



Arizona Climate Summary

August 2012

Summary of conditions for July 2012

July 2012 Temperature and Precipitation Summary

July 1st – 16th: The beginning half of July included the first major monsoon rainfall days this year coinciding with well below normal high temperatures, as well as a stretch of very hot days in the lower deserts. July began with high pressure over north central Arizona keeping skies clear and temperatures elevated throughout most of the state. On the 4th, monsoon moisture made its way into southern Arizona and brought decent rainfall totals to many locations including Tucson AP, which received 0.78", Nogales AP at 0.92", Safford AP at 0.64" and Gila Bend AP at 0.24". High temperatures on the 4th were unseasonably low across most of the southern deserts, with a high of 92 at Phoenix Sky Harbor (-12°F from normal), a high of 92 in Blythe (-7°F from normal), and a high of 86 in Tucson (-11°F from normal). However, the short term relief from the heat only lasted up through the 6th. Conditions began to dry out and warm up as monsoon moisture moved from Arizona into New Mexico. By the 8th the high temperature in Phoenix was 110°F and high temperatures remained above 110°F at Sky Harbor through the 11th. Other notable high temperatures from the 6th-11th include 113°F in Gila Bend and 108°F in Kingman on the 10th, and 104°F in Page on the 11th. Monsoon moisture finally returned over Arizona from the 12th-16th bringing another round of showers and storms especially to the high country of northern Arizona as well as southern and western Arizona. Some of the most significant rainfall totals recorded from the 12th-16th were 1.46" at Prescott AP and 1.65" at Yuma AP on the 14th, 0.81" at Flagstaff AP and 1.12" at Petrified Forest NM on the 15th, and 2.26" at Sierra Vista AP on the 16th.

July 17th – 31st: Monsoon activity continued through the second half of July as high temperatures in the southern desert areas of Arizona remained below normal. From the 17th-31st, daytime highs remained below 110°F in Phoenix, Yuma, and Gila Bend with the help of increased moisture and cloudy days over southern desert areas. From the 20th-25th, high pressure remained to the east of Arizona into New Mexico and helped draw up moisture from Mexico. Many locations around the state received a fair share of precipitation from the 20th-25th, with some of the heaviest amounts falling on the 24th at Carefree (1.19"), Window Rock (0.65"), Bellemont (0.68"), Bisbee (1.14") and Payson (2.05"). By the last few days of July, the active monsoon pattern continued to bring more rain to western and northern Arizona including Payson (0.73" on 30th), Cottonwood (0.37" on 30th), Bullhead City (1.5" on 31st) and Navajo NM (0.72" on 31st).

In This Issue: Overview of July, graphs of the July daily maximum and minimum temperatures, precipitation, mean daily dew points for Flagstaff, Phoenix, and Tucson; July climate statistics, maps of mean monthly maximum and minimum temperatures, precipitation, dew points, wind speeds for July; and graphs of the mean July temperature and precipitation for the period of record for Tucson, Phoenix, and Flagstaff, graphs of the cumulative precipitation for the calendar year for Flagstaff, Phoenix, and Tucson. Climate calendars for Flagstaff, Phoenix, Tucson, Prescott, Winslow and Yuma, including daily and monthly normals and extremes, for each month of the year, can be downloaded directly from the State Climate website. See p. 18 of this report for calendar abbreviations.

Data are preliminary and are from the National Weather Service Forecast Offices in Flagstaff, Phoenix and Tucson.

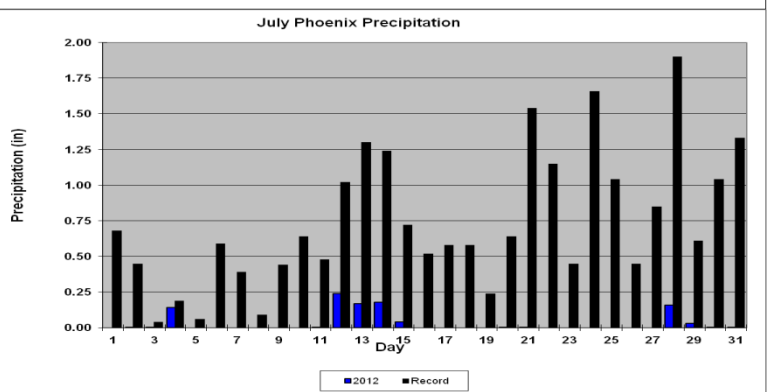
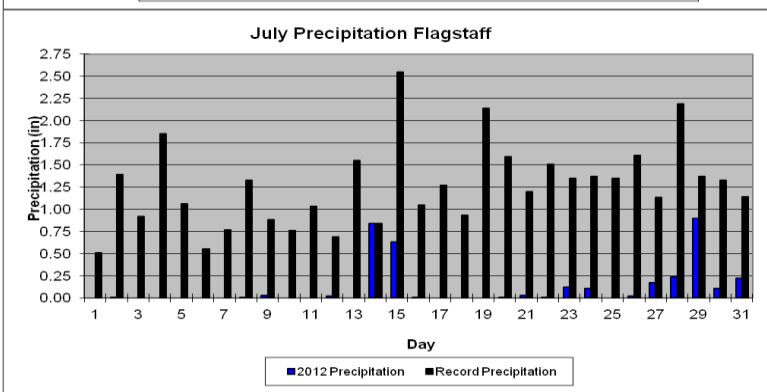
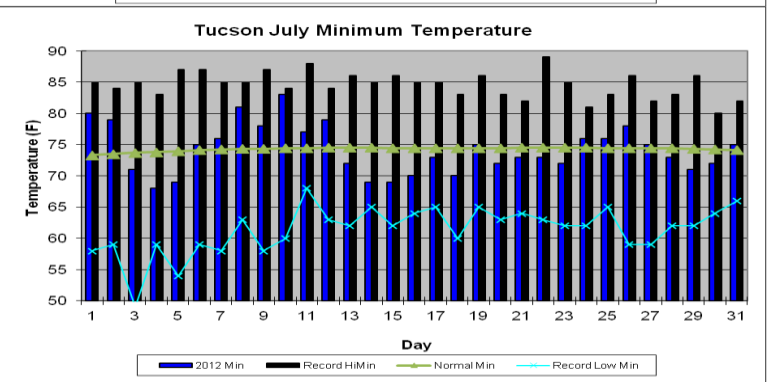
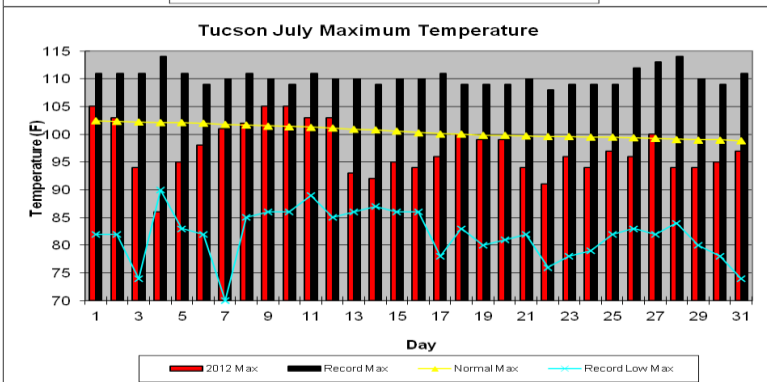
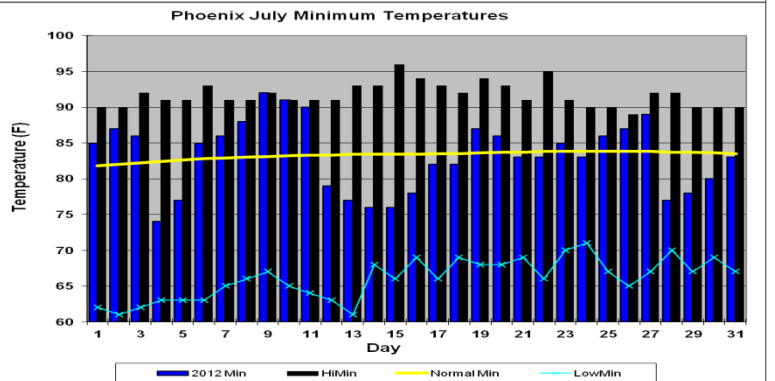
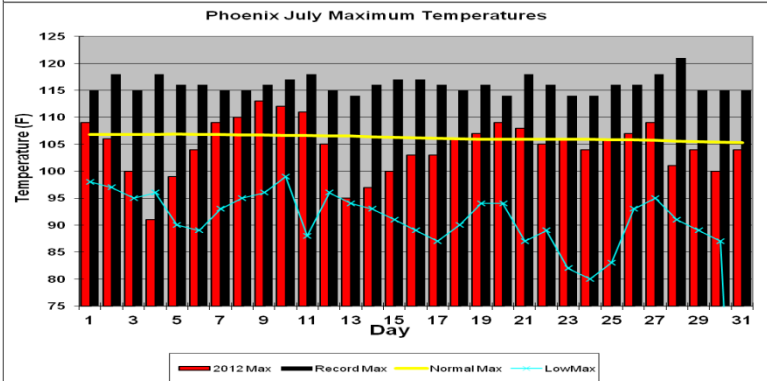
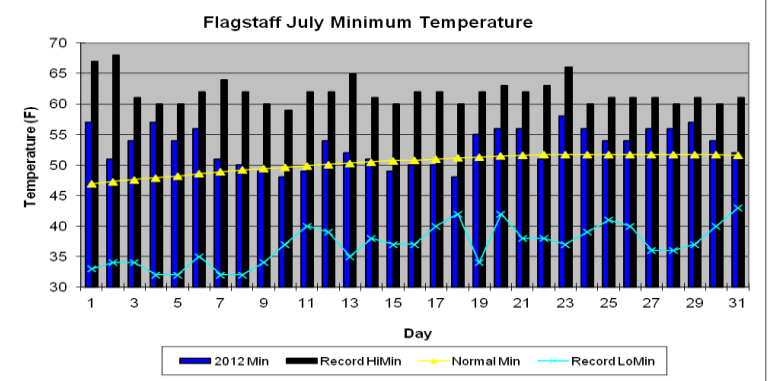
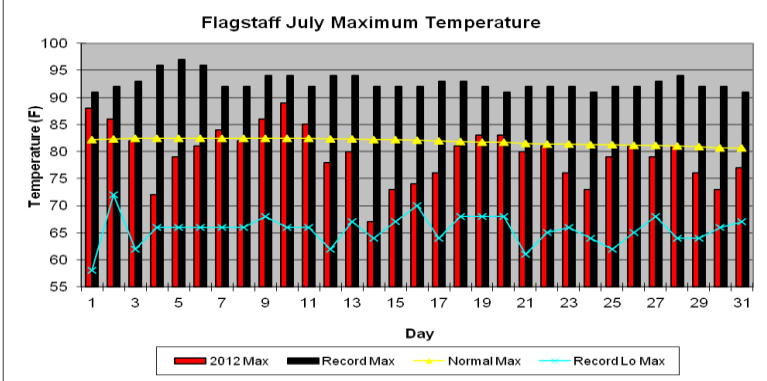
****Note:** The discrepancy between the Statewide Temperature and Precipitation values for Phoenix, Flagstaff and Tucson and the daily values in their graphs are due to the reporting times. Statewide Temperature and Precipitation values are taken at 5pm, while official daily records at the airports are taken from Midnight to Midnight.

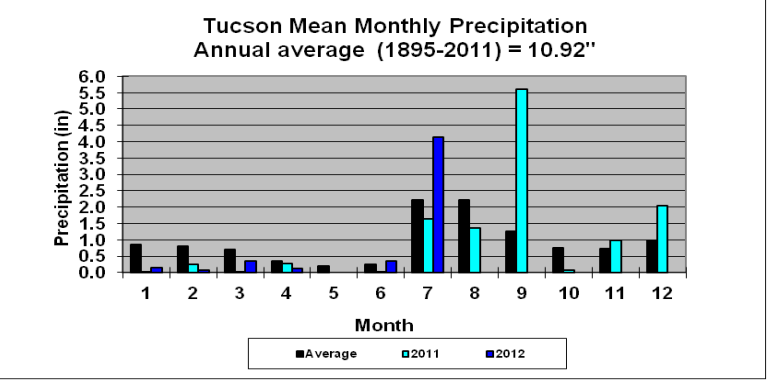
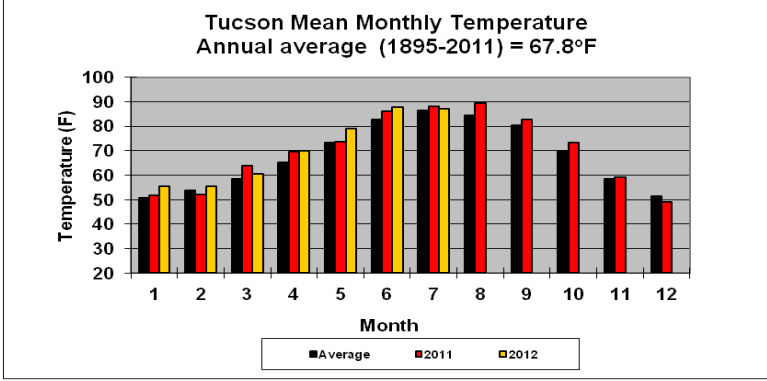
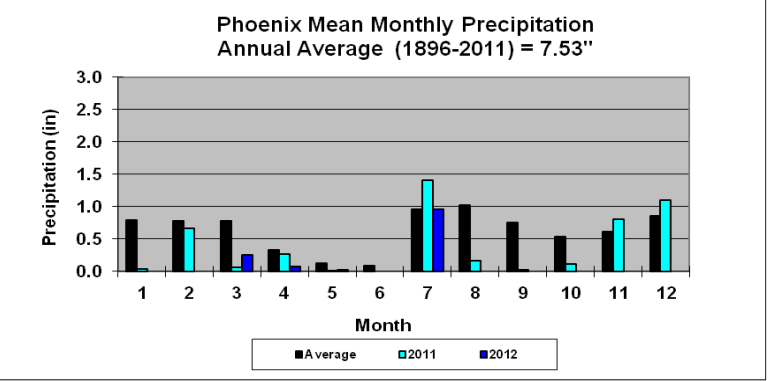
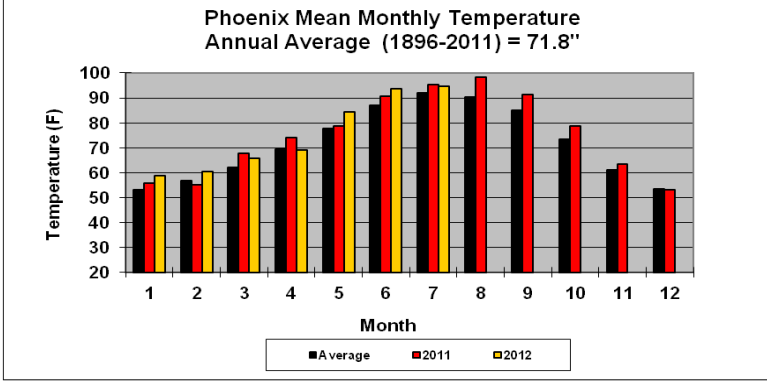
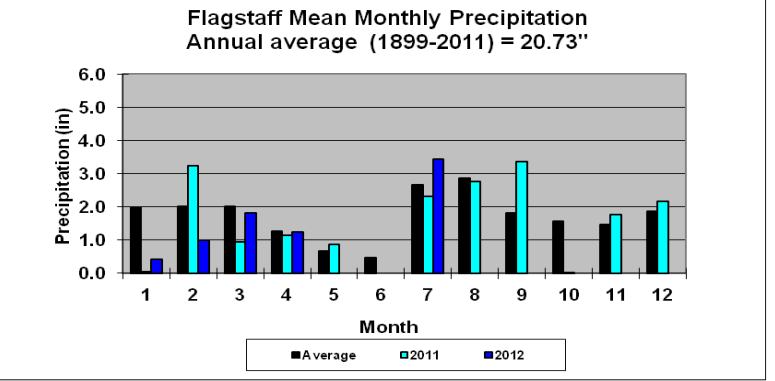
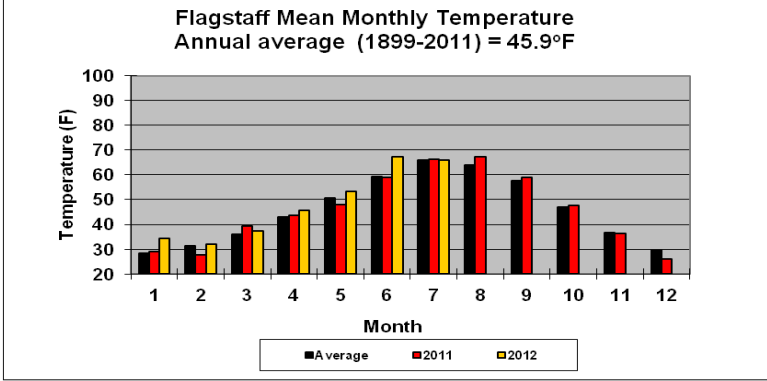
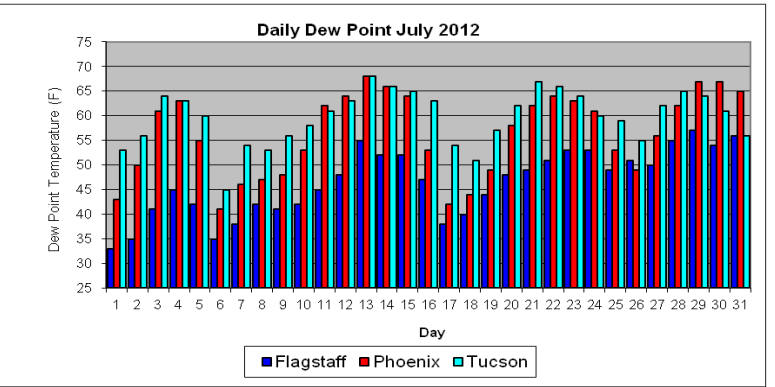
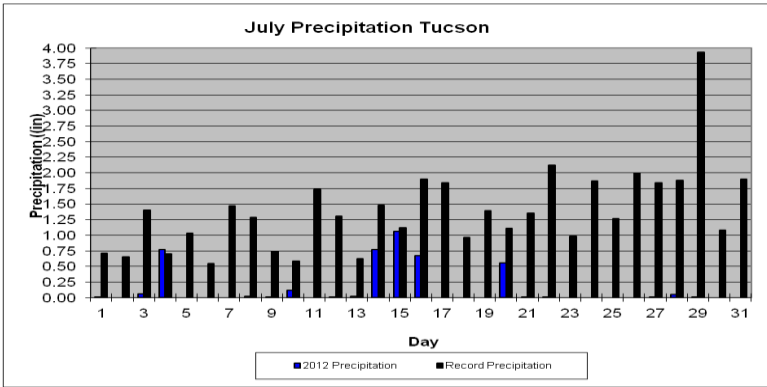
State Climate Office
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<http://azclimate.asu.edu> Tel: 480-965-6265
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July 2012 Daily Temperature, Precipitation, & Dew Point for Flagstaff, Phoenix, and Tucson





Number of Days:
 Clear 0
 Partly Cloudy 29
 Cloudy 2

Least July Precipitation 0.00" in 1950, 1993
 Average Wind Speed 7.6 mph
 Highest Peak Gust 51 mph from 120° on 21st

Greatest July Precipitation 6.47" in 1911

TUCSON CLIMATE STATISTICS
 July 2012

This July had no significant ranking for temperature and was the 15th wettest on record.

Greatest July Precipitation 6.24" in 1921
 Least July Precipitation 0.04" in 1995

Avg Max Temp(F) 97.3 Normal 99.7
 Avg Min Temp(F) 74.2 Normal 74.4
 Avg Mean Temp(F) 85.7 Normal 87.0
 Departure from Normal (F) -1.3

Number of Days:
 Clear 29
 Partly Cloudy 1
 Cloudy 1

Highest Monthly Avg Temp (F) 90.6 in 2005
 Lowest Monthly Avg Temp (F) 81.6 in 1912

Average Wind Speed 6.7 mph
 Highest Peak Gust 68 mph from 040° on 10th

Highest Temp this month (F): 105 on 1st, 9th, 10th
 Lowest Temp this month (F): 68 on 4th

Data are from the National Weather Service and the National Climatic Data Center and are **preliminary**.

Record High (F): 114 on 07/28/1995
 07/04/1989

Record Low (F): 49 on 07/03/1911

Temperature or precipitation records set this month:
 4th LoMax 86 set, previous record 90 in 1962
 4th Precip 0.77" set, previous record 0.70" in 1921

Tucson Number of Days of:

Minimum Temp 70° or lower 6
 Minimum Temp 80° or higher 3
 Maximum Temp 95° or lower 11
 Maximum Temp 105° or higher 3

Heating Degree Days 0 Normal 0
 Cooling Degree Days 651 Normal 683
 Degree base 65°F

Total July Precipitation 4.13"
 Normal July Precipitation 2.25"
 Departure from normal +1.88"
 Greatest 24-Hr Precipitation 1.10 on 7/15-16
 Total Precipitation Year-to-Date 5.15"
 Departure from Normal -0.37"

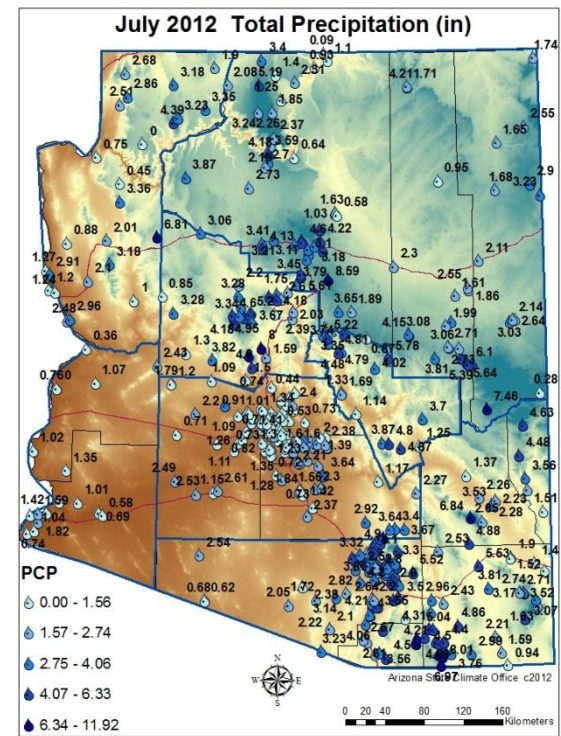
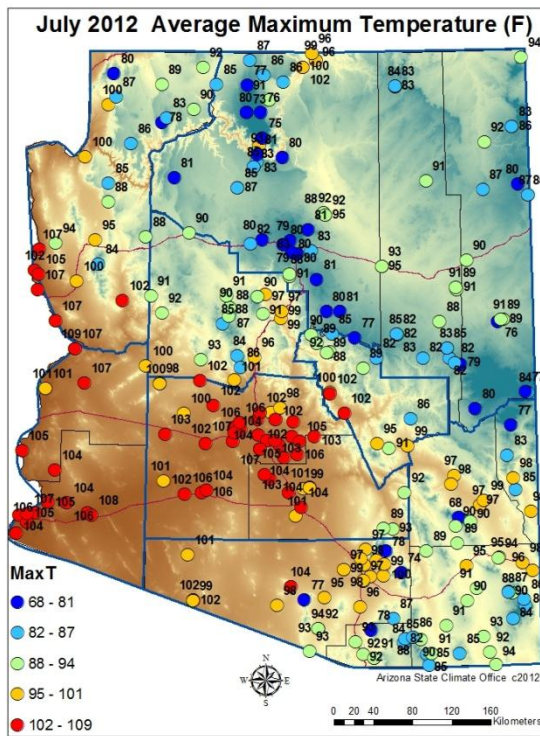
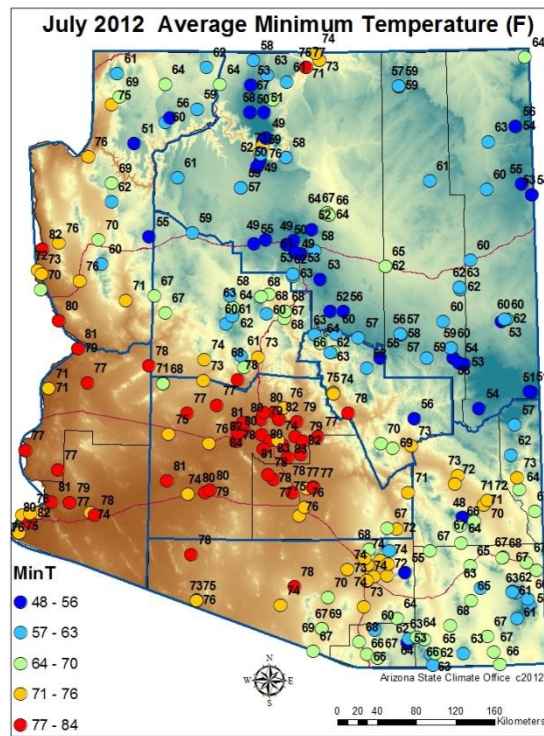
Winds for July:

Day	Phoenix		Flagstaff		Tucson	
	Avg	Max	Avg	Max	Avg	Max
1	7	22	6.9	31	6.5	29
2	8.5	28	5	24	7.9	23
3	11.8	32	6.7	26	8.3	31
4	7.6	22	7.8	24	7.1	38
5	5.6	22	8.6	32	5.4	18
6	9.4	26	4.3	20	6.6	25
7	8.1	26	4	20	6.7	33
8	7.5	22	3.4	24	8	33
9	6.6	23	4.1	39	6.8	38
10	7.5	31	5.3	37	7.3	68
11	8.3	33	4.9	37	8	31
12	7.6	47	4.2	23	6.6	25
13	6.5	30	6	28	7	26
14	5.9	36	0	0	5	49
15	7	33	5	20	6.9	60
16	7.6	22	6.4	30	7.4	40
17	6.9	24	5.8	25	4.8	29
18	7	24	4.6	28	5.2	28
19	8.4	23	2.9	26	5.2	26
20	7.2	31	4.4	10	6.8	36
21	8.1	51	5.4	38	6.7	41
22	7.6	30	4.5	29	5.9	35
23	6.7	24	3.1	22	6.3	26
24	11.2	32	4.1	23	7.7	29
25	6.8	24	5	24	6.9	67
26	7.4	32	4.1	22	5.4	22
27	6	21	2.7	23	7.7	36
28	8.5	40	2.5	22	5.9	41
29	4.7	45	4.6	47	7.8	26
30	8.7	24	4	22	7.7	40
31	6.7	33	3.8	6	6.4	29

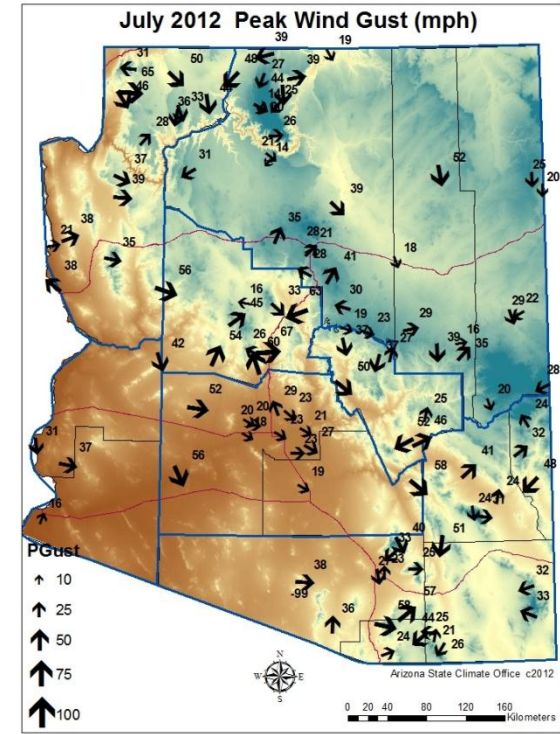
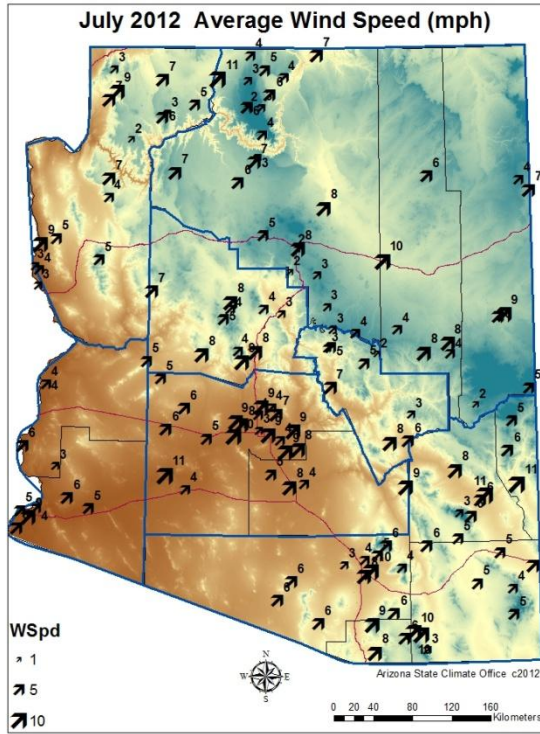
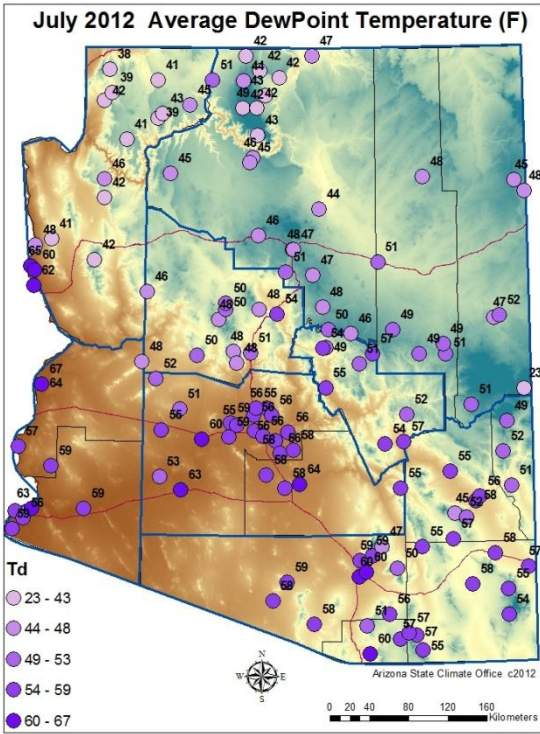
Dew Points for July:**Daily Average Dew Point (°F):**

Day	Phx	Tuc	Flg
1	43	53	33
2	50	56	35
3	61	64	41
4	63	63	45
5	55	60	42
6	41	45	35
7	46	54	38
8	47	53	42
9	48	56	41
10	53	58	42
11	62	61	45
12	64	63	48
13	68	68	55
14	66	66	52
15	64	65	52
16	53	63	47
17	42	54	38
18	44	51	40
19	49	57	44
20	58	62	48
21	62	67	49
22	64	66	51
23	63	64	53
24	61	60	53
25	53	59	49
26	49	55	51
27	56	62	50
28	62	65	55
29	67	64	57
30	67	61	54
31	65	56	56

July 2012 Temperature, Dew Point, Wind Speed, and Precipitation Maps are based on **preliminary data** from the National Weather Service, the Arizona Meteorological Network (AZMet), operated by the University of Arizona College of Agriculture Cooperative Extension and the RAWS (Remote Automated Weather Station) network operated by the Bureau of Land Management and Forest Service and the CoCoRaHS (Community Collaborative Rain, Hail and Snow) Network.

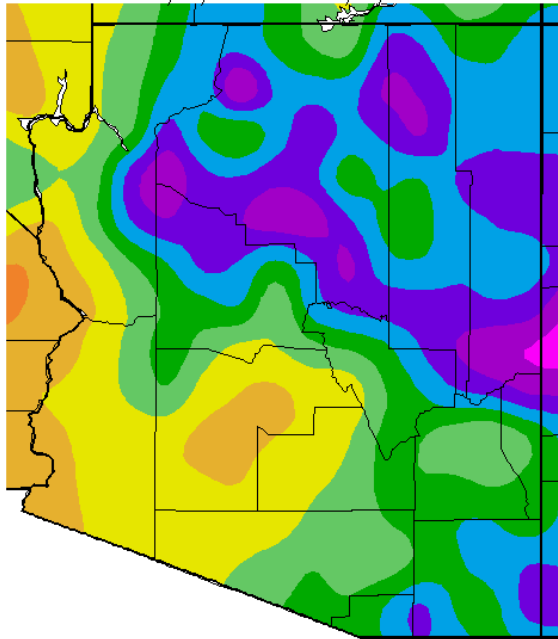


Average nighttime temperatures ranged from 48°F at Columbine to 84°F at Glendale Airport. Average daytime temperatures ranged from 68°F at Columbine to 109°F at Lake Havasu City. Precipitation values ranged from 0” to 11.92” at Carr and 10.97” at Canelo southeastern Arizona.

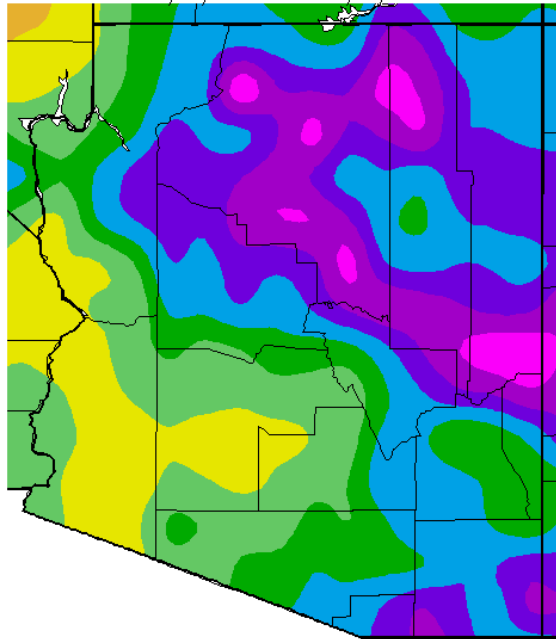


Average monthly dew points ranged from 23°F at the Alpine to 67°F at Parker. Average winds were light, with 11 mph as the highest average at Gunsight and Guthrie. The highest peak wind gust was 67 mph at Sunset Point.

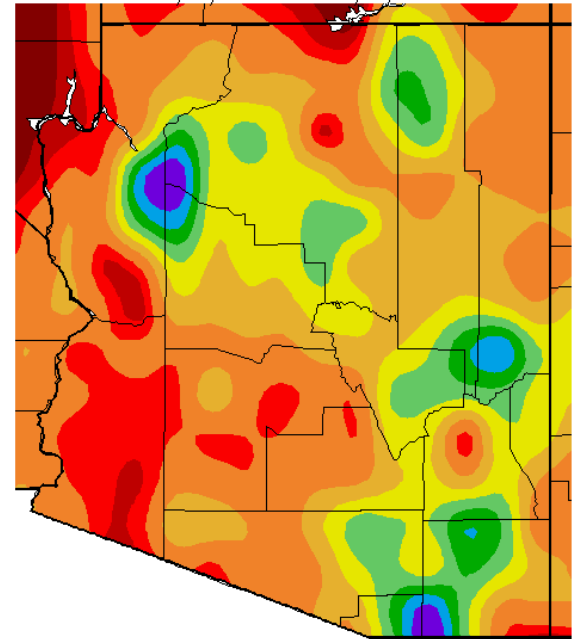
Av. Min. Temperature (deg. F)
7/3/2012 - 8/1/2012



Av. Max. Temperature (deg. F)
7/3/2012 - 8/1/2012



Total Precipitation (in.)
7/3/2012 - 8/1/2012

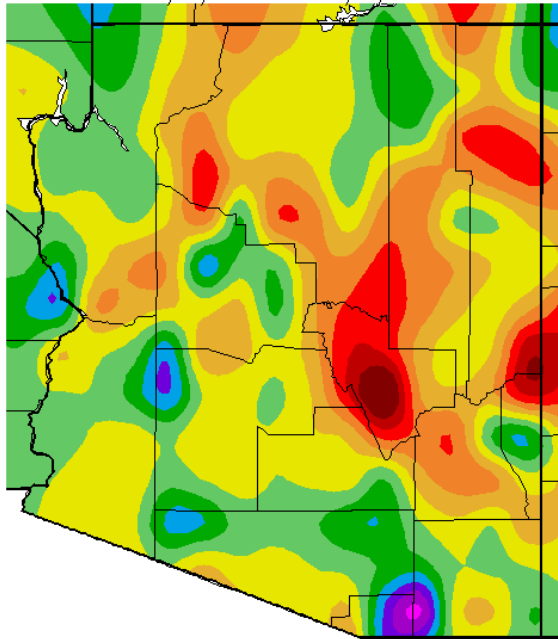


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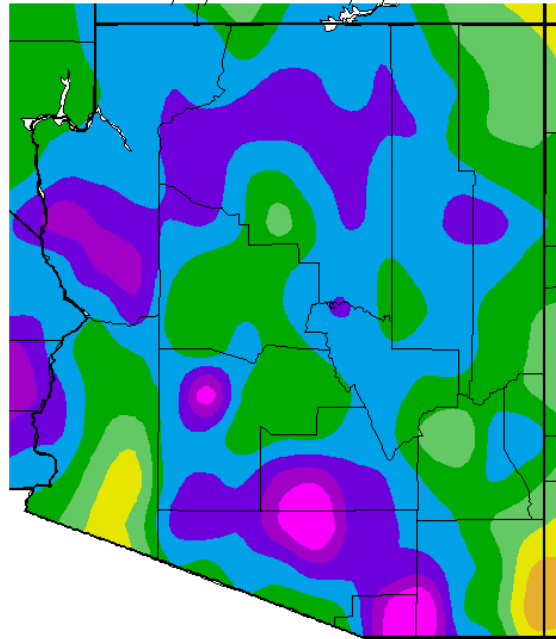
0.1 0.5 1 2 3 4 5 6 7 8 9
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Av. Min. Temperature dep from Ave (deg. F)
7/3/2012 – 8/1/2012



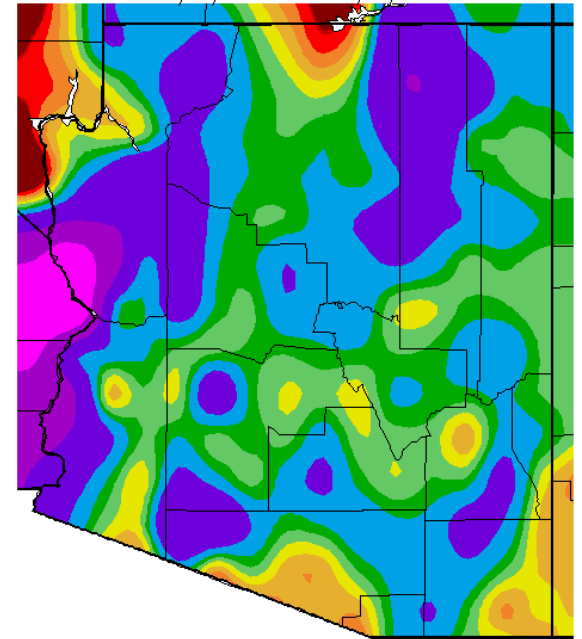
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Av. Max. Temperature dep from Ave (deg F)
7/3/2012 – 8/1/2012



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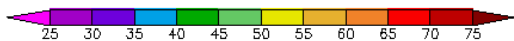
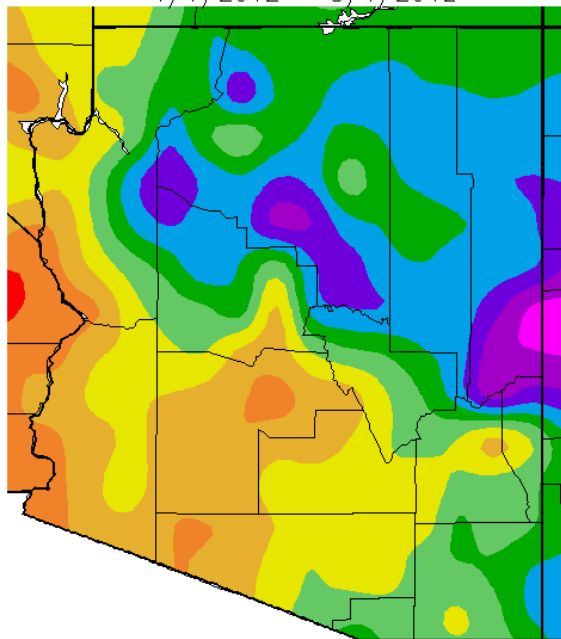
Percent of Average Precipitation (%)
7/3/2012 – 8/1/2012



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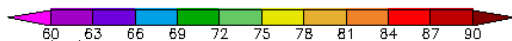
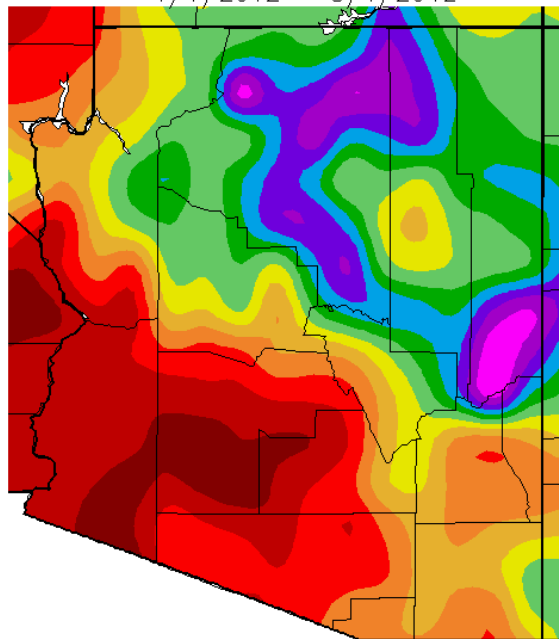
July minimum temperatures were generally within 1°F of normal with a few isolated exceptions of warmer than normal temperatures in Gila County and colder than normal minimum temperatures in Santa Cruz County. Maximum temperatures were colder than normal statewide, with the coolest conditions in northern Pima and southern Pinal and Mohave counties. Precipitation in July was much wetter than normal along the lower Colorado River valley and northern Navajo County. The north rim of the Grand Canyon and southeastern Arizona were drier than normal in July.

Av. Min. Temperature (deg. F)
1/1/2012 - 8/1/2012



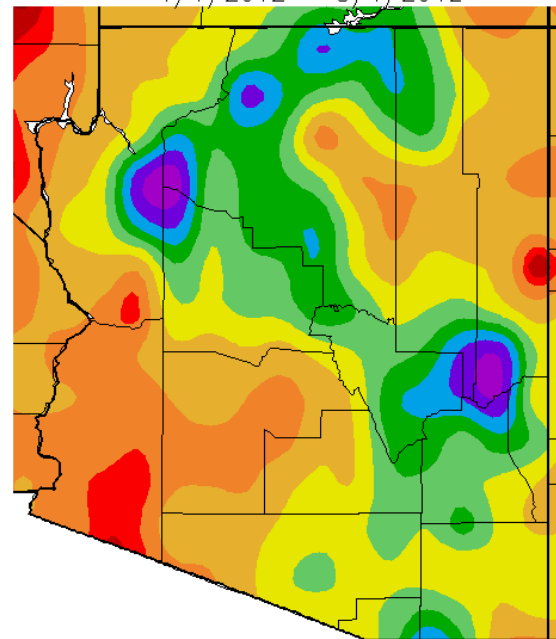
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Av. Max. Temperature (deg. F)
1/1/2012 - 8/1/2012



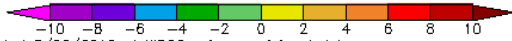
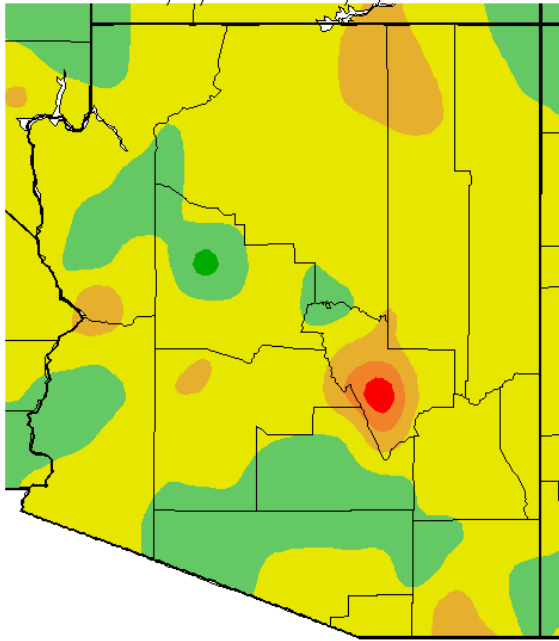
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Total Precipitation (in.)
1/1/2012 - 8/1/2012



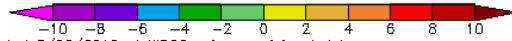
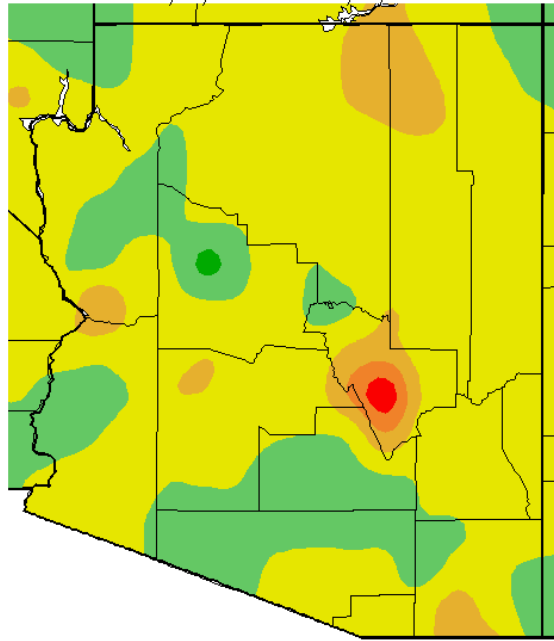
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Av. Min. Temperature dep from Ave (deg. F)
1/1/2012 – 8/1/2012



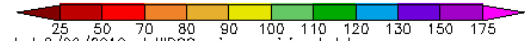
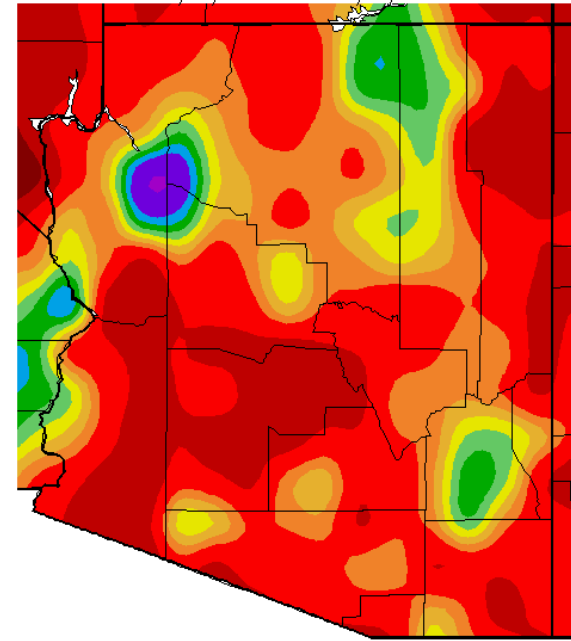
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Av. Min. Temperature dep from Ave (deg. F)
1/1/2012 – 8/1/2012



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Percent of Average Precipitation (%)
1/1/2012 – 8/1/2012

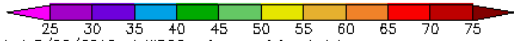
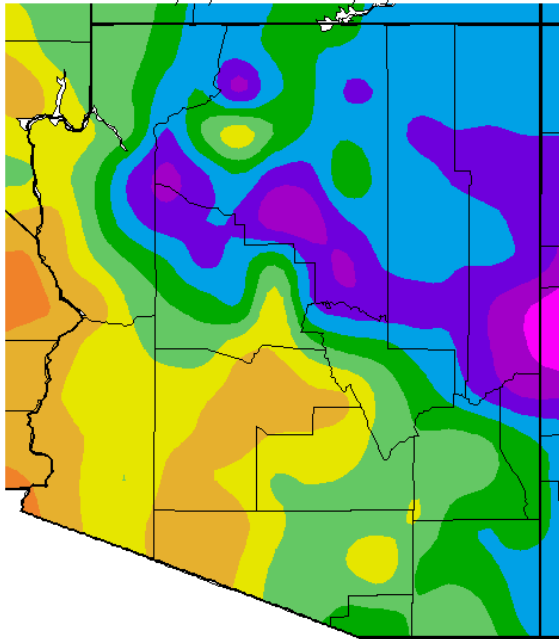


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Calendar Year 2012

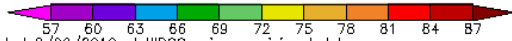
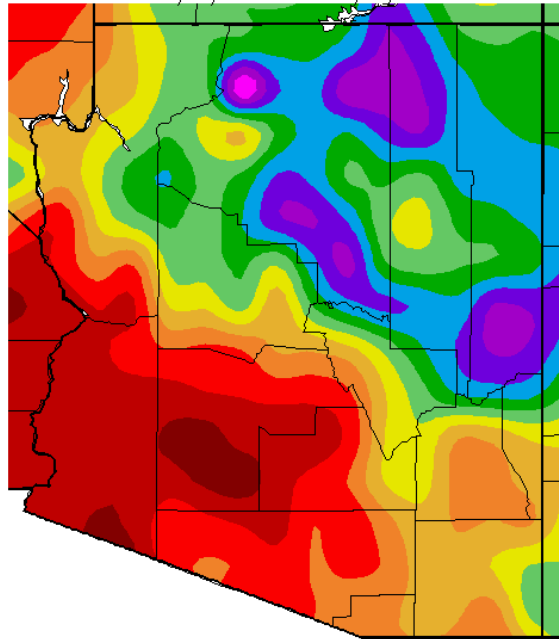
Since January, overnight temperatures continue to be within 2°F of normal, with most of the state warmer than normal. Daytime temperatures have also been within 2 degrees F of normal, with most of the state warmer than normal. Precipitation over the calendar year has been well below normal across most of the state, with exceptions near the borders of Coconino, Mohave and Yavapai counties. Most of the rest of the state has received less than 70% of average precipitation.

Av. Min. Temperature (deg. F)
10/1/2011 – 8/1/2012



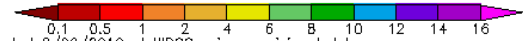
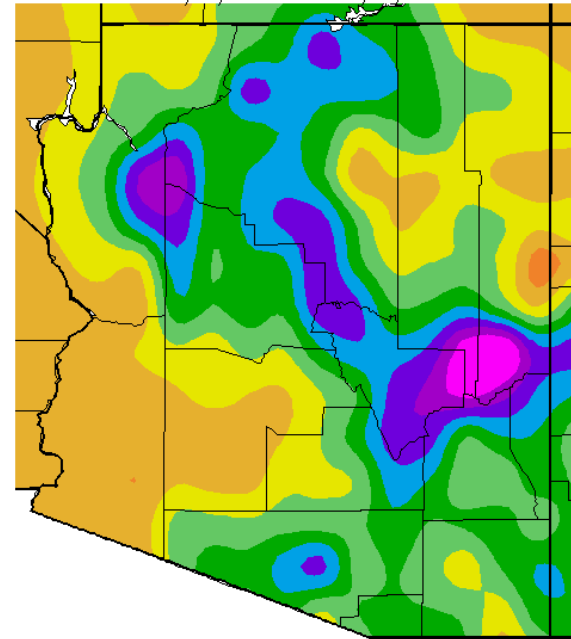
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Av. Max. Temperature (deg. F)
10/1/2011 – 8/1/2012



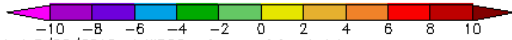
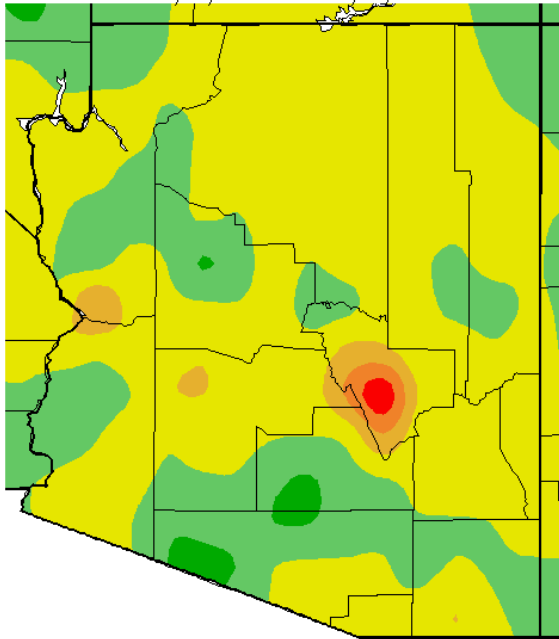
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Total Precipitation (in.)
10/1/2011 – 8/1/2012



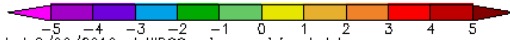
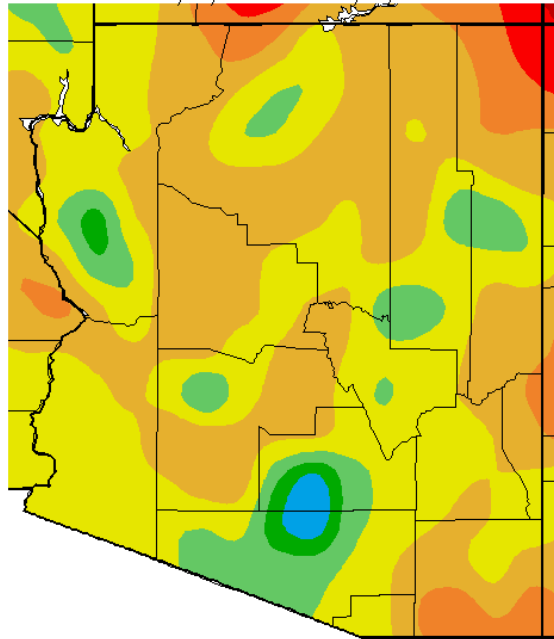
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Av. Min. Temperature dep from Ave (deg. F)
10/1/2011 – 8/1/2012



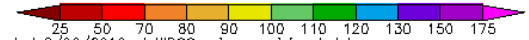
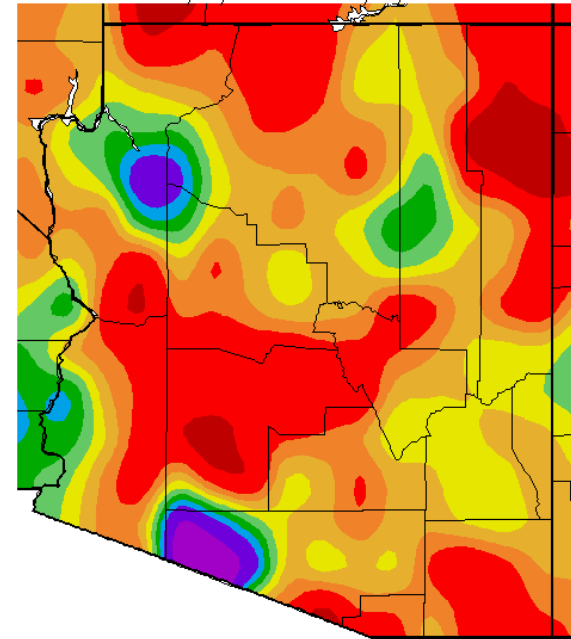
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Av. Max. Temperature dep from Ave (deg F)
10/1/2011 – 8/1/2012



Generated 8/02/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Percent of Average Precipitation (%)
10/1/2011 – 8/1/2012

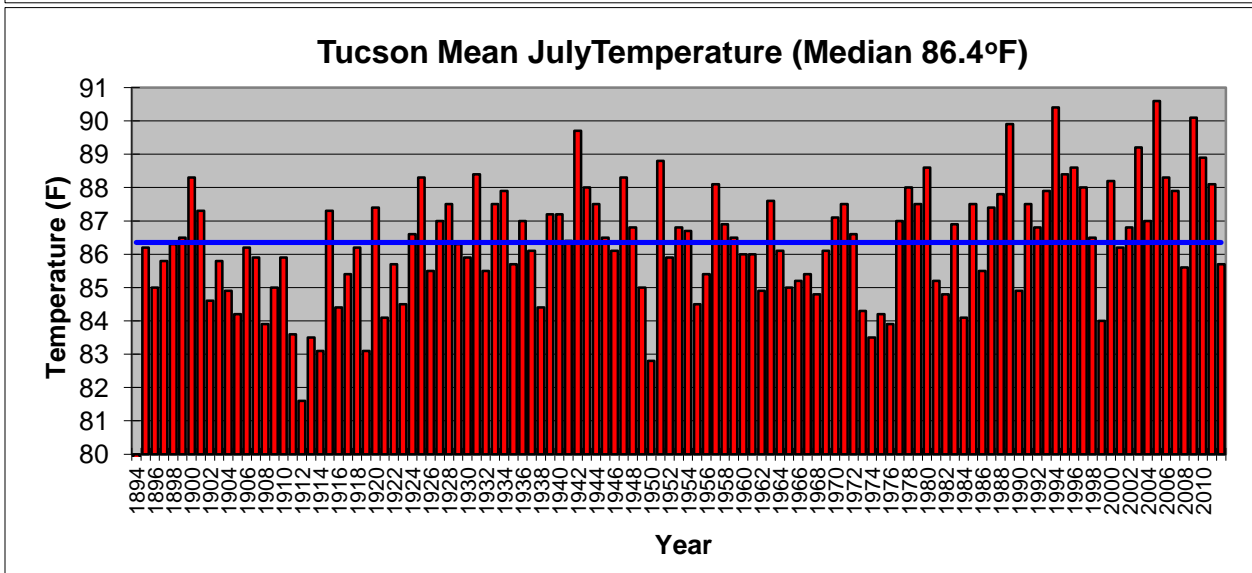
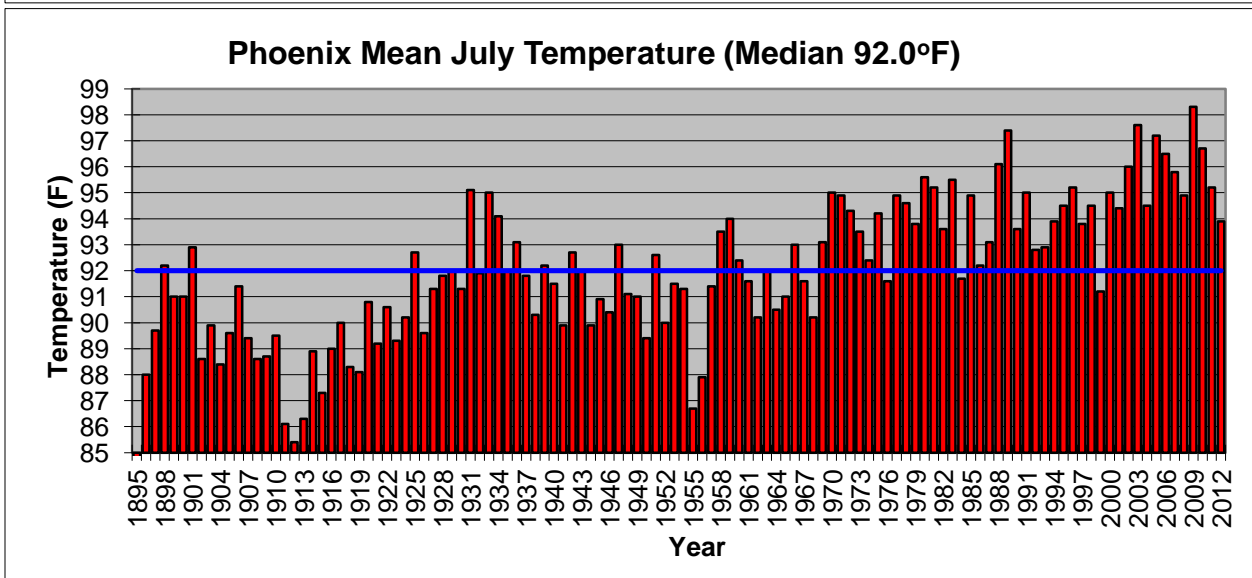
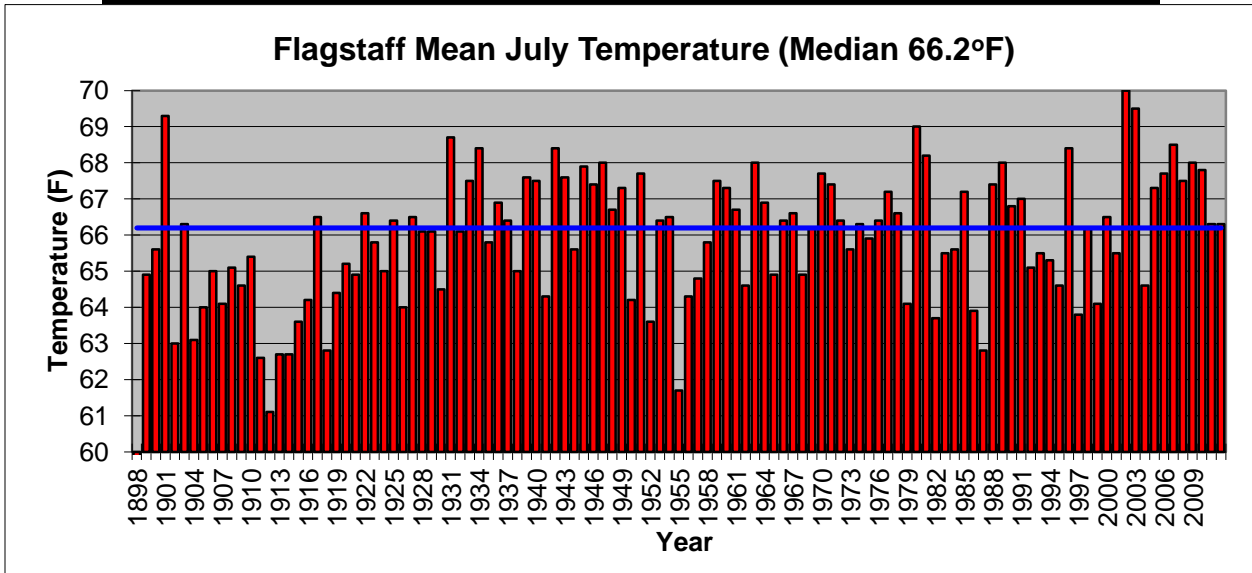


Generated 8/02/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

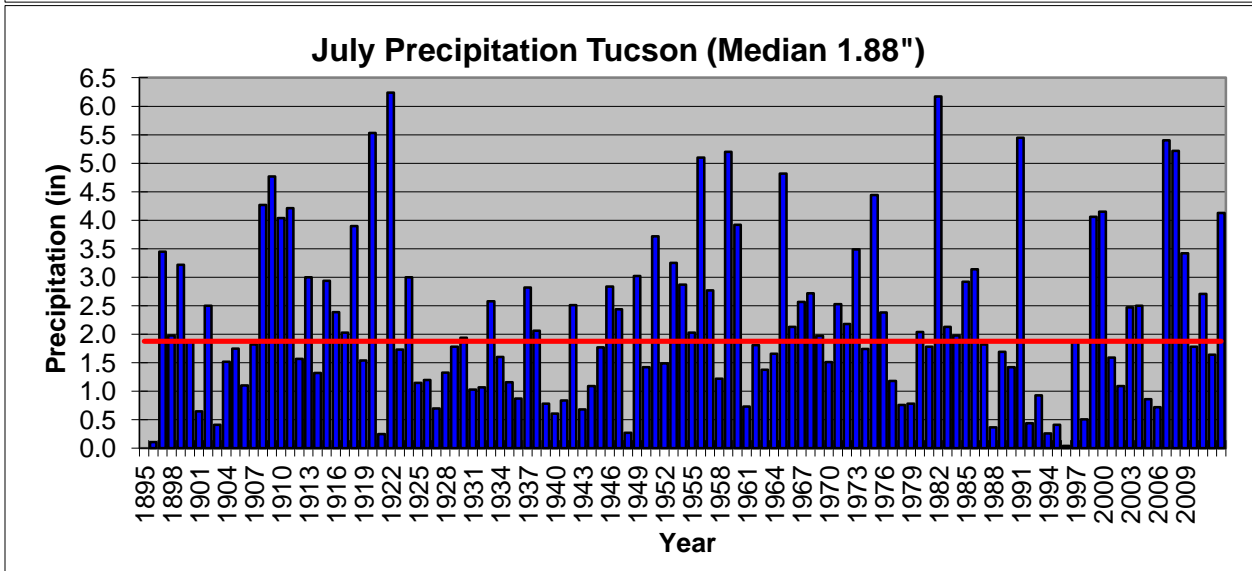
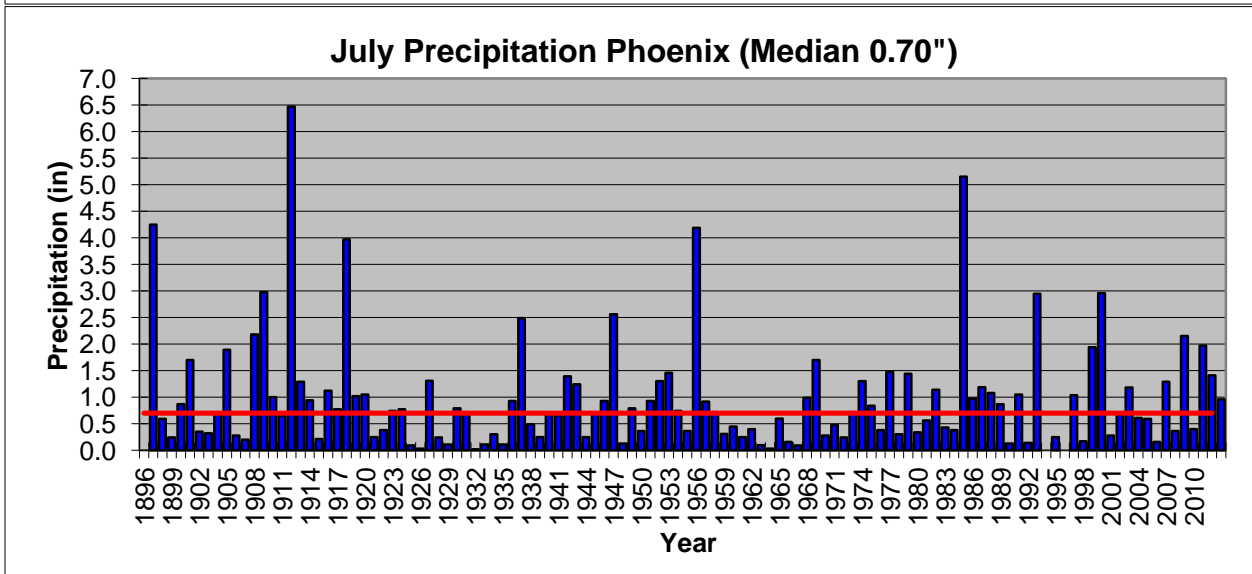
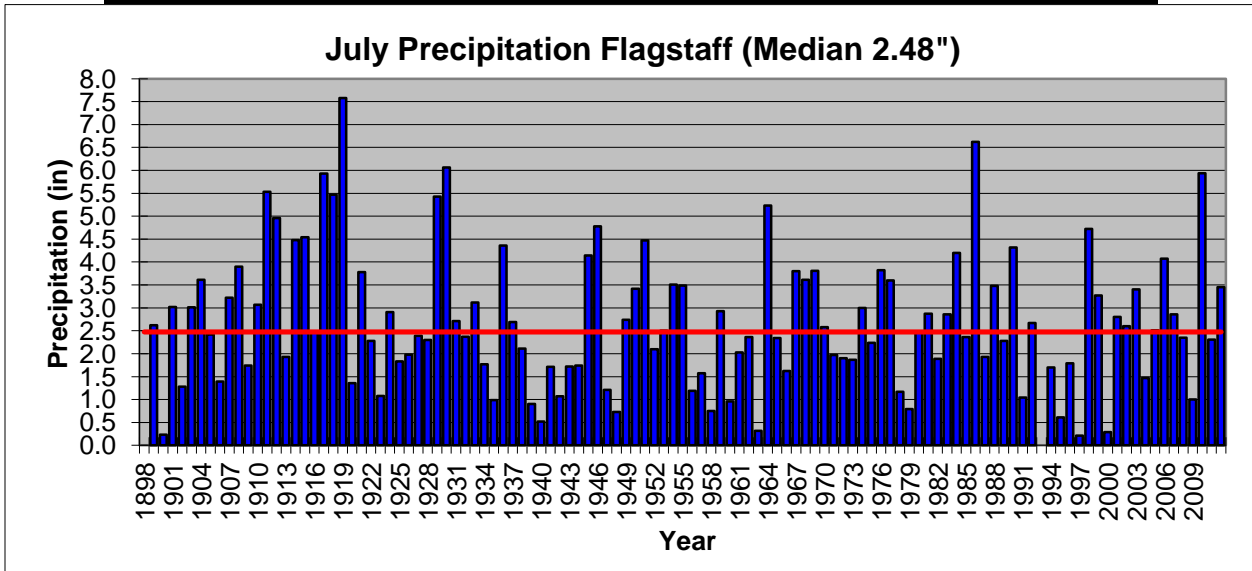
Water Year 2012 (Oct 1 2011 – July 31, 2012)

Although the water began with wet, cold conditions through December, January through July were warm and relatively dry as the second consecutive La Niña year turned out to be much drier than the first year. Nighttime lows were within 2°F of normal, except in Gila County which was either unusually warm or had a station move to a warmer environment. Daytime high temperatures were generally 0-3°F warmer than average except in western Pinal and north central Pima counties. Precipitation had been scarce for the water year until the monsoon kicked in with significant rainfall in July. The wet spots, due to a couple big, but localized storms, were central Mohave County and western Pima County.

July Mean Temperature Graphs – Flagstaff, Phoenix, and Tucson 1895-2012:

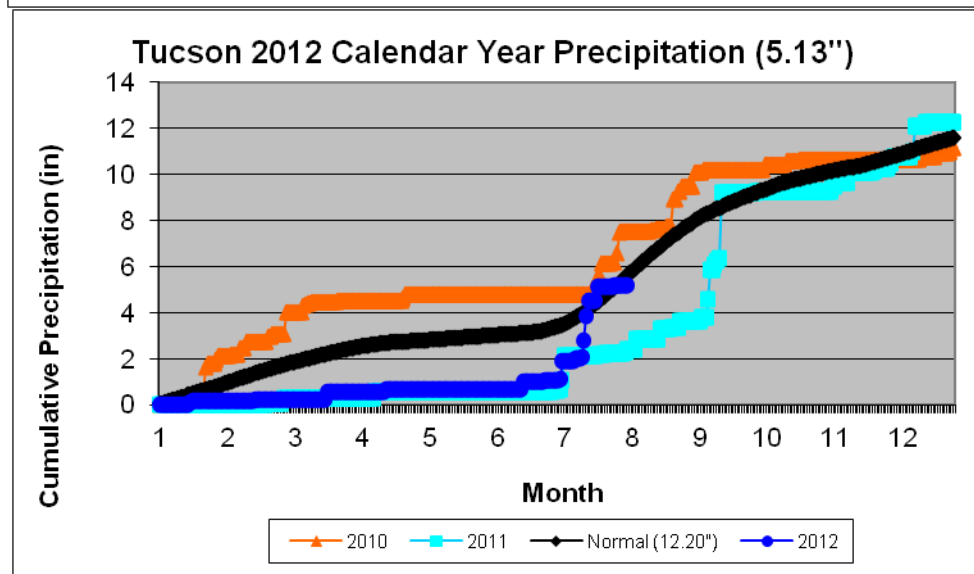
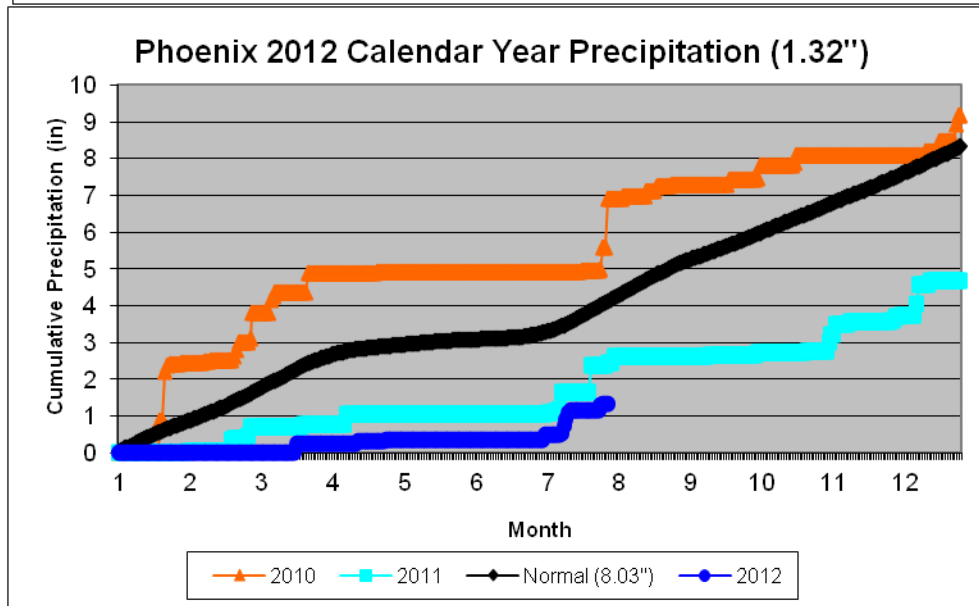
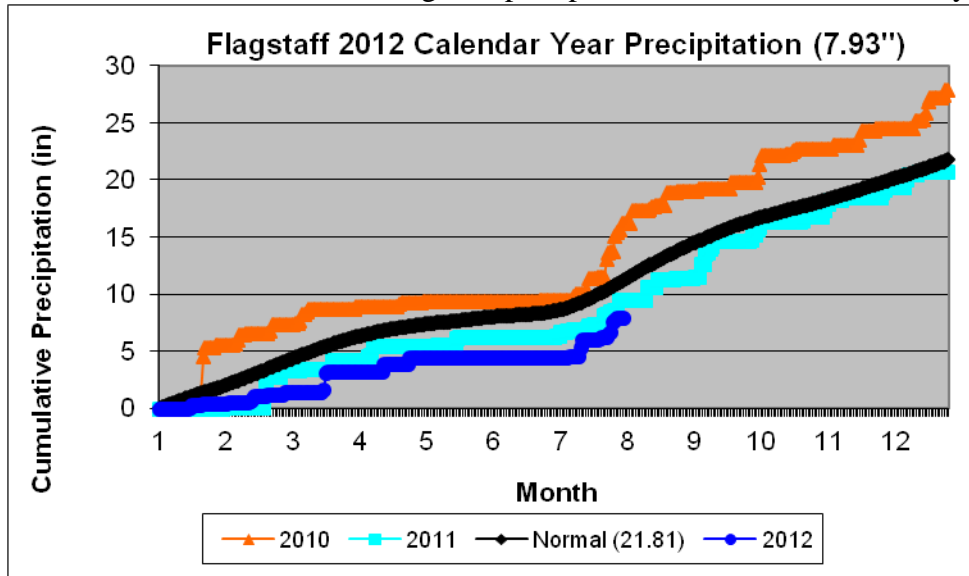


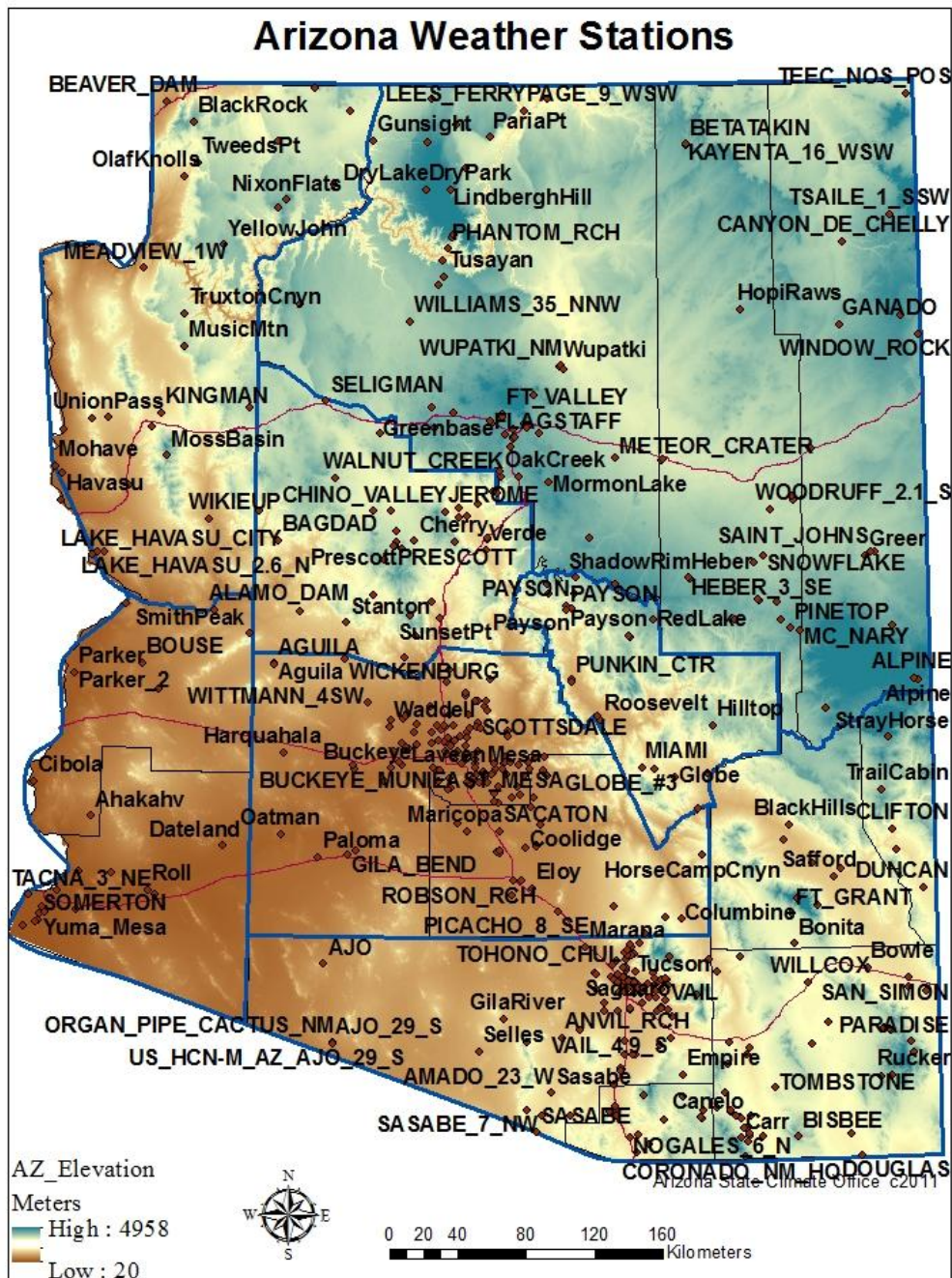
July Mean Precipitation Graphs – Flagstaff, Phoenix, and Tucson 1895-2012:



2012 Cumulative Precipitation Graphs – Flagstaff, Phoenix and Tucson:

Flagstaff and Phoenix are still below average for precipitation, but Tucson has finally caught up.





The downloadable normals and extremes calendars use the following abbreviations:

NORM = 30 year (1981-2010) average value (degrees Fahrenheit (F))

OBS = The temperature observation for that day this year

AVG = Average daily temperature

HI MAX = Highest maximum temperature for that day (F)

LO MAX = Lowest maximum temperature for that day (F)

LO MIN = Lowest minimum temperature for that day (F)

HI MIN = Highest minimum temperature for that day (F)

Mx PCP = Maximum precipitation for that day (inches)

Mx SNO = Maximum snowfall for that day (inches)