

# Amarillo Summer Temperatures

All Time High: 108 on 6/24/1953, 6/24/1990, 6/27/1998, and 6/28/1998

FREQUENCY OF MAX TEMPERATURE EXTREMES (1971-2000)									
	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	ANN
90 +	0.1	0.7	4.0	12.8	19.9	16.5	7.0	0.8	61.8
95 +	0	*	1.6	5.6	9.3	6.2	2.1	0.1	24.9
100 +	0	0	0.3	2.2	1.7	0.7	0.3	0	5.2
105 +	0	0	0	0.5	0.1	0	0	0	0.6

\* Probability not zero but less than 0.1

MOST EXTREME TEMPERATURES BY MONTH									
	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	ANN
90 +	4 1907	6 1989	16 2006	29 1953	30 2001*	31 2000	19 1939	4 1991*	105 1953
95 +	2 1907	1 1989	13 1996	26 1953	27 1998	26 1943	15 2000	2 2000	69 2000
100 +	0	0	4 1996	13 1998	13 2001	9 1952*	5 2000	0	26 1953
105 +	0	0	0	4 1998*	2 1940	2 2003*	0	0	4 1998*

\* Last of multiple occurrences

1892-2008

Total years with 100 degrees or more: 85 (73%)

Total years without 100 degrees or more: 32 (27%)

Most consecutive years with 100 degrees or more: 19 from 1922-1940

Most consecutive years without 100 degrees or more: 4 from 1898-1901

Most consecutive days 90 degrees or more: 46 (7/7 thru 8/21/1934)

Most consecutive days 95 degrees or more: 30 (6/16 thru 7/15/1998)

Most consecutive days 100 degrees or more: 8 (6/12 thru 6/19/1924 AND 6/22 thru 6/29/1998)

Least 90 degree days: 21 in 1894

Least 95 degree days: 0 in 1904

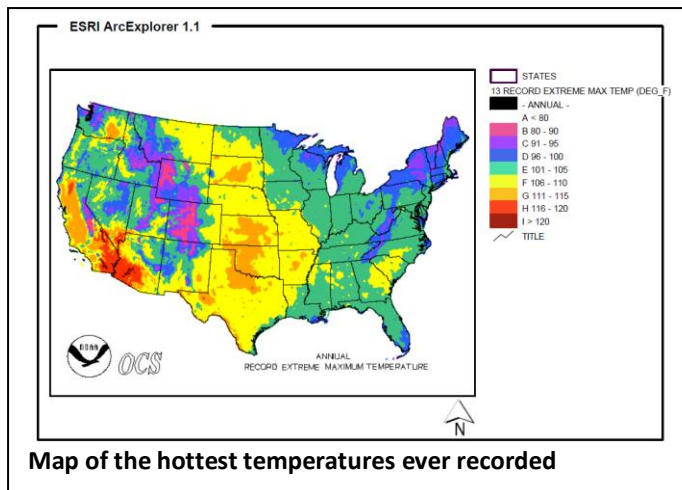
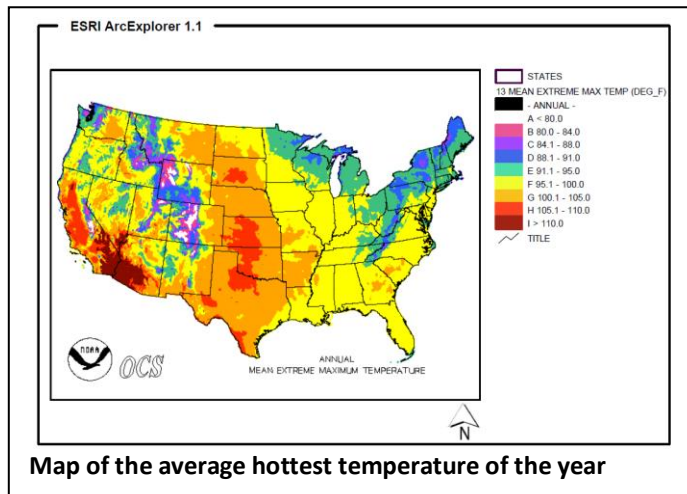
FIRST / LAST DATES						
	AVE FIRST	AVE LAST	EARLY FIRST	LATE FIRST	EARLY LAST	LATE LAST
85 +	4/09	10/16	2/01/1963	6/08/1897	9/10/1912	11/20/2007*
90 +	5/09	9/26	3/10/1989	6/23/1999*	8/14/1996	10/29/1950
95 +	5/31	9/01	3/19/1907	DNO 1904	DNO 1904	10/08/1934
100 +	June 21	July 30	5/15/1996	DNO 2002*	DNO 2002*	9/11/1910

\* Last of multiple occurrences

DNO = Did Not Occur

# Heat On and Off the Caprock

Extreme heat is more common off the Caprock than on the higher terrain. In fact, this area of western Kansas, western Oklahoma, and the eastern Texas Panhandle has some of the hottest temperatures in the United States outside of the deserts of the Southwest. The combination of low latitude, relatively low humidity, lower elevation (compared to areas to the west), and the availability of downsloping winds from the Rockies all combine to make extreme temperatures possible in this area. The map to the right shows the average hottest temperature of the year, with this region getting above 105 degrees on average each year.



The all time record high temperature in Amarillo is 108 degrees. But areas less than 100 miles to the east have observed temperatures above 110 to near 115 degrees. Amarillo is limited in heating by 3,700 feet of elevation and areas even further to the east are limited by greater average humidity. The map to the left shows the highest temperatures ever recorded, with an area of greater than 110 degree temperatures observed off the Caprock and west of the Ozarks.

Some 115 degree readings have also occurred within this region.

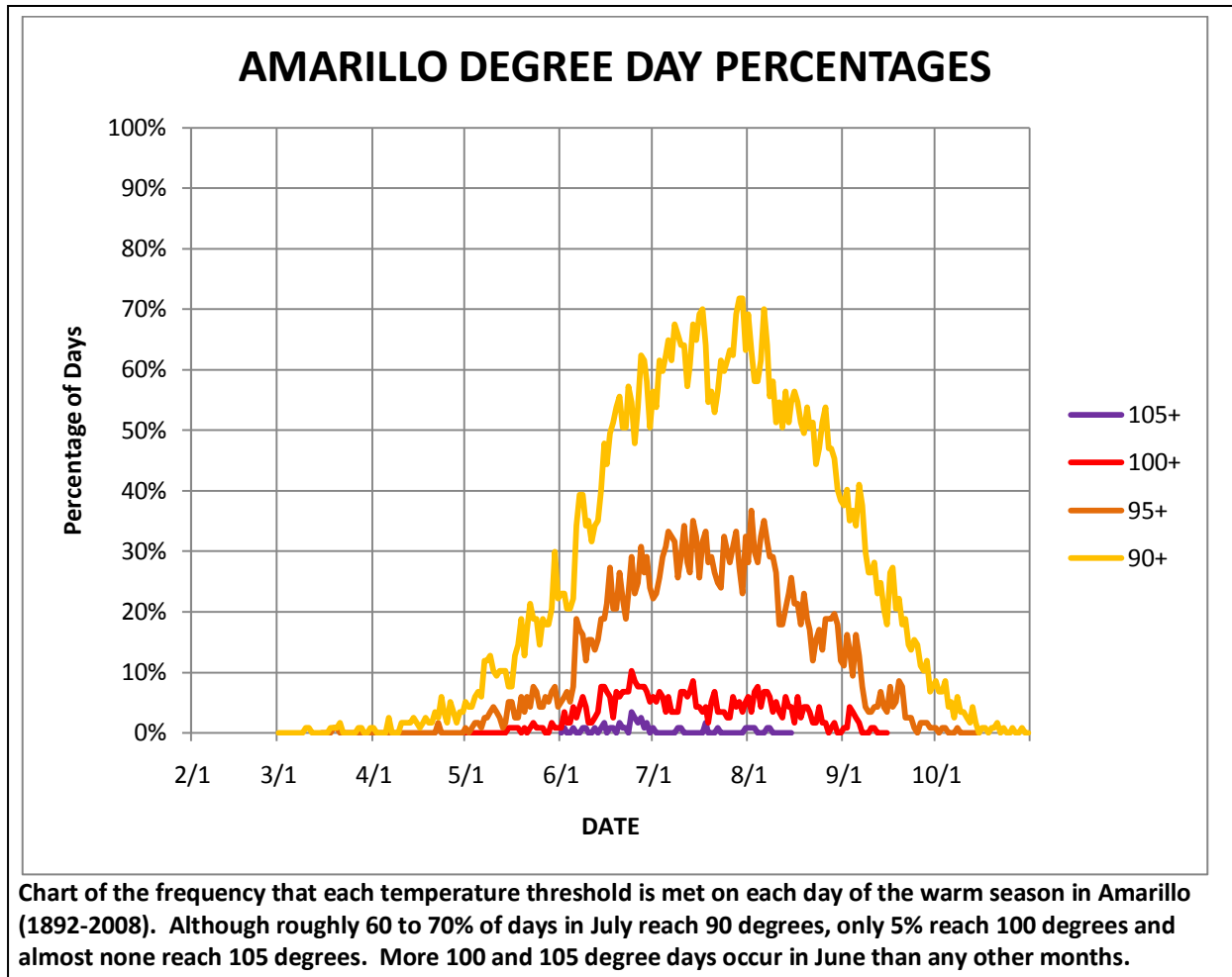
An interesting aspect to extreme temperatures on the Caprock in places such as Amarillo is that the really hot readings are much more common in June, despite the higher average temperatures in July and August. This is best shown through analyzing the distribution of 105 degree temperature readings. The table to the left shows the approximate 105 degree

105+ Temperatures		
	BEGIN	END
99%	June 2	August 8
95%	June 5	August 7
67%	June 15	July 22
50%	June 20	July 1

temperature season in Amarillo, with the table to the right showing the 90 degree temperature season. The median date of all 105 degree temperatures is June 25, with 50% of these

90+ Temperatures		
	BEGIN	END
99%	April 20	October 8
95%	May 11	September 23
67%	June 17	August 26
50%	June 23	August 16

readings occurring during the last ten days of June. This compares to a median date of July 22 for 90 degree temperatures, with half of 90 degree readings occurring across a much broader and more symmetrical range of late June through mid August. No 105 degree readings have been observed after August 8, despite average high temperatures remaining near 90 degrees through mid August.



Extremely hot temperatures are less likely later in the season in Amarillo due to the increased humidity on the higher terrain. Temperatures off the Caprock remain very warm, with extreme temperatures lasting about one month longer (into early fall occasionally) due to the lower elevation. A comparison of the temperature distributions at Amarillo and Shamrock, TX demonstrates this very well. The graph on this page charts the frequency at which each temperature threshold is met throughout the warm season at Amarillo. From this chart it can be seen that the peak of warm temperatures (90+ and 95+) occurs in late July and early August and is much more evenly distributed throughout the summer. But the peak of extreme temperatures (100+ and 105+) occurs much earlier in late June, with 105 degree heat not occurring after early August.

By comparison, the same chart for Shamrock, roughly 100 miles east of Amarillo, shows that warm temperatures (90+ and 95+) and extreme temperatures (100+ and 105+) both peak at

roughly the same time in mid to late July. Extreme 100 or 105 degree temperature readings have occurred as much as one month later in the year at Shamrock compared to Amarillo. This is primarily due to the lower terrain off the Caprock. Although humidity does increase slightly from June through August at Shamrock, the overall warming of the atmosphere that comes with the season compensates for the increased moisture and allows extreme temperatures to still be possible late in the season.

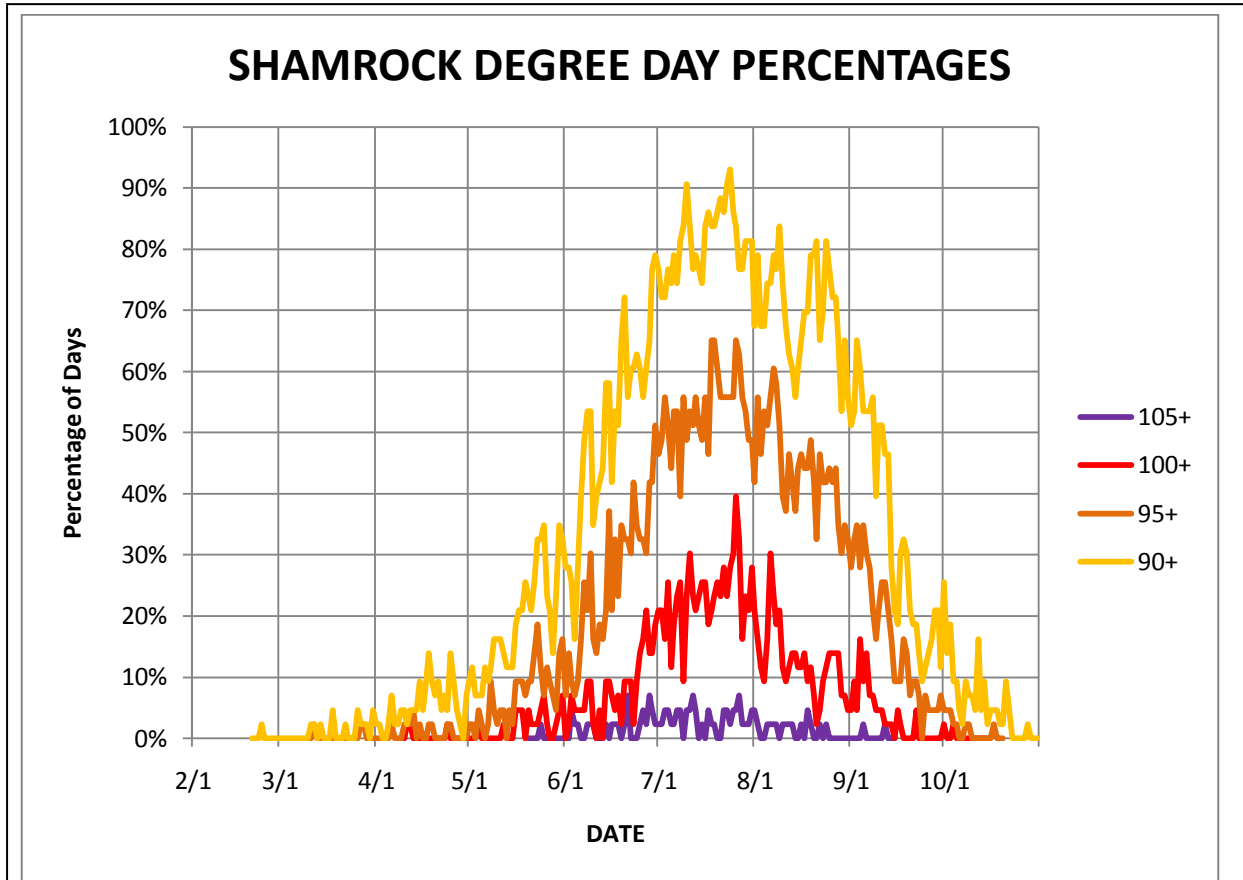


Chart of the frequency that each temperature threshold is met on each day of the warm season in Shamrock (1962-2008). Both 90 degree temperatures and extreme temperatures over 100 degrees peak during July.

Amarillo	105+	100+	95+	90+
Median	June 25	July 11	July 19	July 22
99%	6/2 – 8/8	5/17 – 9/6	5/8 – 9/23	4/20 – 10/8
95%	6/5 – 8/7	5/29 – 9/3	5/21 – 9/13	5/11 – 9/23
67%	6/15 – 7/22	6/17 – 8/10	6/20 – 8/18	6/17 – 8/26
50%	6/20 – 7/1	6/23 – 8/4	6/28 – 8/9	6/27 – 8/16

Shamrock	105+	100+	95+	90+
Median	July 12	July 22	July 24	July 23
99%	5/24 – 9/12	5/4 – 9/22	4/15 – 10/1	4/6 – 10/14
95%	6/3 – 8/24	5/24 – 9/8	5/20 – 9/18	5/2 – 9/29
67%	6/21 – 8/6	6/28 – 8/17	6/24 – 8/26	6/15 – 8/29
50%	6/28 – 7/30	7/5 – 8/7	7/3 – 8/16	6/27 – 8/19

Distribution tables to the left show the skewed nature of extreme temperatures in Amarillo compared to the more symmetric nature at Shamrock. All ranges at Shamrock are centered around mid July. Extreme values at Amarillo are skewed towards late June.