



Arizona Climate Summary

August 2013

Summary of conditions for July 2013

July 2013 Temperature and Precipitation Summary

July 1st – 16th: To start off the month of July, a high pressure system came in from Nevada to settle over Arizona, bringing above-average temperatures to the entire state. For the first week, western parts of the state experienced the warmest temperatures. Stations in Bullhead City and Bouse reported reaching a maximum air temperature of 110 degrees Fahrenheit or more with the highest recorded for temperature being 122 degrees F in Bullhead City on the 1st. By the 10th, a fair amount of moisture flowed in from Mexico providing measurable rainfall for most of southeastern Arizona. Douglas reported 2.3” of rain on the 10th while 3.0” was reported at Coronado National Memorial. By the 16th, a low trough had developed in the jet stream along with a low pressure center approaching the state from New Mexico. It was quite unusual to see a low pressure system moving westward across the U.S. Precipitation was reported in the southwest region of the state, as well as locations in high elevations. Coronado NM reported 1.52” of rainfall on the 16th as well as Bisbee where 1.6” of rainfall was reported.

July 17th – 30th: The low pressure system remained in place for a few days continuing to bring moisture into Arizona and New Mexico. The system produced a good amount of rain for locations at higher elevations along the Mogollon Rim. By the 21st, measurable rain was reported from stations all over the state. Stations in Ajo, Lost Dutchman State Park, Organ Pipe Cactus National Monument, and Payson reported more than 2” of rain on the 21st. Some parts of Arizona continued to receive precipitation through the 28th as the high pressure location continued to bring moisture into the state. Arizona then entered a dry period with little precipitation reported throughout most of the state for the remainder of the month, as the high moved south into Mexico and dry westerly flow dominated.

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. 16 of this report for calendar abbreviations.

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

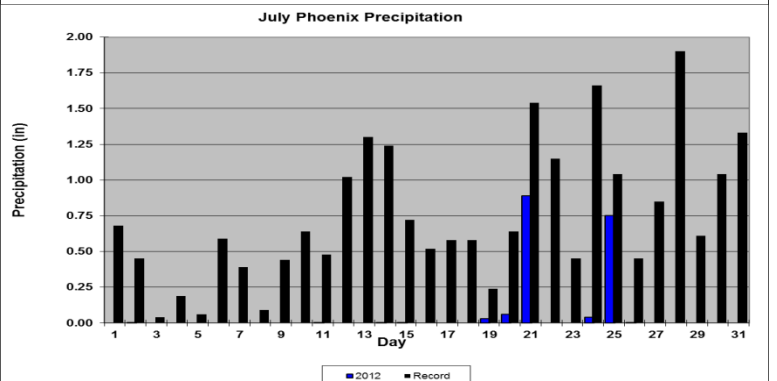
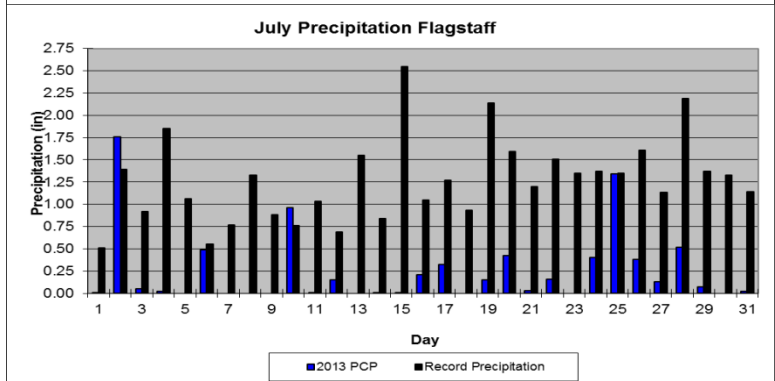
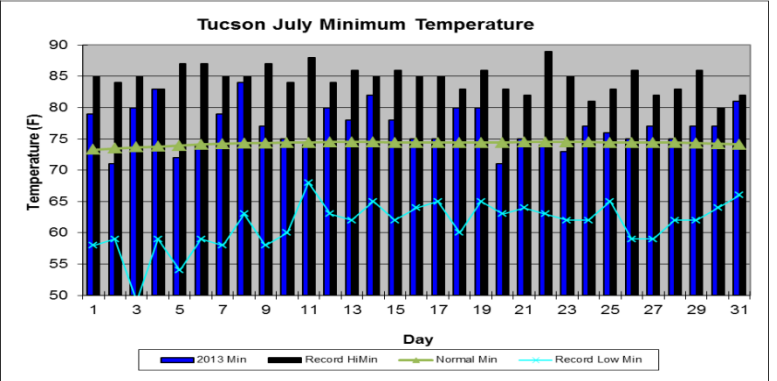
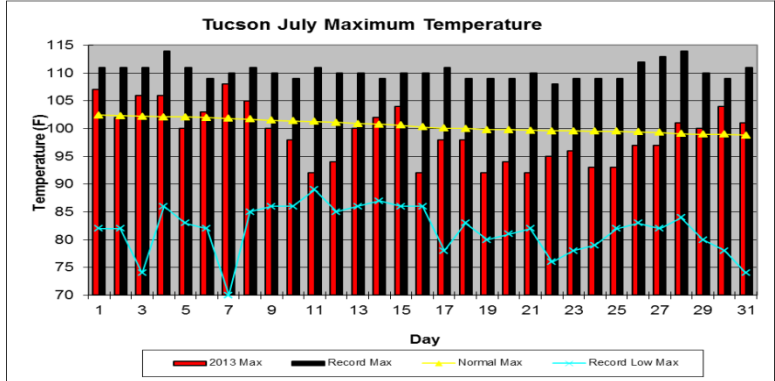
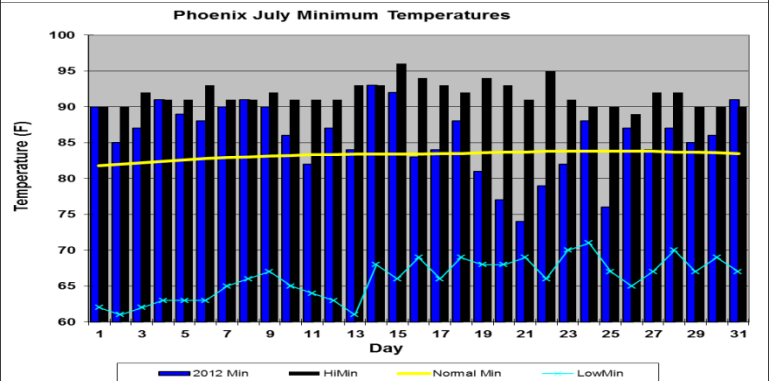
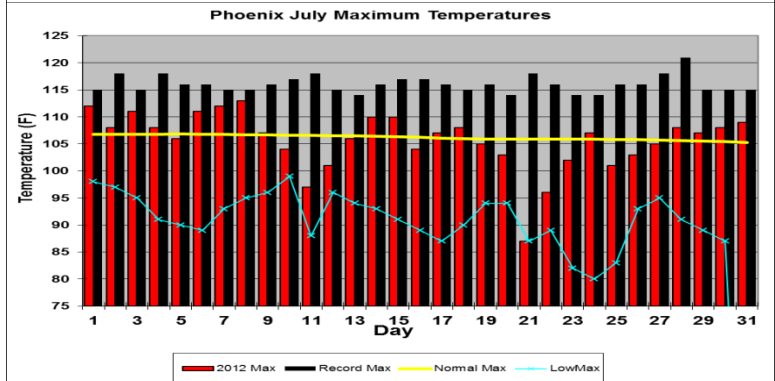
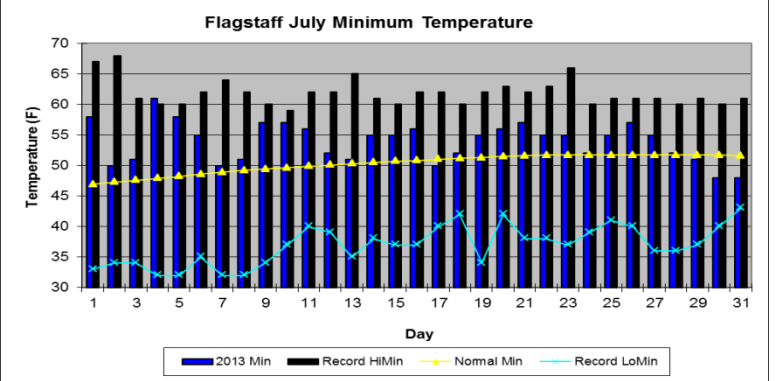
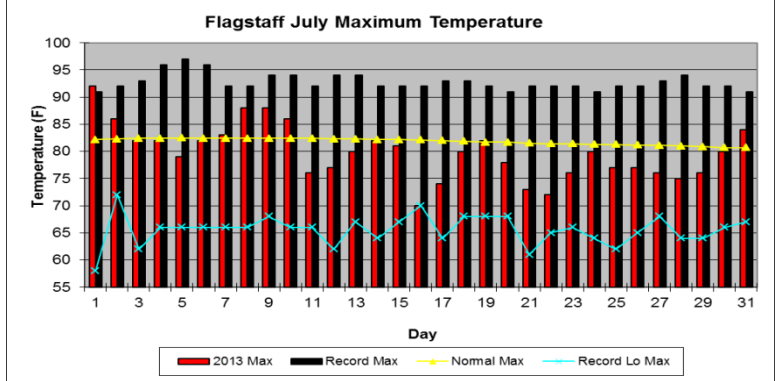
****Note:** The discrepancy between the Statewide Temperature and Precipitation values for Phoenix, Flagstaff and Tucson and the daily values in their graphs are due to the reporting times. Statewide Temperature and Precipitation values are taken at 5pm, while official daily records at the airports are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

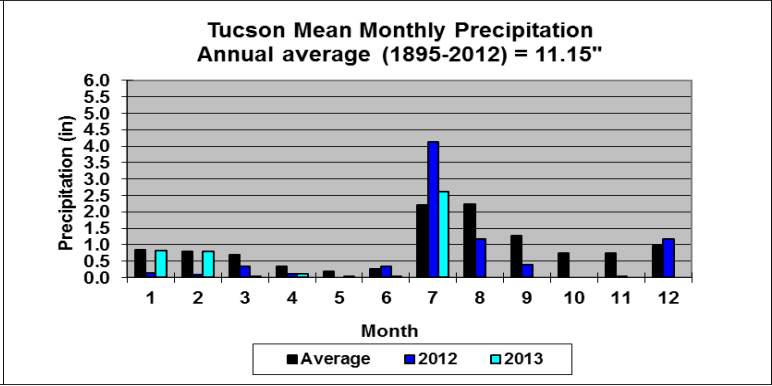
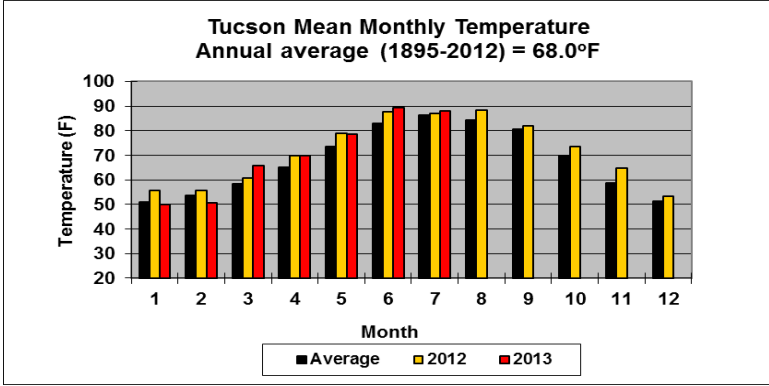
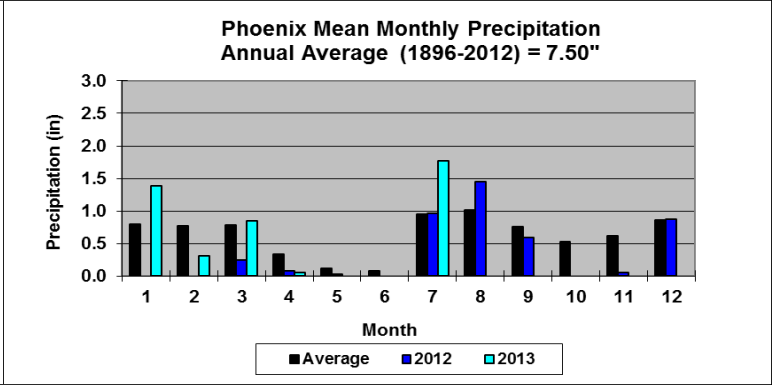
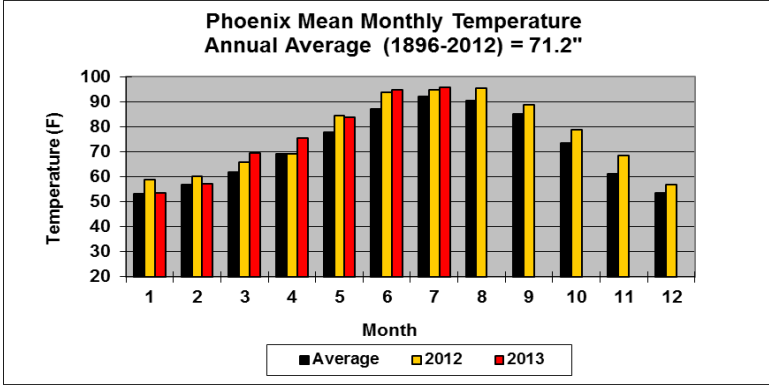
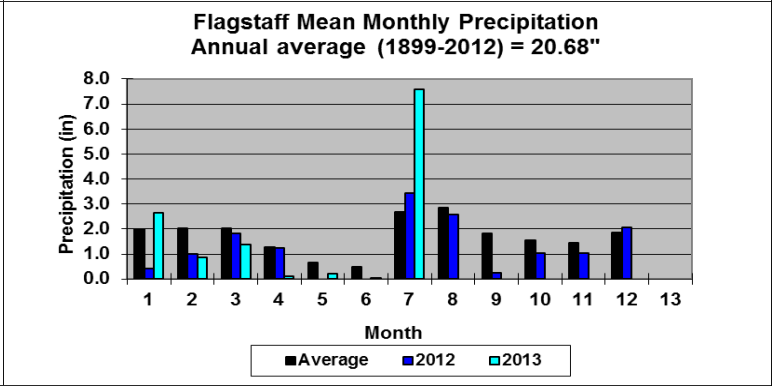
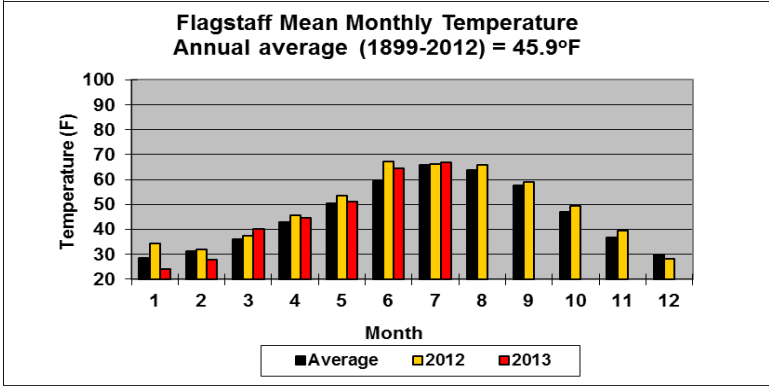
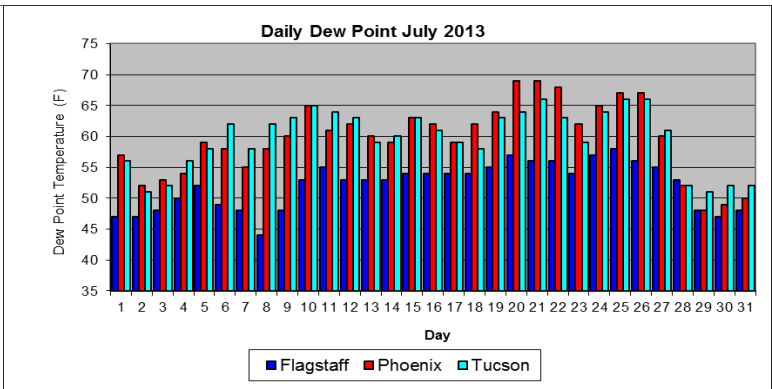
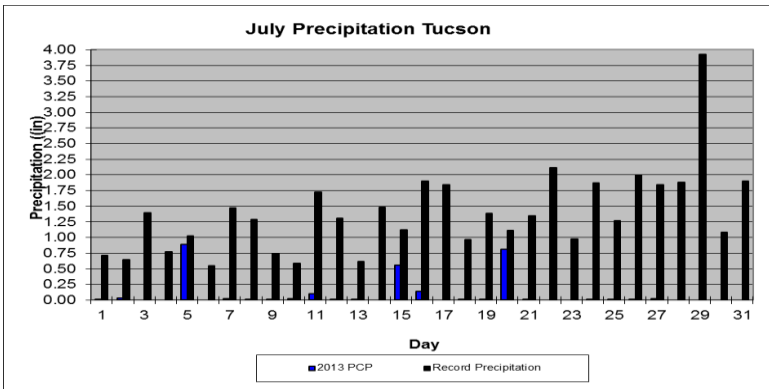
State Climate Office
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July 2013 Daily Temperature, Precipitation, & Dew Point for Flagstaff, Phoenix, and Tucson





FLAGSTAFF CLIMATE STATISTICS

July 2013

This July had no significant ranking in temperature and was the 2nd wettest on record.

Avg Max Temp (F) 79.8 Normal 81.2
 Avg Min Temp (F) 53.9 Normal 50.9
 Avg Mean Temp (F) 66.9 Normal 66.1
 Departure from Normal (F) +0.8

Highest Monthly Avg Temp (F) 70.0 in 2002
 Lowest Monthly Avg Temp (F) 61.1 in 1912

Highest Temp this month (F): 92 on 1st
 Lowest Temp this month (F): 48 on 31st, 30th

Record High (F): 97 on 07/05/1973
 Record Low (F): 32 on 07/05/1955

Temperature or precipitation records this month:

1st HiMax 92 set, previously 91 in 1990
 2nd Rain 1.76" set, previously 1.39" in 1919
 16th LoMax 70 tied, previously 70 in 1919

Flagstaff Number of Days of:

Minimum Temp 60°F or higher 1
 Minimum Temp 50°F or lower 5

Maximum Temp 90°F or higher 1
 Maximum Temp 75°F or lower 5

Heating Degree Days 9 Normal 32
 Cooling Degree Days 75 Normal 64
 Degree base 65°F

Total July Precipitation 7.57"
 Normal July Precipitation 2.61"
 Departure from normal 4.96"
 Greatest 24-Hr Precipitation 1.81" on 07/02-07/03
 Total Precipitation Year-to-Date 12.84"
 Departure from Normal 1.76"

Number of Days:

Clear 14
 Partly Cloudy 17
 Cloudy 0

Greatest July Precipitation 7.58" in 1919
 Least July Precipitation 0.00" in 1993

Average Wind Speed 5.2 mph
 Highest Peak Gust 53 mph from 90° on 10th

PHOENIX CLIMATE STATISTICS

July 2013

This July was the 10th warmest on record and had no significant ranking for precipitation.

Avg Max Temp(F) 105.7 Normal 106.1
 Avg Min Temp(F) 85.7 Normal 83.5
 Avg Mean Temp (F) 95.7 Normal 94.8
 Departure from Normal (F) +0.9

Highest Monthly Avg Temp (F) 98.3 in 2009
 Lowest Monthly Avg Temp (F) 85.4 in 1912

Highest Temp this month (F): 113.0 on 8th
 Lowest Temp this month (F): 74.0 on 21st

Record High (F): 121 on 07/28/1995
 Record Low (F): 63 on 07/04/1912

Temperature and precipitation records this month:
 1st HiMin 91 tied, previously set in 1990

Phoenix Number of Days of:

Minimum Temp 80°F or lower 4
 Minimum Temp 90°F or higher 8
 Maximum Temp 100°F or lower 3
 Maximum Temp 110°F or higher 7

Heating Degree Days 0 Normal 0
 Cooling Degree Days 959 Normal 924
 Degree base 65°F

Total July Precipitation 1.77"
 Normal July Precipitation 1.05"
 Departure from normal 0.72"
 Greatest 24-Hr Precipitation 0.95"

Total Precipitation Year-to-Date 4.38"
 Departure from Normal +0.10"

Greatest July Precipitation 6.47" in 1911
 Least July Precipitation 0.00" in 1995, 1993

Number of Days:
 Clear 3
 Partly Cloudy 27
 Cloudy 1

Average Wind Speed 8.1 mph
 Highest Peak Gust 43 mph from 160° on 2nd

TUCSON CLIMATE STATISTICS
 July 2013

This July had no significant ranking for temperature or precipitation.

Maximum Temp 105°F or higher 5

Avg Max Temp(F) 99.0 Normal 99.7
 Avg Min Temp(F) 76.9 Normal 74.4
 Avg Mean Temp(F) 88.0 Normal 87.0
 Departure from Normal (F) +1.0

Heating Degree Days 0 Normal 0
 Cooling Degree Days 720 Normal 683
 Degree base 65°F

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

Total July Precipitation 2.60"
 Normal July Precipitation 2.25"
 Departure from normal 0.35"
 Greatest 24-Hr Precipitation 0.89" on 07/04-07/05

Highest Temp this month (F): 108 on 7th
 Lowest Temp this month (F): 71 on 2nd and 20th

Total Precipitation Year-to-Date 4.37"
 Departure from Normal -1.15"
 Greatest July Precipitation 6.24" in 1921
 Least July Precipitation 0.04" in 1995

Record High (F): 114 on 07/04/1989
 Record Low (F): 49 on 07/03/1911

Number of Days:
 Clear 27
 Partly Cloudy 4
 Cloudy 0

Temperature or precipitation records this month:
 None for Tucson, but
 6th Rain 1.57" previously 0.87" in 1967 (Douglas)
 12th Rain 1.14" previously 0.79" in 1975 (Douglas)
 13th Rain 1.15" previously 0.79" in 1975 (Douglas)

Average Wind Speed 7.4 mph
 Highest Peak Gust 73 mph from 50° on 5th

Tucson Number of Days of:
 Minimum Temp 75°F or lower 12
 Minimum Temp 80°F or higher 9
 Maximum Temp 95°F or lower 9

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

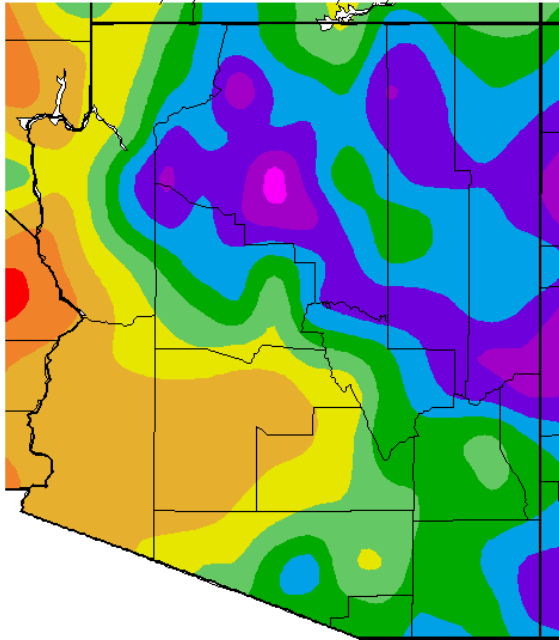
Winds for July:

Day	Phoenix		Flagstaff		Tucson	
	Avg	Max	Avg	Max	Avg	Max
1	8.1	33	6.1	35	8.1	46
2	11.3	43	10.9	48	11.7	51
3	9.9	26	11.6	35	10.4	26
4	9.2	25	16.2	31	8.8	29
5	7.4	19	9.2	28	8.1	73
6	7	25	3.5	5	5.1	24
7	5.6	19	4.1	25	6	41
8	8.6	24	3	20	7	38
9	12.4	27	4.1	18	11.8	39
10	11.5	28	3.8	53	5.7	35
11	8	21	6.8	32	7.6	22
12	8.5	26	4.6	24	7	26
13	5.9	19	3.5	24	6.9	24
14	7.8	33	4.4	30	7.7	29
15	5.6	33	2.5	21	8.2	32
16	13.6	40	3.2	16	12.1	30
17	7.2	27	1.6	23	9.7	26
18	9.3	30	4	24	11.5	29
19	7.8	29	3.9	23	6.4	20
20	9.2	41	3	22	5.2	54
21	6.4	29	6.6	28	7.7	24
22	5.3	30	2.9	24	6.6	27
23	7.4	21	3.8	20	5.8	M
24	7.6	23	2.1	18	5.1	24
25	6.9	25	3.4	23	4.4	20
26	6.2	25	6.8	23	5.7	29
27	5.9	23	4.8	24	5.7	35
28	8.3	27	6.9	35	6.2	22
29	7.9	20	4.9	24	6.3	17
30	6.5	19	M	17	5.1	24
31	7.4	25	M	18	5.1	20

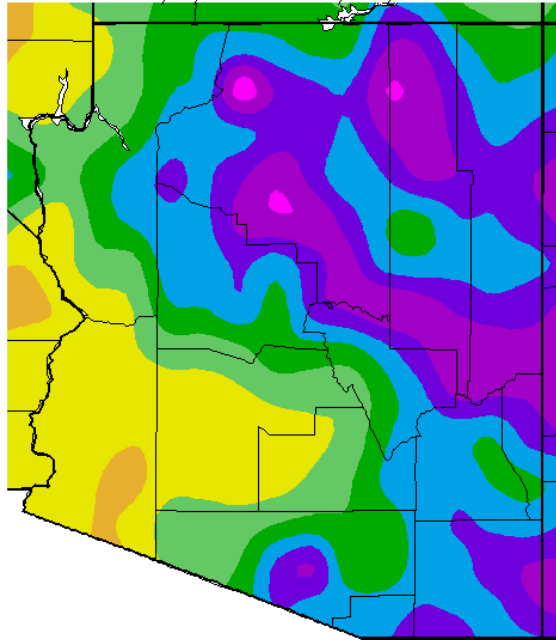
**Dew Points for July:
Daily Average Dew Point (°F):**

Day	Phx	Tuc	Flg
1	57	56	47
2	52	51	47
3	53	52	48
4	54	56	50
5	59	58	52
6	58	62	49
7	55	58	48
8	58	62	44
9	60	63	48
10	65	65	53
11	61	64	55
12	62	63	53
13	60	59	53
14	59	60	53
15	63	63	54
16	62	61	54
17	59	59	54
18	62	58	54
19	64	63	55
20	69	64	57
21	69	66	56
22	68	63	56
23	62	59	54
24	65	64	57
25	67	66	58
26	67	66	56
27	60	61	55
28	52	52	53
29	48	51	48
30	49	52	47
31	50	52	48

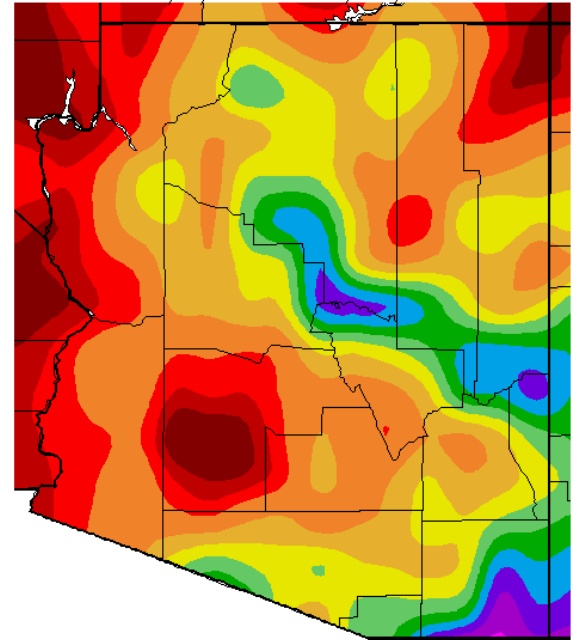
Av. Min. Temperature (deg. F)
7/1/2013 – 7/31/2013



Av. Max. Temperature (deg. F)
7/1/2013 – 7/31/2013



Total Precipitation (in.)
7/1/2013 – 7/31/2013

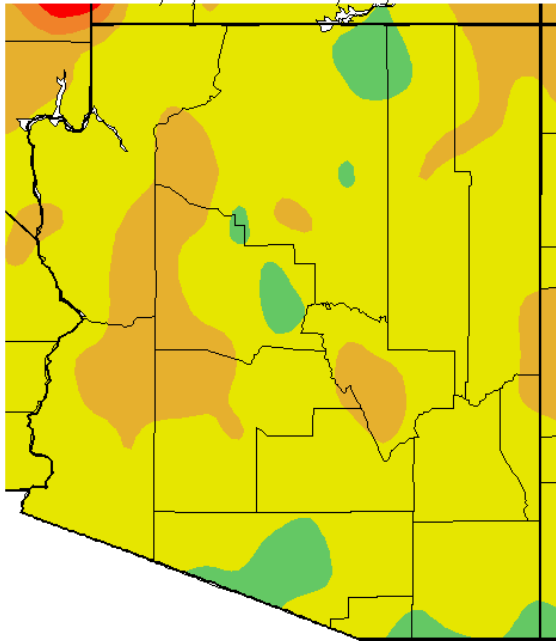


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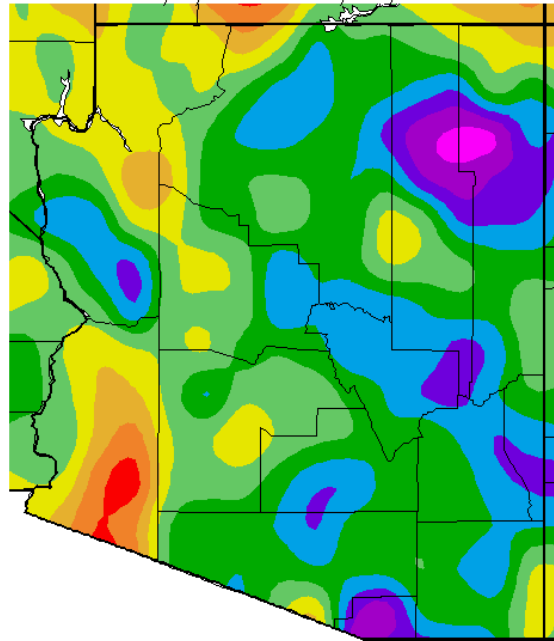
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Av. Min. Temperature dep from Ave (deg. F)
7/1/2013 – 7/31/2013



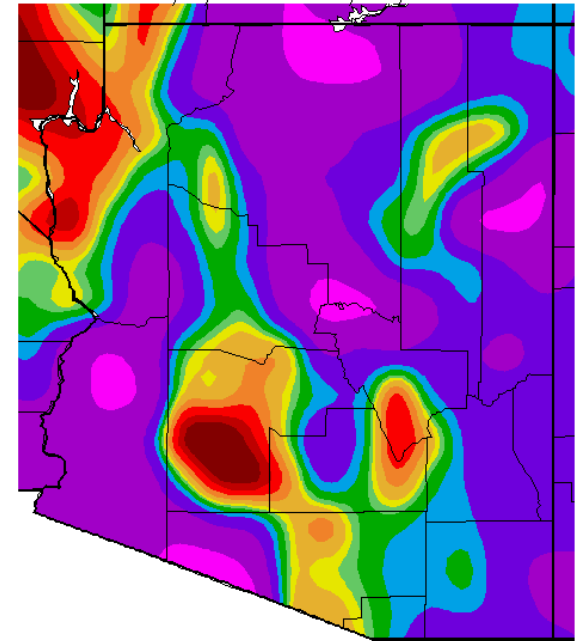
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Av. Max. Temperature dep from Ave (deg F)
7/1/2013 – 7/31/2013



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NOAA Regional Climate Centers

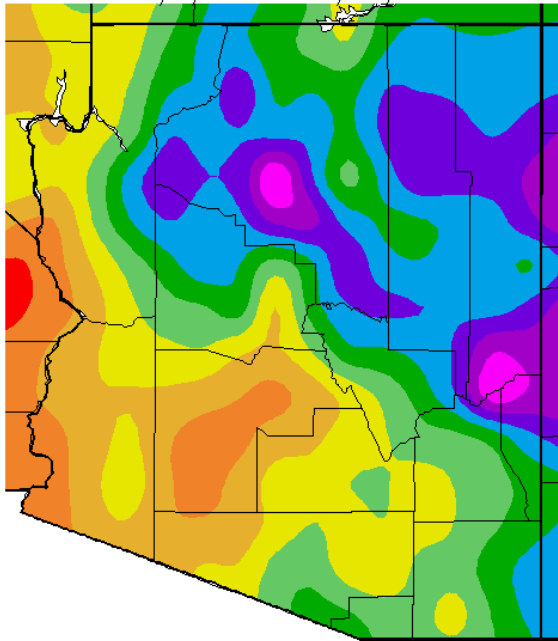
Percent of Average Precipitation (%)
7/1/2013 – 7/31/2013



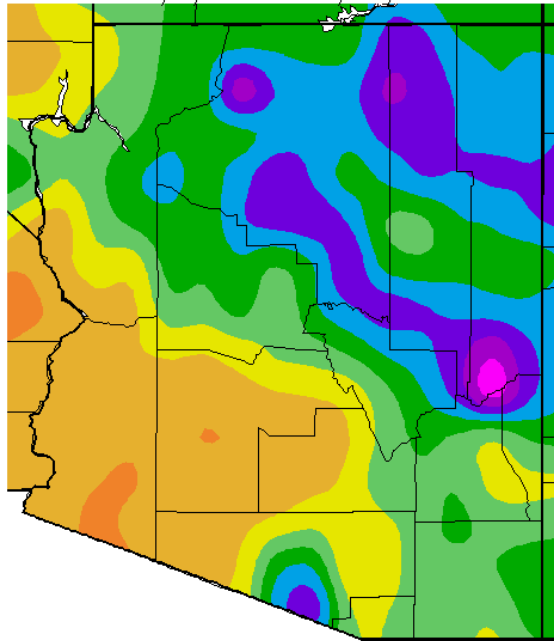
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July minimum temperatures were 0-4°F warmer than normal in most areas of the state with even warmer conditions in western Arizona and a couple pockets of cooler than average temperatures near Lake Powell and in central Pima County. Daytime temperatures were quite variable but mostly 1-4°F cooler than normal in all but the western counties. Yuma County was 1-4°F warmer than normal. July precipitation made up for the dry conditions in July with much of the state over 150% of normal. The dry spots were Mohave County, western Maricopa County and southern Gila County. Flagstaff had the 2nd wettest July on record. The cooler temperatures in the daytime were likely due to the frequent thunderstorms.

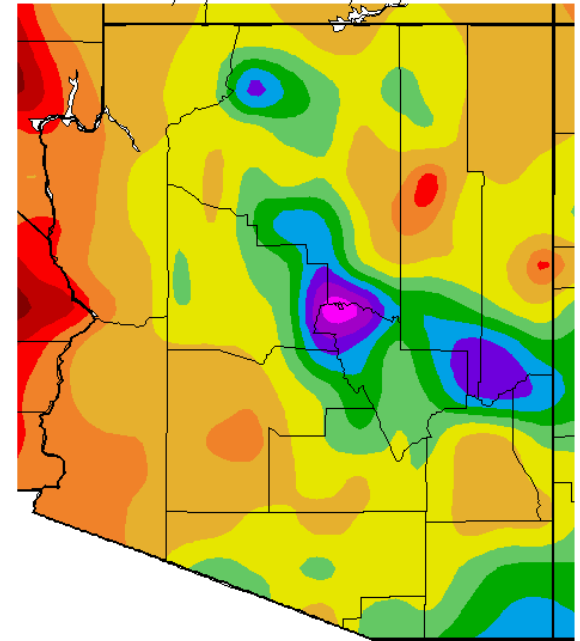
Av. Min. Temperature (deg. F)
1/1/2013 - 7/31/2013



Av. Max. Temperature (deg. F)
1/1/2013 - 7/31/2013



Total Precipitation (in.)
1/1/2013 - 7/31/2013

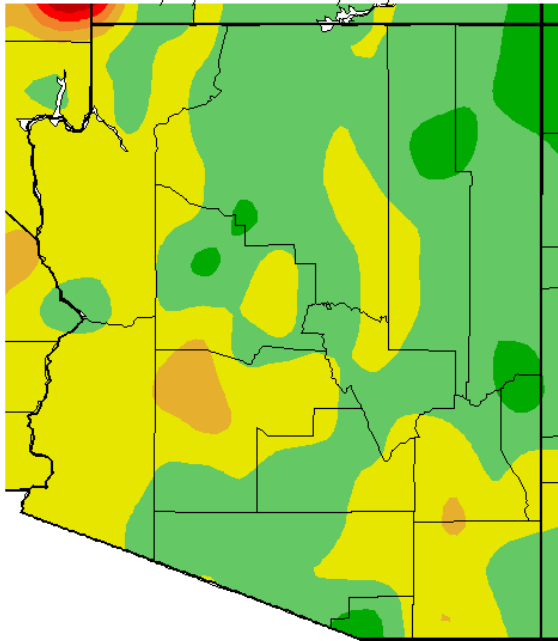


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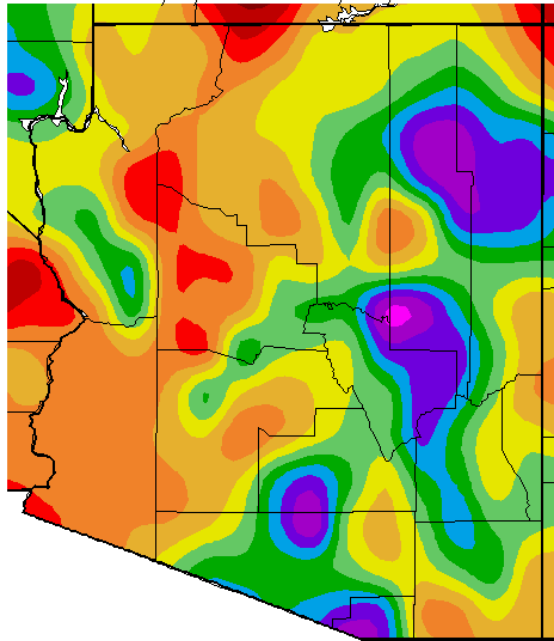
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Av. Min. Temperature dep from Ave (deg. F)
1/1/2013 – 7/31/2013



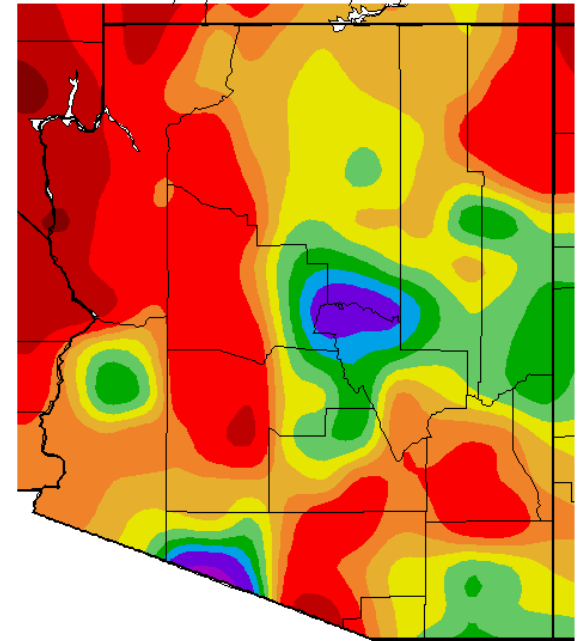
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Av. Max. Temperature dep from Ave (deg F)
1/1/2013 – 7/31/2013



-2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5
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Percent of Average Precipitation (%)
1/1/2013 – 7/31/2013

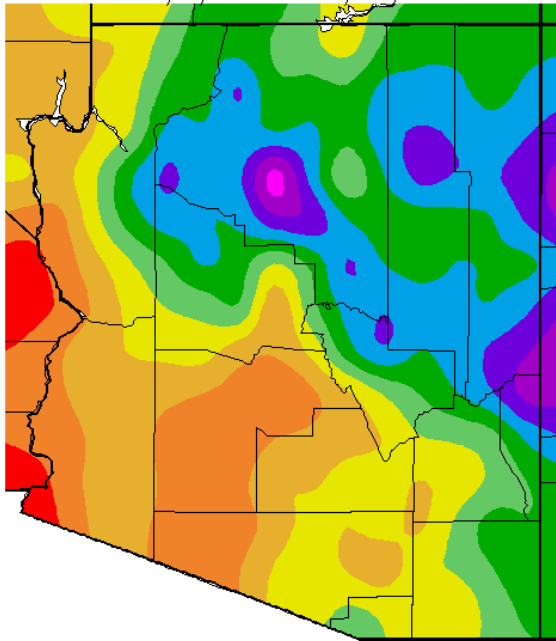


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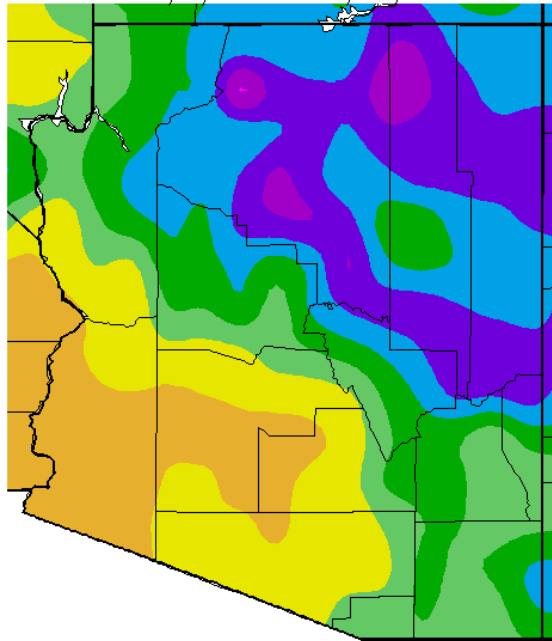
Calendar Year 2013

So far the calendar year has been 0-2°F colder than average for nighttime temperatures across the Colorado Plateau and eastern Arizona, as well as Pinal and western Pima counties. Daytime temperatures have been highly variable around the state. Yuma, La Paz, Yavapai and along the Mohave-Coconino county border were 1-2°F warmer than normal while the rest of the state has been near normal or 1-2.5°F cooler than normal. Precipitation has been less than 70% of normal in Mohave, western Maricopa, western Yavapai, western Coconino, central Pima, and northern Apache counties. The wet spot for the year is still northern Gila County, though there was significant improvement to the dry conditions from the July rainfall.

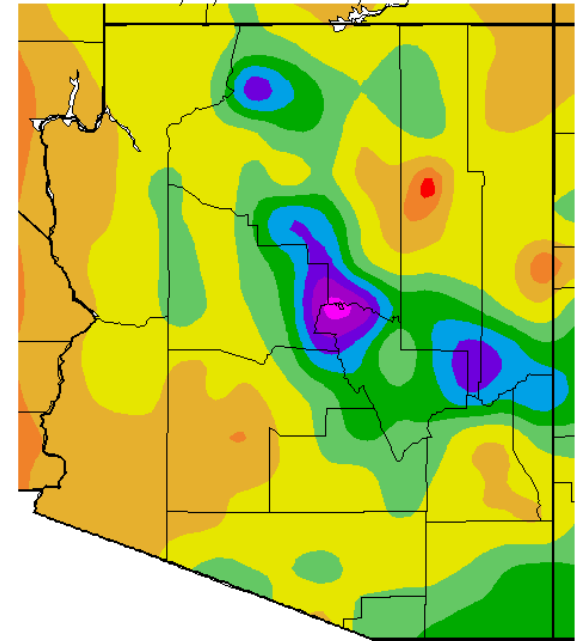
Av. Min. Temperature (deg. F)
10/1/2012 - 7/31/2013



Av. Max. Temperature (deg. F)
10/1/2012 - 7/31/2013



Total Precipitation (in.)
10/1/2012 - 7/31/2013

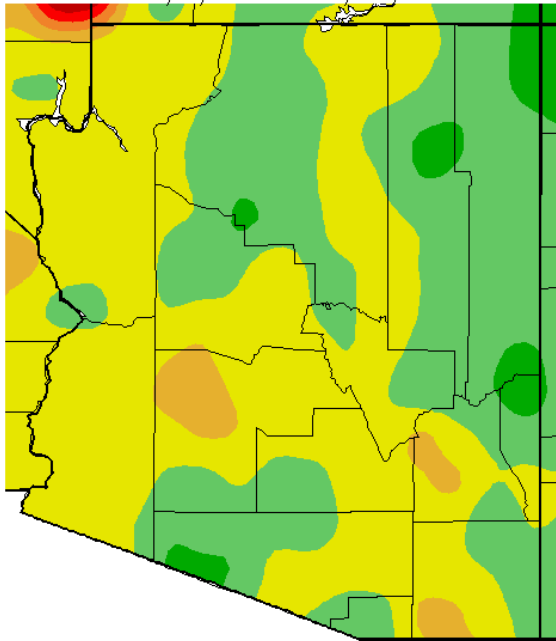


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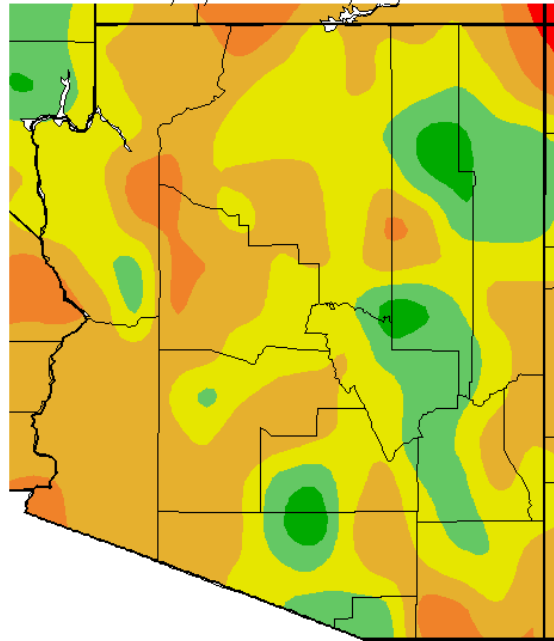
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Av. Min. Temperature dep from Ave (deg. F)
10/1/2012 - 7/31/2013



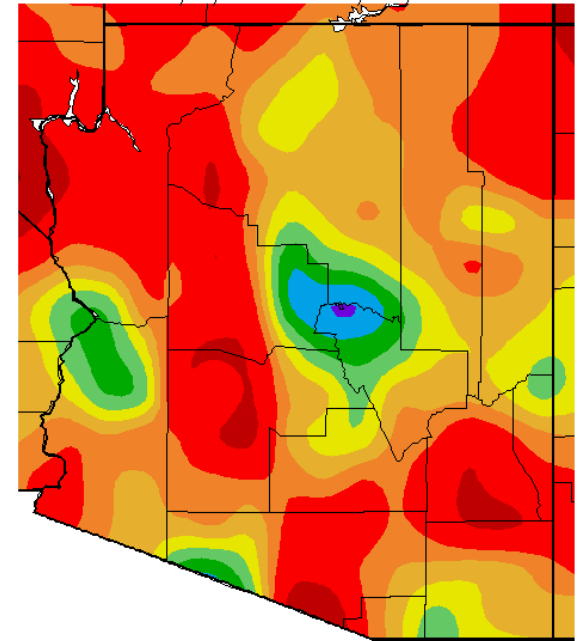
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Av. Max. Temperature dep from Ave (deg F)
10/1/2012 - 7/31/2013



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Percent of Average Precipitation (%)
10/1/2012 - 7/31/2013

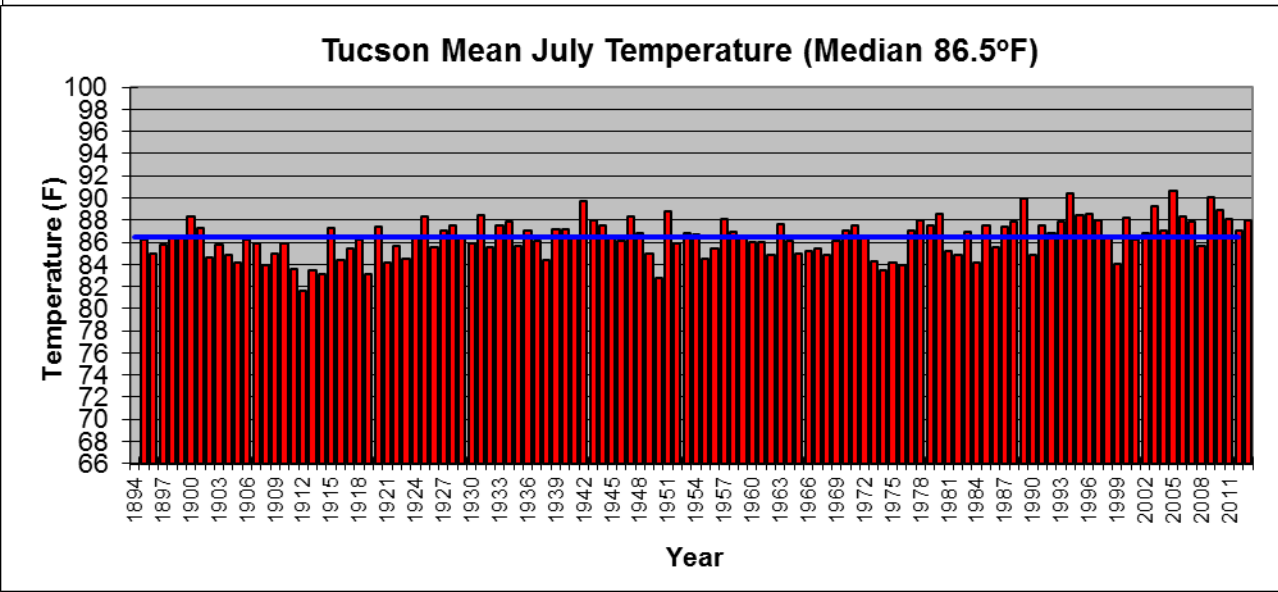
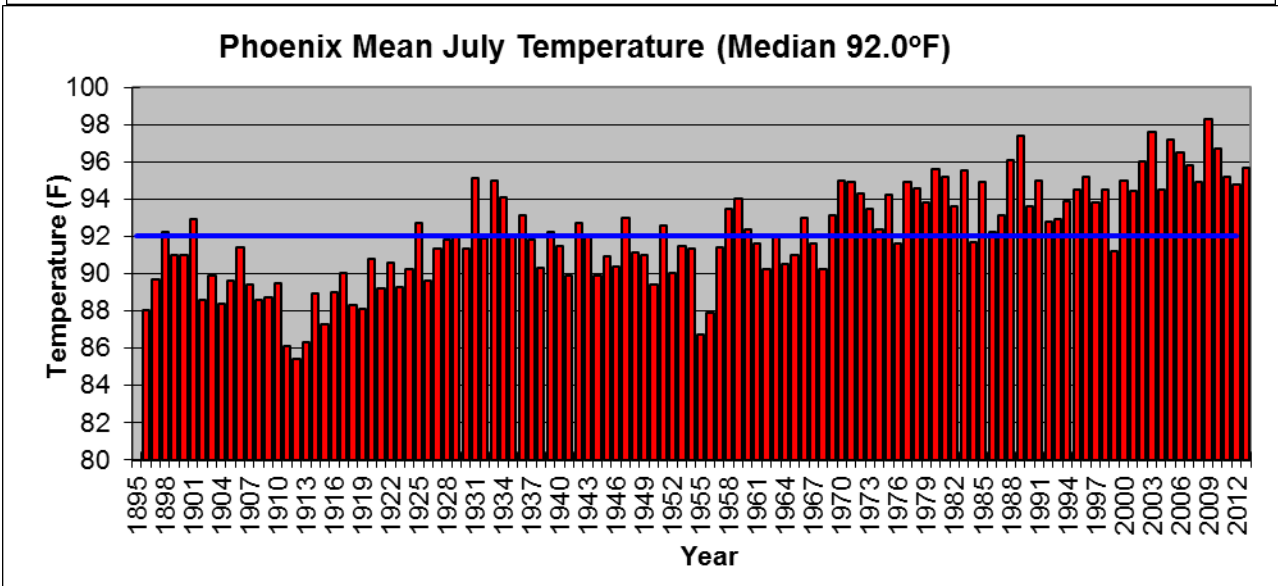
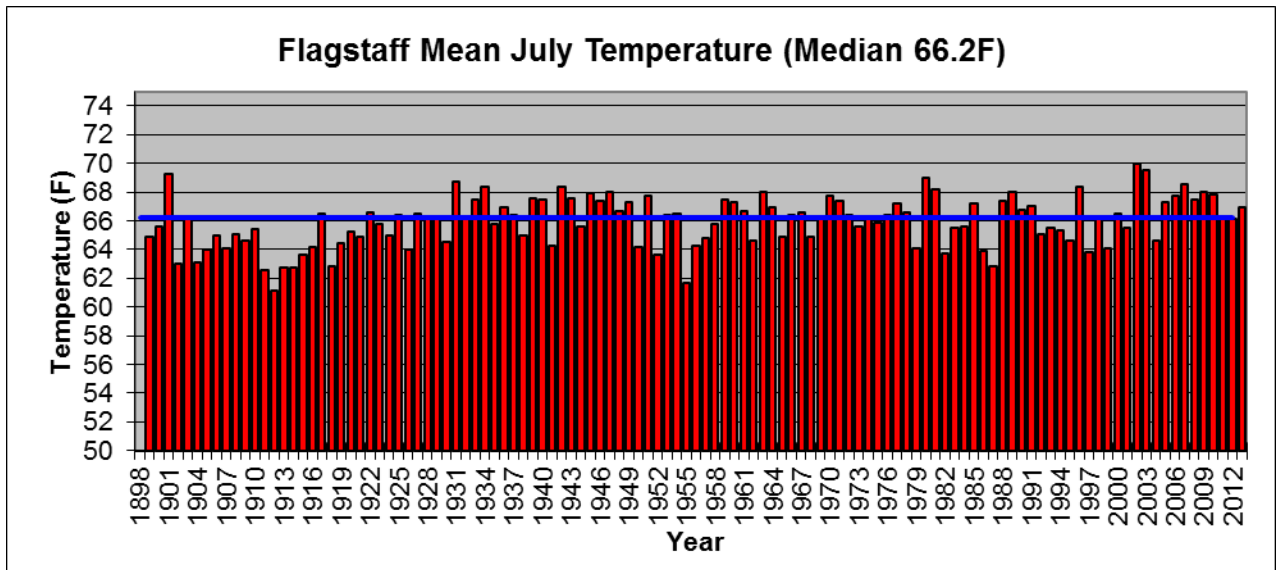


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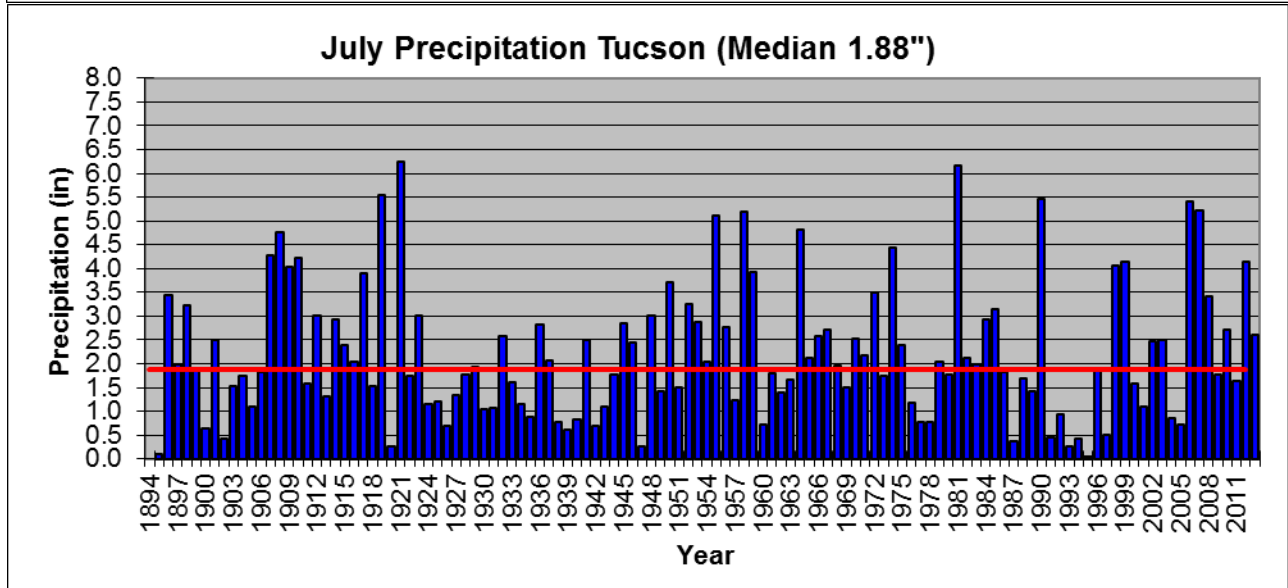
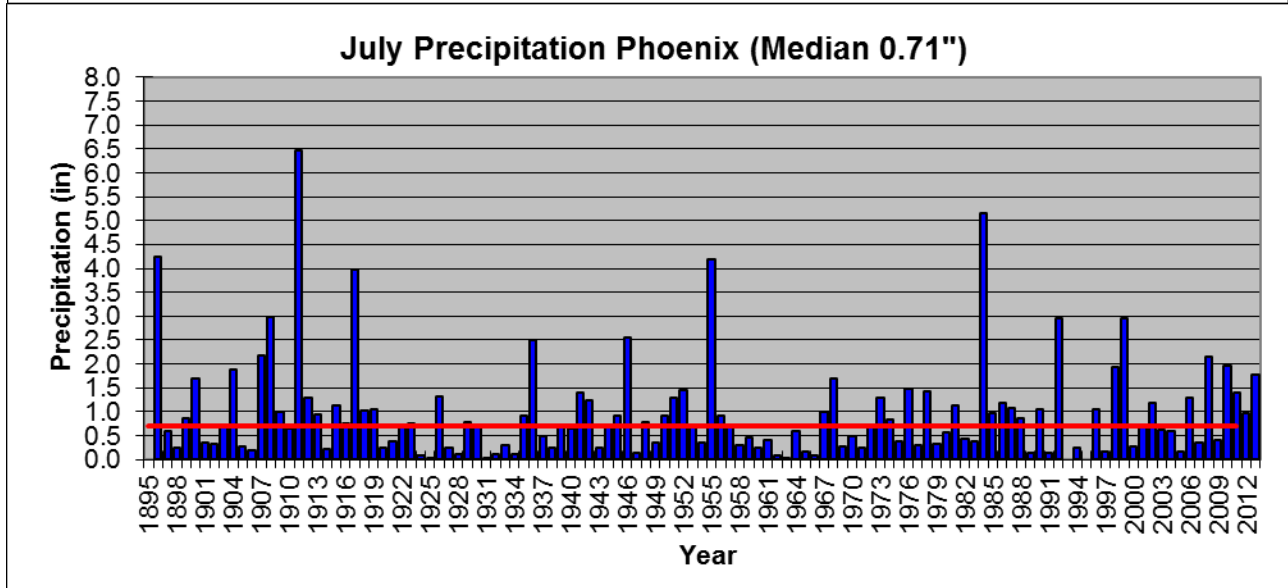
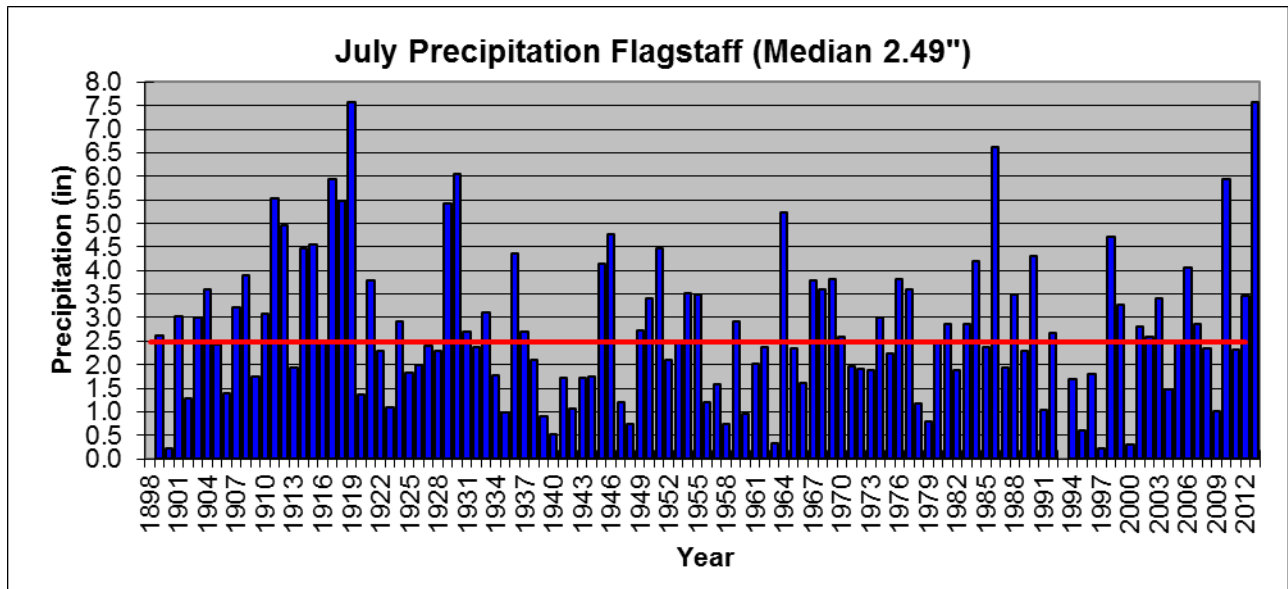
2013 Water Year

Minimum temperatures continue to be within 2°F of normal across the state, with the cooler locations in Coconino, Apache, Navajo, and western Pima counties. Maximum temperatures were 0-2°F normal in western Arizona, and 0-2°F in a few locations in eastern and southern Arizona. The water year precipitation totals now reflect the wet July conditions, so the area with less than 70% of normal has been reduced. But the spotty nature of the July precipitation results in alternating areas of wetter and drier conditions. Only the Gila/Coconino/Yavapai borders and the La Paz/Mohave County border are wetter than normal.

July Mean Temperature Graphs – Flagstaff, Phoenix, and Tucson 1895-2013:

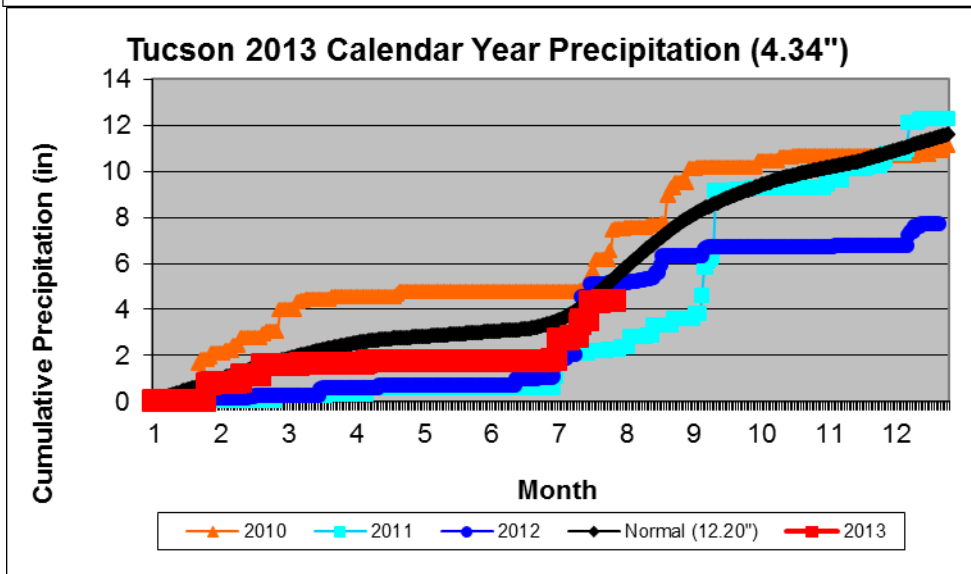
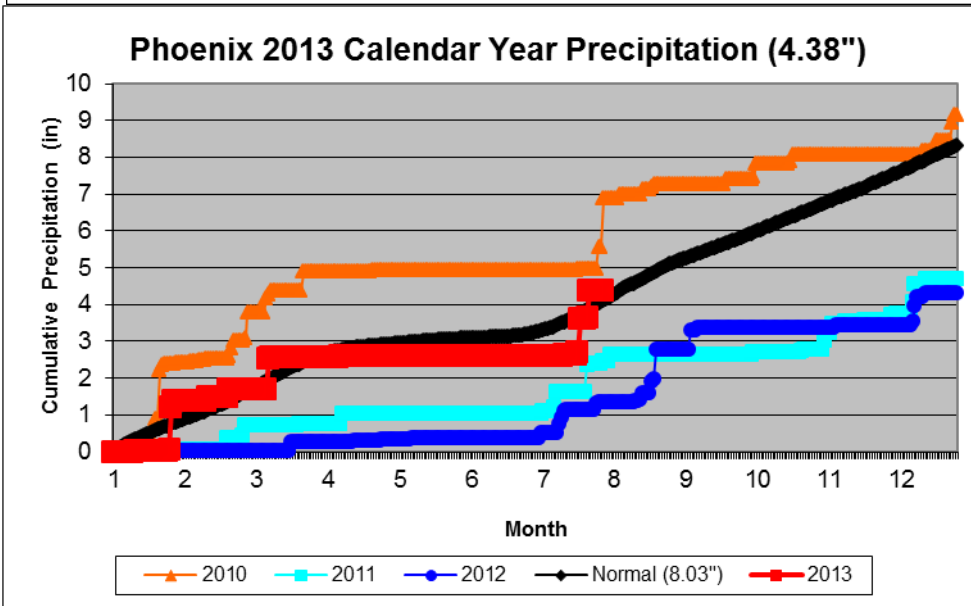
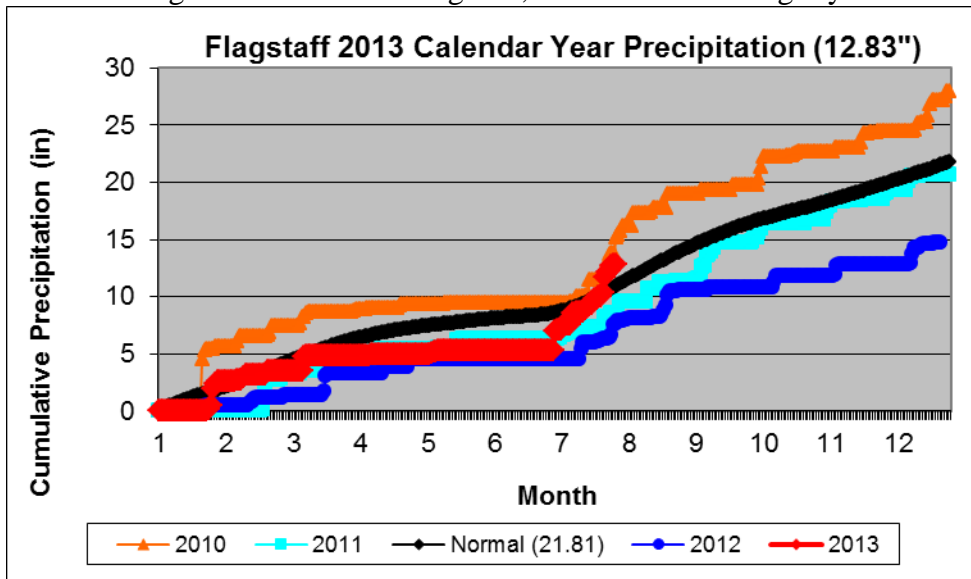


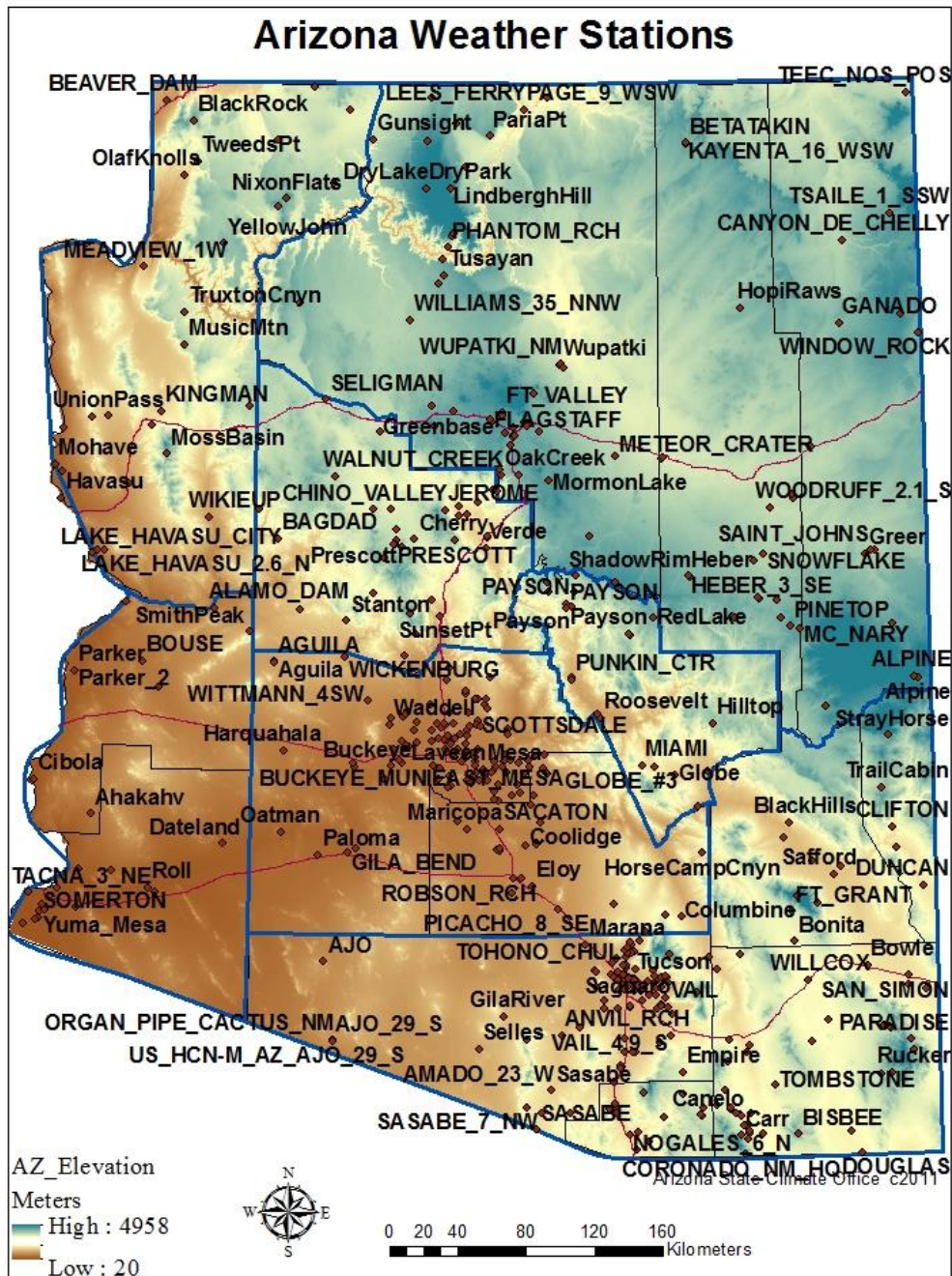
July Mean Precipitation Graphs – Flagstaff, Phoenix, and Tucson 1895-2013:



2013 Cumulative Precipitation Graphs – Flagstaff, Phoenix and Tucson:

Precipitation is near or above average in Phoenix and Flagstaff, while Tucson is slightly below average.





The downloadable normals and extremes calendars use the following abbreviations:

- NORM = 30 year (1971-2000) 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)