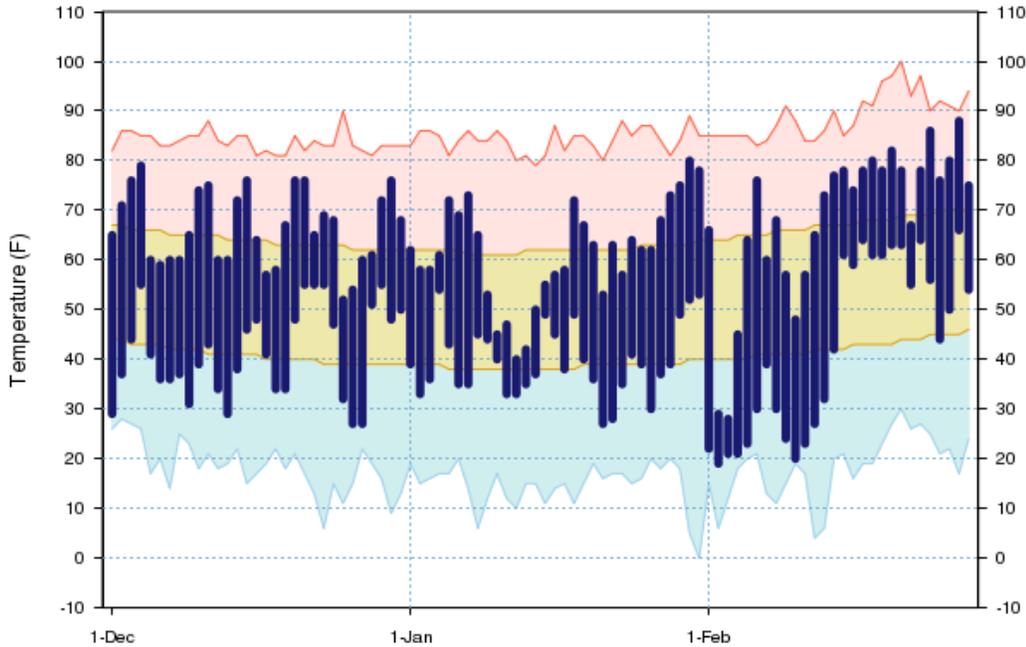
Observed daily maximum and minimum temperatures are connected by dark blue bars.
Area between normal maximum and minimum temperatures has tan shading.
Red line connects record high temperatures. Light blue line connects record low temperatures.

**Temperature Summary for Del Rio Area
Dec 1, 2010 - Feb 28, 2011**



Observed daily maximum and minimum temperatures are connected by dark blue bars.
Area between normal maximum and minimum temperatures has tan shading.
Red line connects record high temperatures. Light blue line connects record low temperatures.

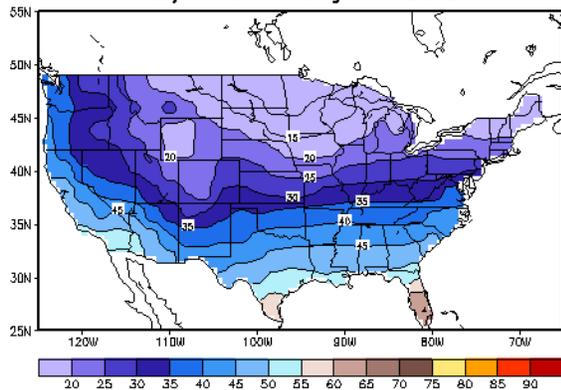
**Temperature Summary for San Antonio Area
Dec 1, 2010 - Feb 28, 2011**



Observed daily maximum and minimum temperatures are connected by dark blue bars.
 Area between normal maximum and minimum temperatures has tan shading.
 Red line connects record high temperatures. Light blue line connects record low temperatures.

The images below show the average temperature across the U.S. and the departure from normal for a 90 day period ending on February 28, 2011.

**Mean Temperature (F)
90-day mean ending Feb 28 2011**



**Mean Temp (F) Anomaly
90-day mean ending Feb 28 2011**

