



Arizona Climate Summary

September 2012

Summary of conditions for August 2012

August 2012 Temperature and Precipitation Summary

August 1st – 15th: During the month of August, at least one location received rainfall each day of the month except August 2nd. On the 1st, the northeast and the high elevations of eastern Arizona received rainfall as high pressure moved over western Texas, creating a southerly flow of moist air. On the 2nd the high moved further east, but both northern and southern Arizona had rain, and through the rest of that week showers occurred along the Mogollon Rim, as well as northern and southern Arizona. Only central and southwestern Arizona dried out. By the 6th, the high pressure returned to western Texas bringing moisture briefly into central Arizona. From the 8th through the 14th, the high moved directly over Arizona, keeping the central counties dry, while scattered, light monsoon activity continued around the borders of the state. The dry conditions in central and southern Arizona allowed temperatures to rise to record levels. Phoenix set 4 high temperature records, and from the 6th through the 14th, daytime temperatures remained at or above 110°F, much warmer than normal. The moisture returned statewide on the 15th, as the high moved over New Mexico, then the Four Corners, then down over northern Mexico.

August 16th – 31st: From the 16th through the 24th, dew points remained high statewide bringing rainfall across the state and lowering temperatures. On the 16th, Bisbee had 1.80", Bellemont had 1.54"; on the 17th Petrified Forest had 1.22"; on the 19th Bowie had 1.08"; on the 20th Bisbee-Douglas AP had 1.11"; on the 22nd Casa Grande had 3.00", South Mountain had 1.43" and Seligman had 1.50"; on the 23rd Carefree had 1.80", Saint Johns had 1.48", Bellemont had 1.45" and Seligman had 1.53". The peak temperature during this time was 110°F at Bullhead City on the 19th. During the last week of the month Bellemont had 1.17" on the 25th and 1.66" of rain on the 26th. Rainfall totals dropped below an inch after the 26th, though activity continued in the southern, eastern, and northern counties. Humidity remained high, and temperatures rebounded above 110°F through the end of the month.

In This Issue: Overview of August, graphs of the August daily maximum and minimum temperatures, precipitation, mean daily dew points for Flagstaff, Phoenix, and Tucson; August climate statistics, maps of mean monthly maximum and minimum temperatures, precipitation, dew points, wind speeds for August; and graphs of the mean August 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.

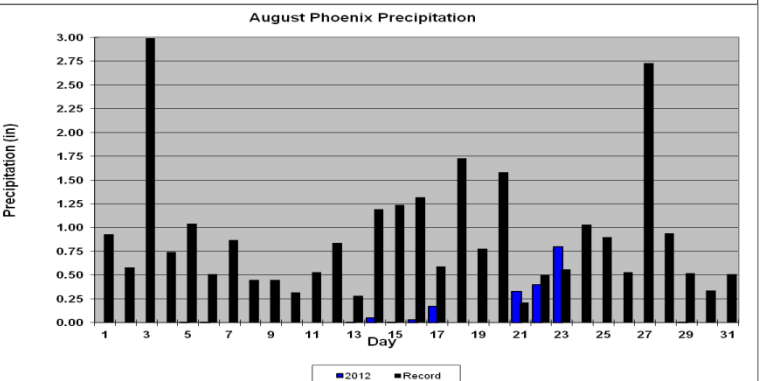
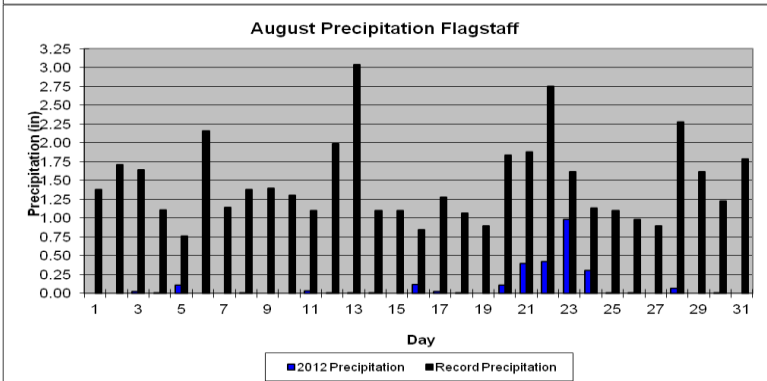
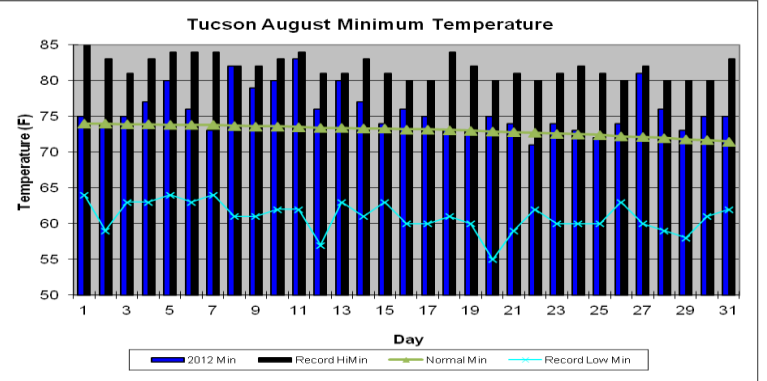
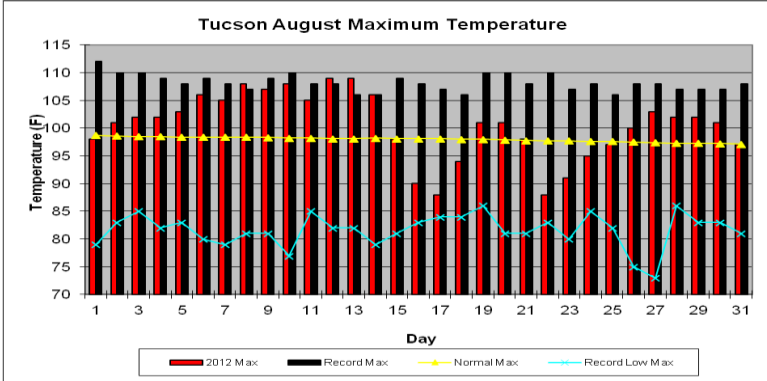
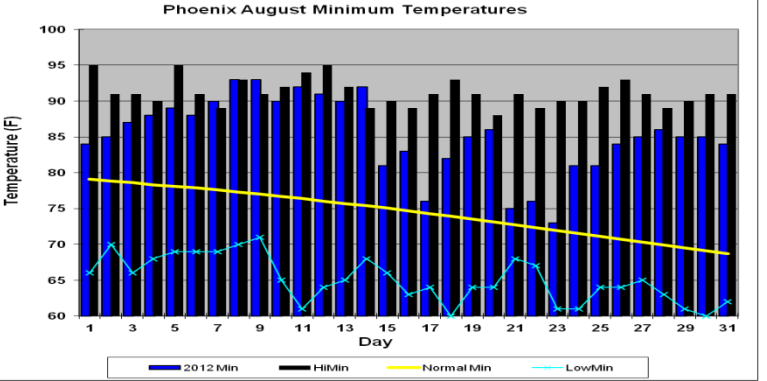
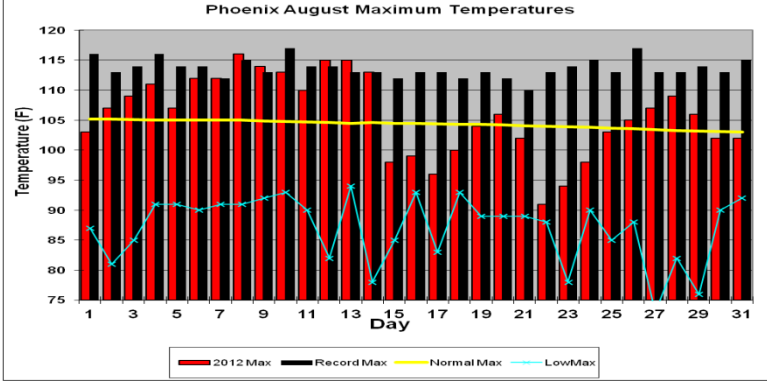
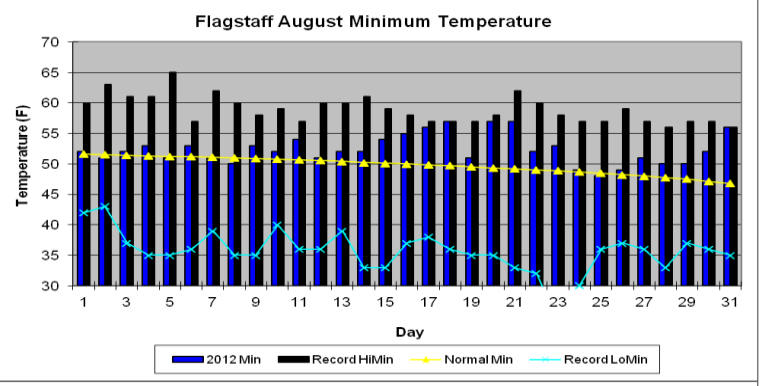
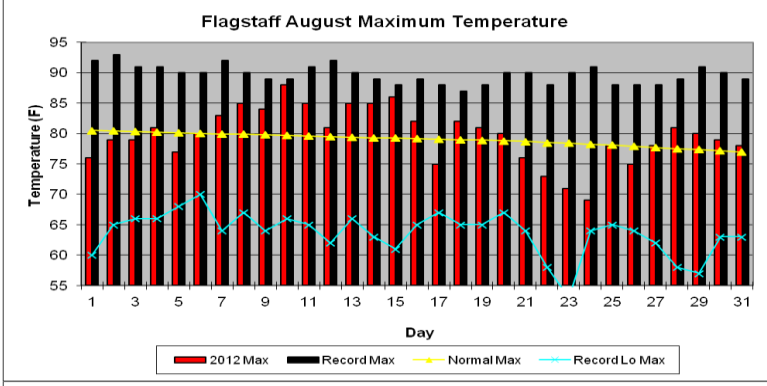
****Note:** The discrepancy between the Statewide Temperature and Precipitation values for Phoenix, Flagstaff and Tucson and the daily values in their graphs are due to the reporting times. Statewide Temperature and Precipitation values are taken at 5pm, while official daily records at the airports are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

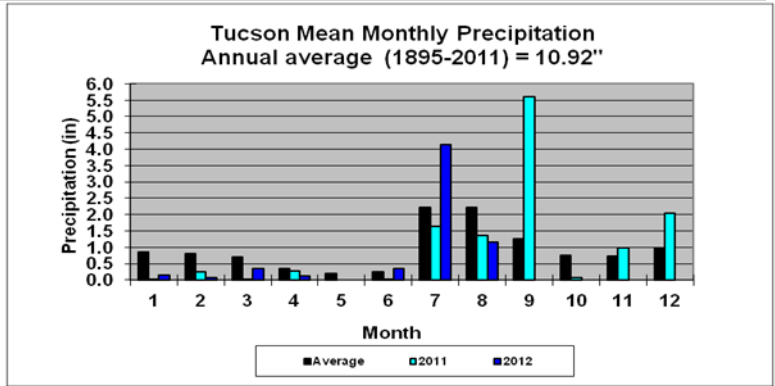
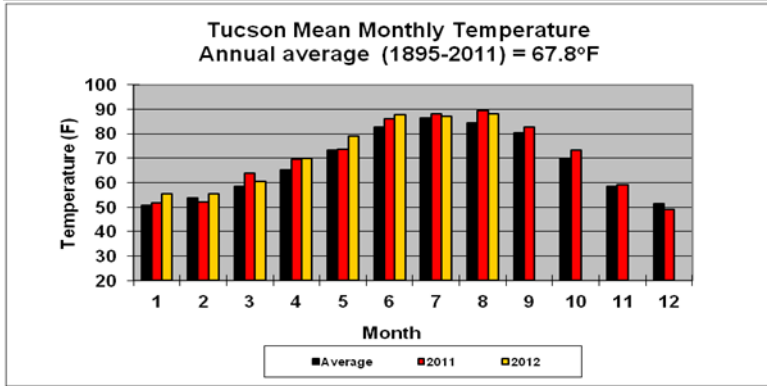
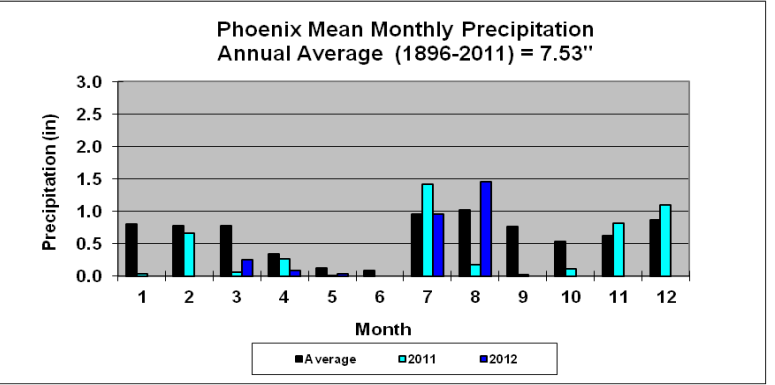
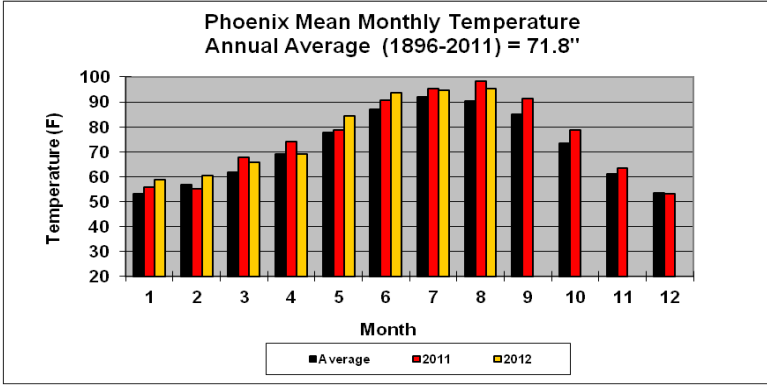
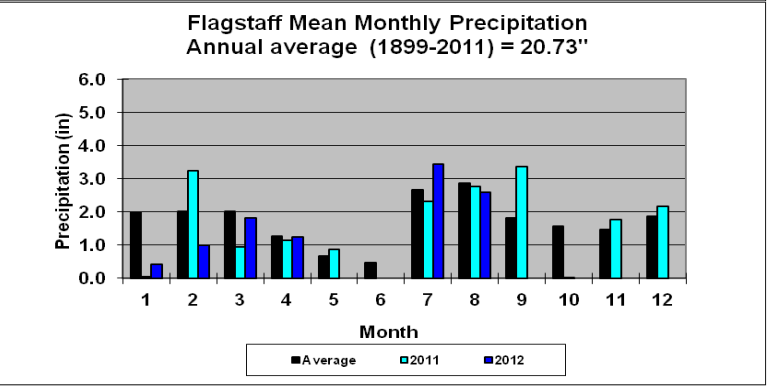
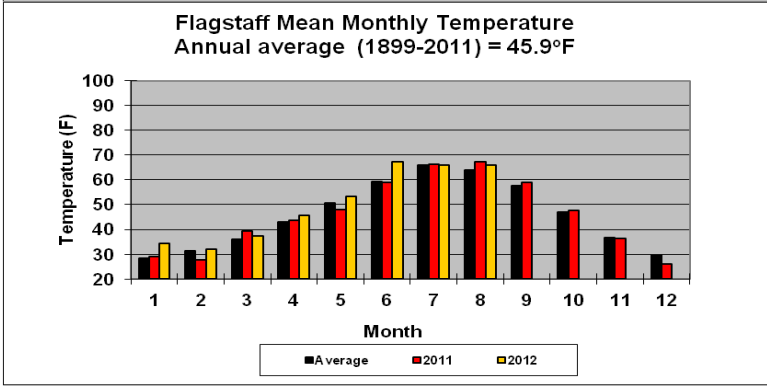
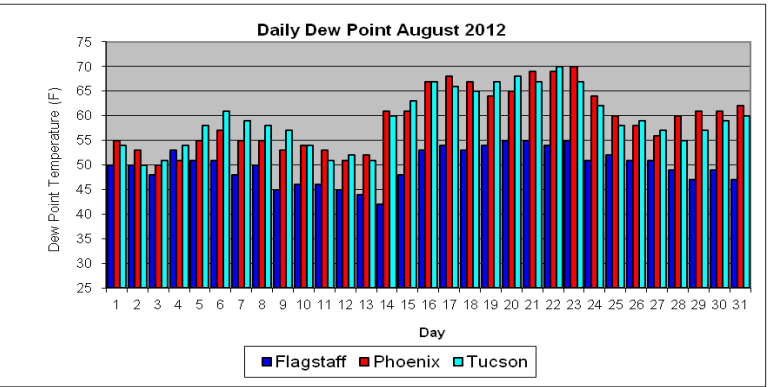
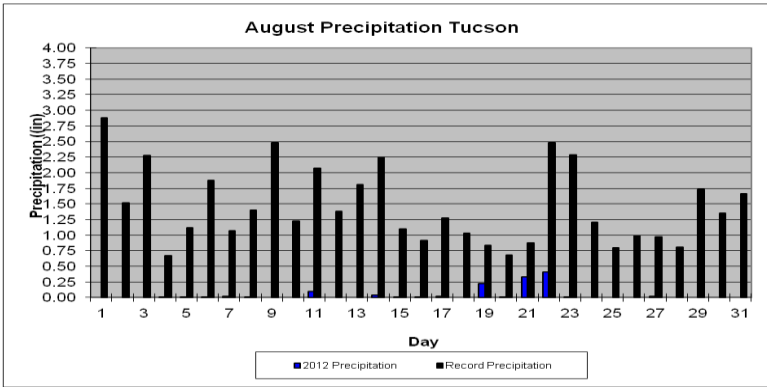
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August 2012 Daily Temperature, Precipitation, & Dew Point for Flagstaff, Phoenix, and Tucson





FLAGSTAFF CLIMATE STATISTICS

August 2012

This August was tied for 18th warmest on record and had no significant ranking for precipitation

Avg Max Temp (F)	79.7	Normal	78.4
Avg Min Temp (F)	52.3	Normal	50.1
Avg Mean Temp (F)	66.0	Normal	64.2
Departure from Normal (F)	+1.8		

Highest Monthly Avg Temp (F) 67.5 in 1944
 Lowest Monthly Avg Temp (F) 59.5 in 1968

Highest Temp this month (F): 88 on 10th
 Lowest Temp this month (F): 48 on 25th

Record High (F): 93 on 08/02/1902
 Record Low (F): 24 on 08/23/1968

Temperature or precipitation records this month:
 18th HiMin 57 tied, first set in 2010
 31st HiMin 56 tied, first set in 2008

Flagstaff Number of Days of:

Minimum Temp 50° or lower	7
Minimum Temp 55° or higher	5
Maximum Temp 75° or lower	5

Maximum Temp 85° or higher 6

Heating Degree Days	18	Normal	56
Cooling Degree Days	58	Normal	33
Degree base 65°F			

Total August Precipitation	2.59"
Normal August Precipitation	3.11"
Departure from normal	-0.52"
Greatest 24-Hr Precipitation	1.21" 8/22-23
Total Precipitation Year-to-Date	10.50"
Departure from Normal	-3.69"

Number of Days:

Clear	20
Partly Cloudy	11
Cloudy	0

Greatest August Precipitation	8.77" in 1904
Least August Precipitation	0.26" in 1962

Average Wind Speed	3.7 mph
Highest Peak Gust	62 mph from 260° on 30 th

PHOENIX CLIMATE STATISTICS

August 2012

This August was the 4th warmest and 27th wettest on record

Avg Max Temp(F)	105.8	Normal	104.4
Avg Min Temp(F)	84.9	Normal	82.7
Avg Mean Temp (F)	95.3	Normal	93.6
Departure from Normal (F)	+1.7		

Highest Monthly Avg Temp (F) 98.3 in 2011
 Lowest Monthly Avg Temp (F) 84.6 in 1918

Highest Temp this month (F): 116 on 8th
 Lowest Temp this month (F): 73 on 23rd

Record High (F): 117 on 08/26/2011
 Record Low (F): 58 on 08/20/1917

Temperature or precipitation records set this month:
 7th HiMax 112 tied, first set in 1940.
 7th HiMin 90 set, previous record 89 in 2006.

8th HiMax 116 set, previous record 115 set in 1940
 8th HiMin 93 tied, first set in 2003
 9th HiMax 114 set, previous record 113 set in 1933
 9th HiMin 93 set, previous record 91 set in 2003
 12th HiMax 115 set, previous record 114 set in 2007
 13th HiMax 115 set, previous record 113 set in 2003
 14th HiMax 113 tied, first set in 1988
 14th HiMin 92 set, previous record 89 in 2002
 21st Precip 0.33" set, previous record 0.21" in 1988
 23rd Precip 0.80" set, previous record 0.56" in 1982

Phoenix Number of Days of:

Minimum Temp 80° or lower	4
Minimum Temp 90° or higher	7
Maximum Temp 100° or lower	7
Maximum Temp 110° or higher	10

Heating Degree Days	0	Normal	0
Cooling Degree Days	948	Normal	885
Degree base 65°F			

Total August Precipitation	1.45"
Normal August Precipitation	1.00"
Departure from normal	+0.45"
Greatest 24-Hr Precipitation	0.80" on 8/23
Total Precipitation Year-to-Date	2.77"
Departure from Normal	-2.51"

Cloudy	0
Greatest August Precipitation	5.33" in 1951
Least August Precipitation	0.00" in 1973, 1975, 2002
Average Wind Speed	6.4 mph
Highest Peak Gust	44 mph from 160° on 14 th

Number of Days:

Clear	6
Partly Cloudy	25

TUCSON CLIMATE STATISTICS
August 2012

This August was the 4th warmest and 28th driest on record.

Avg Max Temp(F)	100.5	Normal	97.4
Avg Min Temp(F)	75.8	Normal	73.3
Avg Mean Temp(F)	88.2	Normal	85.3
Departure from Normal (F)	+2.9		

Highest Monthly Avg Temp (F)	90.2 in 1994
Lowest Monthly Avg Temp (F)	80.8 in 1923

Highest Temp this month (F):	109 on 12 th , 13 th
Lowest Temp this month (F):	71 on 22 nd

Record High (F):	112 on 08/01/1993
Record Low (F):	55 on 08/20/1917

Temperature or precipitation records this month:
8th HiMax 108 set, previous record 107 in 1995
8th HiMin 82 tied, first set in 1980
12th HiMax 108 set, previous record 108 in 1993
13th HiMax 109 set, previous record 106 in 1996
14th HiMax 106 tied, first set in 1998

Tucson Number of Days of:

Minimum Temp 70° or lower	0
Minimum Temp 80° or higher	6
Maximum Temp 95° or lower	5
Maximum Temp 105° or higher	9

Heating Degree Days	0	Normal	0
Cooling Degree Days	725	Normal	631
Degree base 65°F			

Total August Precipitation	1.17"
Normal August Precipitation	2.39"
Departure from normal	-1.22"

Greatest 24-Hr Precipitation	0.63" on 8/21-22
Total Precipitation Year-to-Date	6.32"
Departure from Normal	-1.65"

Greatest August Precipitation	7.93" in 1955
Least August Precipitation	0.08" in 1924

Number of Days:

Clear	24
Partly Cloudy	3
Cloudy	4

Average Wind Speed	5.9 mph
Highest Peak Gust	56 mph from 030° on 22 nd

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

Winds for August:

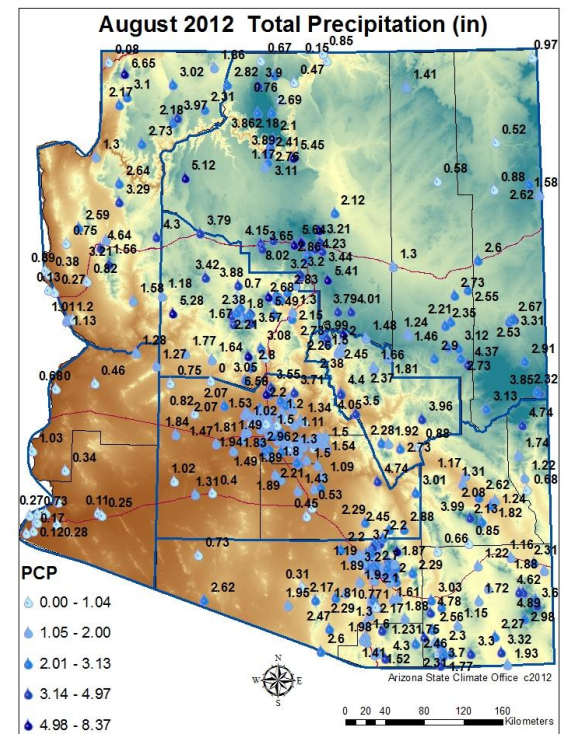
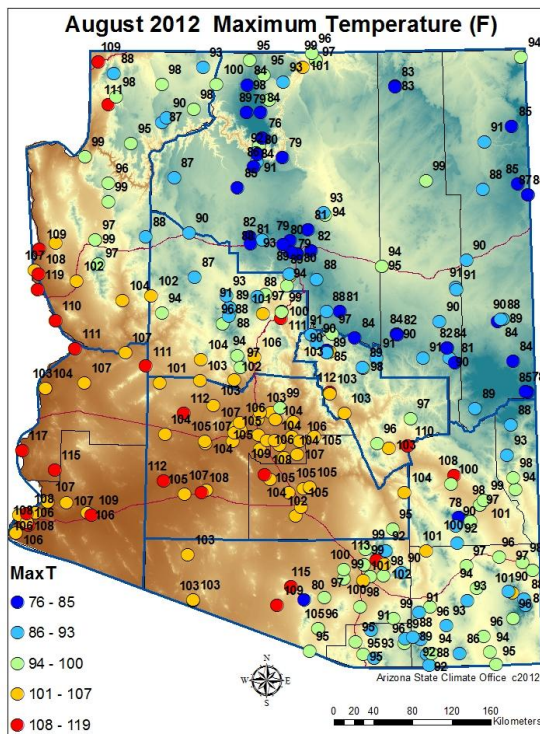
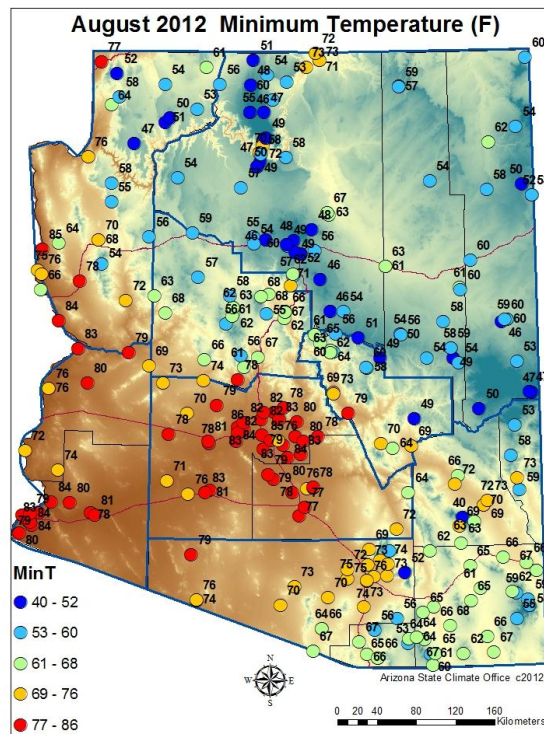
Day (mph)	Phoenix		Flagstaff		Tucson	
	Avg	Max	Avg	Max	Avg	Max
1	6.9	25	4.4	20	4.2	18
2	4.4	22	4.4	23	4.2	20
3	5.5	22	3.8	22	3.9	31
4	5.3	22	2.7	8	6	35
5	6.7	36	2.5	30	6.7	33
6	6	25	3.5	24	5.7	28
7	6.3	21	2.1	18	5.3	25
8	8.2	32	2	35	8.7	47
9	4.6	21	3.1	15	6.4	22
10	5.5	20	4.3	25	8.3	33
11	5.6	26	3	40	5.2	46
12	5	17	3	35	5.5	26
13	6.7	33	2.7	24	7.8	41
14	6.1	44	3.3	25	8.8	33
15	8.4	28	5.4	24	7.4	38
16	8.1	28	7	15	4.3	22
17	6.6	31	5.8	21	4.3	23
18	7	23	2.4	17	6	18
19	7.3	32	2.8	18	5.4	40
20	7.5	22	4.4	24	4.7	47
21	10.3	36	3.5	25	4.8	40
22	6.9	22	3.5	23	5.1	56
23	6.6	35	5.9	24	4.6	21
24	5.9	17	4.6	24	6.1	20
25	5	18	2.3	24	5.3	28
26	4.5	21	2.1	26	5.9	23
27	4.1	17	1.9	22	6	35
28	6	23	2.2	17	9.8	32
29	6.2	24	3.9	21	5.8	24
30	9	29	5	62	5.2	28
31	5.6	29	5.7	26	4.5	24

Dew Points for August:

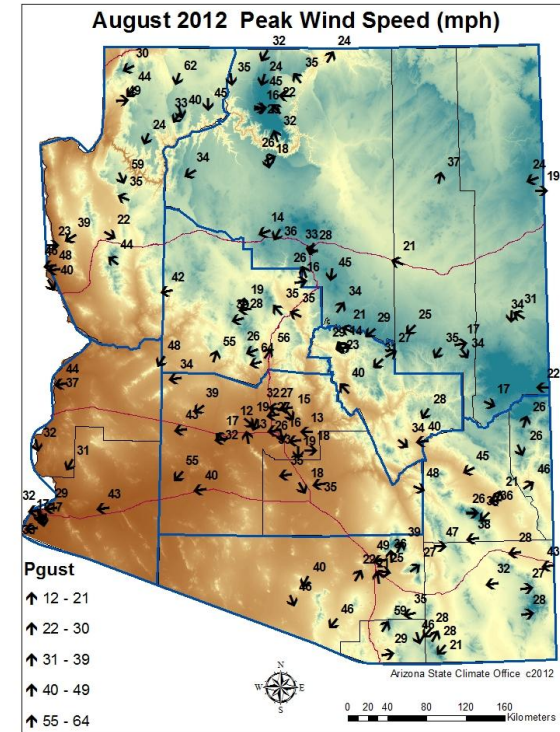
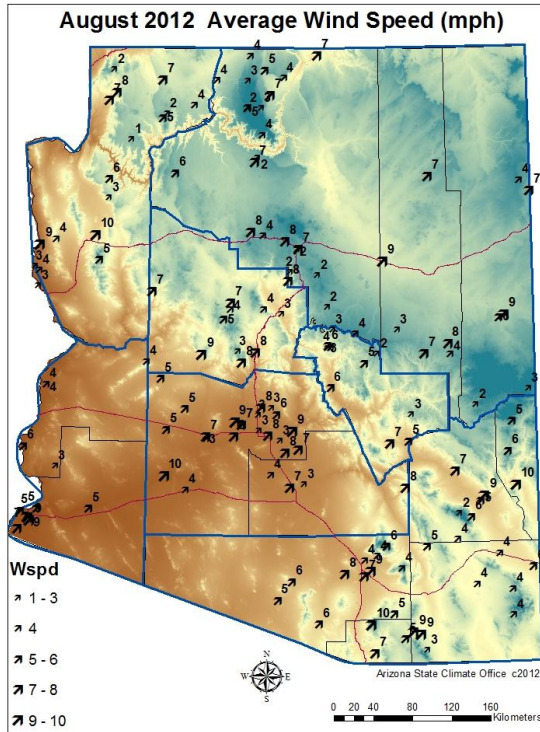
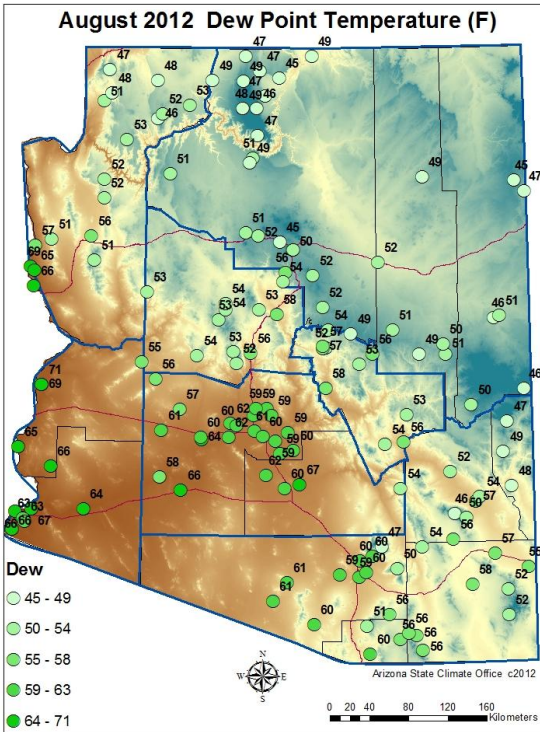
Daily Average Dew Point (°F):

Day	Phx	Tuc	Flg
1	55	54	50
2	53	50	50
3	50	51	48
4	51	54	53
5	55	58	51
6	57	61	51
7	55	59	48
8	55	58	50
9	53	57	45
10	54	54	46
11	53	51	46
12	51	52	45
13	52	51	44
14	61	60	42
15	61	63	48
16	67	67	53
17	68	66	54
18	67	65	53
19	64	67	54
20	65	68	55
21	69	67	55
22	69	70	54
23	70	67	55
24	64	62	51
25	60	58	52
26	58	59	51
27	56	57	51
28	60	55	49
29	61	57	47
30	61	59	49
31	62	60	47

August 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.

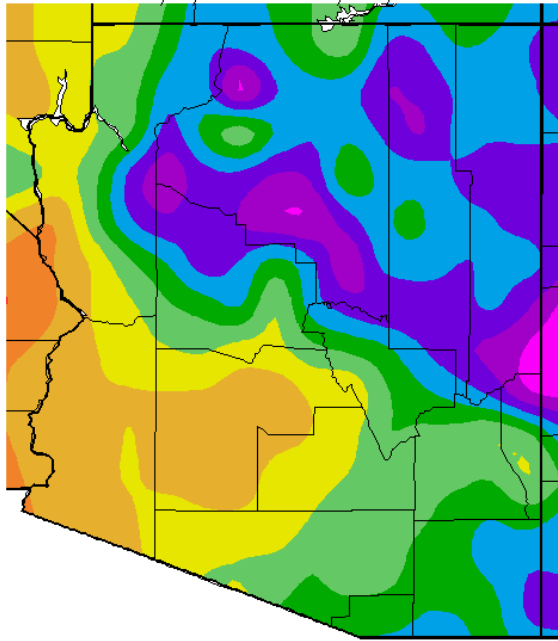


Average nighttime temperatures ranged from 40°F at Columbine to 86°F at Glendale Airport. Average daytime temperatures ranged from 76°F at Bright Angel Ranger Station at the bottom of the Grand Canyon to 119°F at Lake Havasu City. Precipitation values ranged from 0" to 8.37" at Sollers and 8.02" at Bellemont.

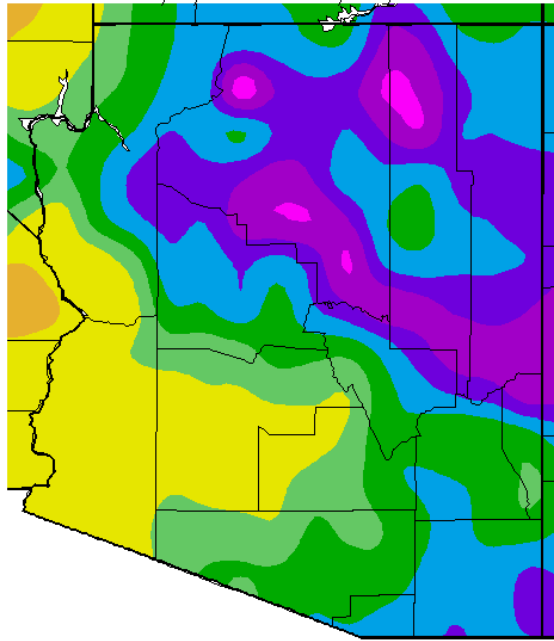


Average monthly dew points ranged from 75°F at Parker 45°F at Flagstaff, Piney Hill and Paria Point in northern Arizona. Average winds were light, with 10 mph as the highest average at Guthrie, Oatman, Hopkins and Kingman. The highest peak wind gust was 64 mph at Humbug Creek.

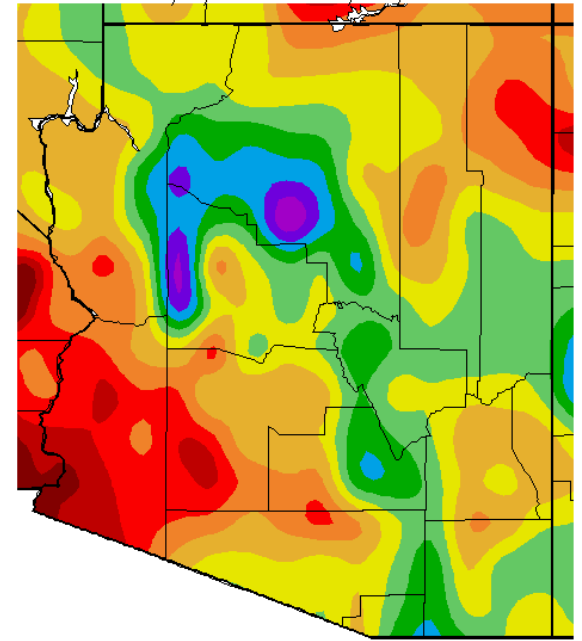
Av. Min. Temperature (deg. F)
8/1/2012 – 8/31/2012



Av. Max. Temperature (deg. F)
8/1/2012 – 8/31/2012



Total Precipitation (in.)
8/1/2012 – 8/31/2012

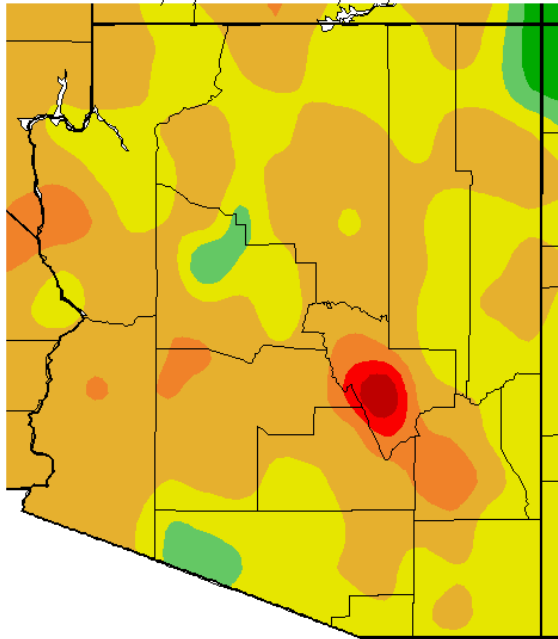


50 55 60 65 70 75 80 85 90 95 100
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80 85 90 95 100 105 110 115 120 125 130
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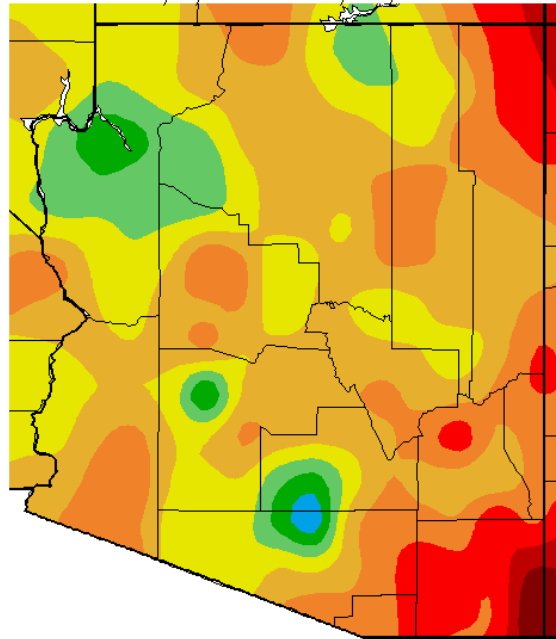
0.1 0.25 0.5 1 1.75 2.5 3.25 4 4.75 5.5 6.25
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Av. Min. Temperature dep from Ave (deg. F)
8/1/2012 – 8/31/2012



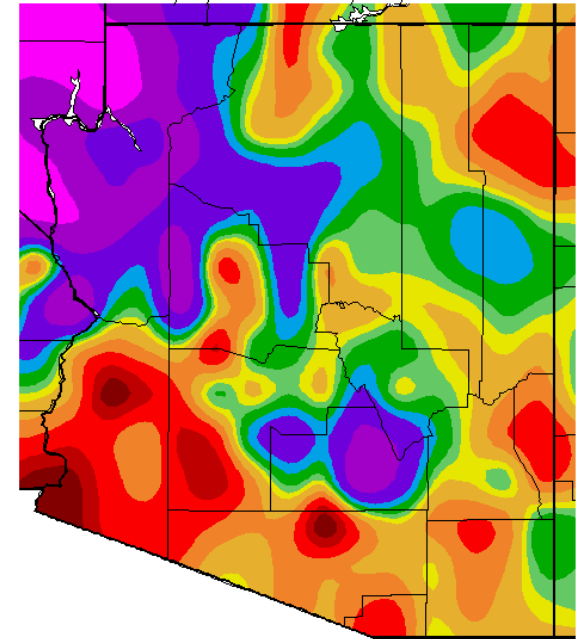
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Av. Max. Temperature dep from Ave (deg F)
8/1/2012 – 8/31/2012



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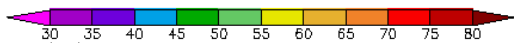
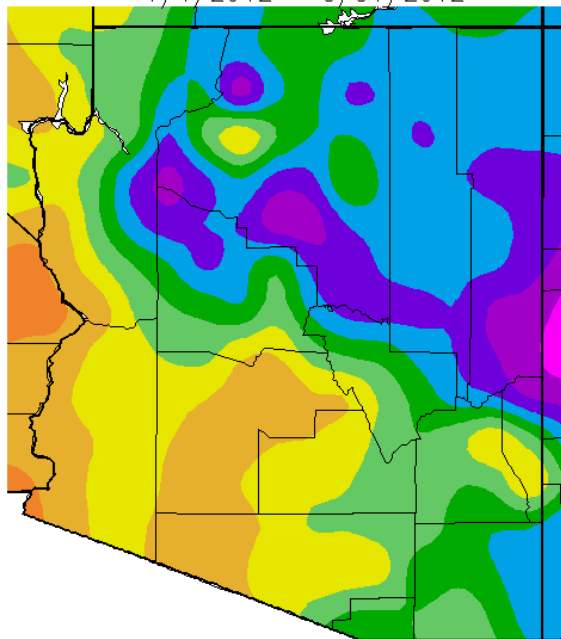
Percent of Average Precipitation (%)
8/1/2012 – 8/31/2012



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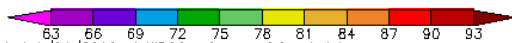
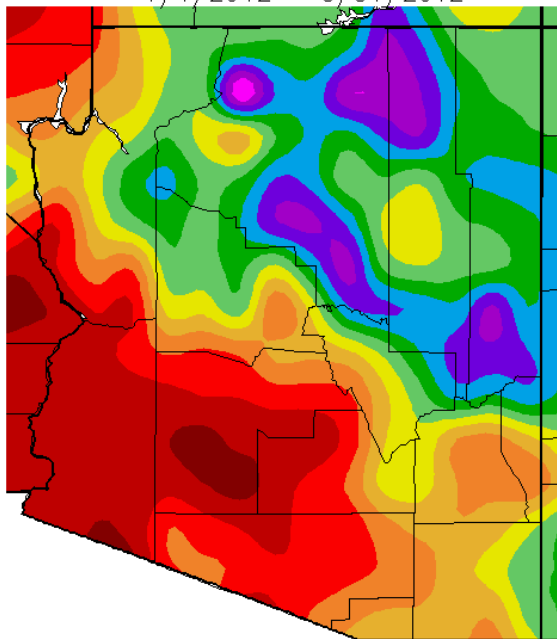
August minimum temperatures were 2 to 4°F warmer than normal statewide, with very warm conditions in Gila County. Daytime temperatures were 1 to 4°F warmer than normal in the eastern half of the state and near average or slightly cooler than average in the western counties. Precipitation for August was highly variable across the state. The northeast was much wetter than normal while southern and southeastern Arizona were much drier than normal. Pinal County was very wet in August, while northern Apache County had less than 50% of their normal August rainfall.

Av. Min. Temperature (deg. F)
1/1/2012 – 8/31/2012



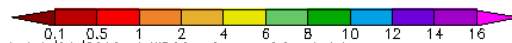
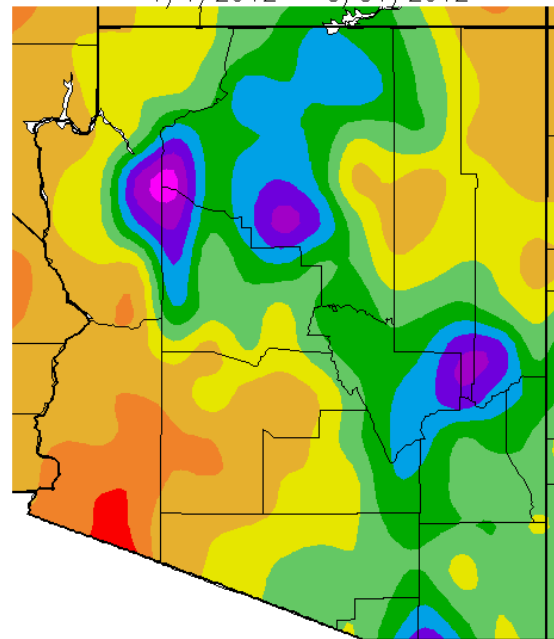
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Av. Max. Temperature (deg. F)
1/1/2012 – 8/31/2012



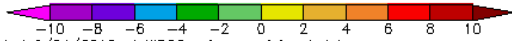
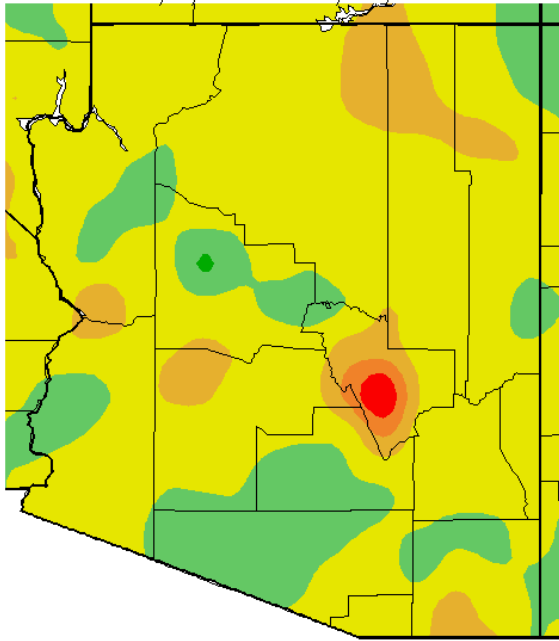
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Total Precipitation (in.)
1/1/2012 – 8/31/2012



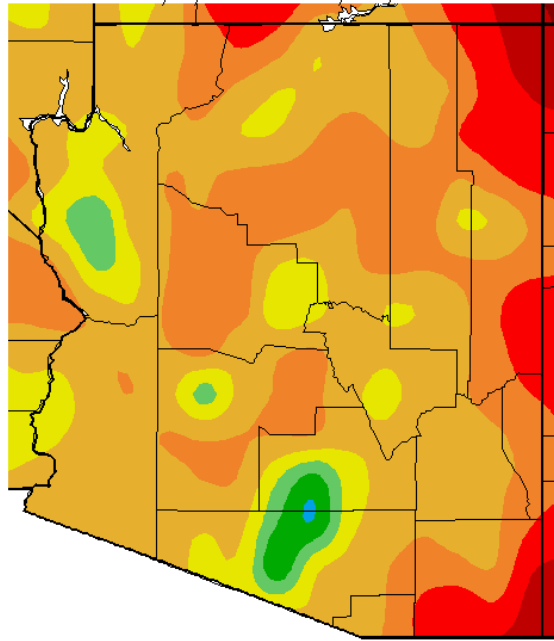
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Av. Min. Temperature dep from Ave (deg. F)
1/1/2012 – 8/31/2012



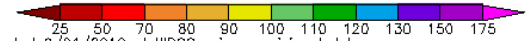
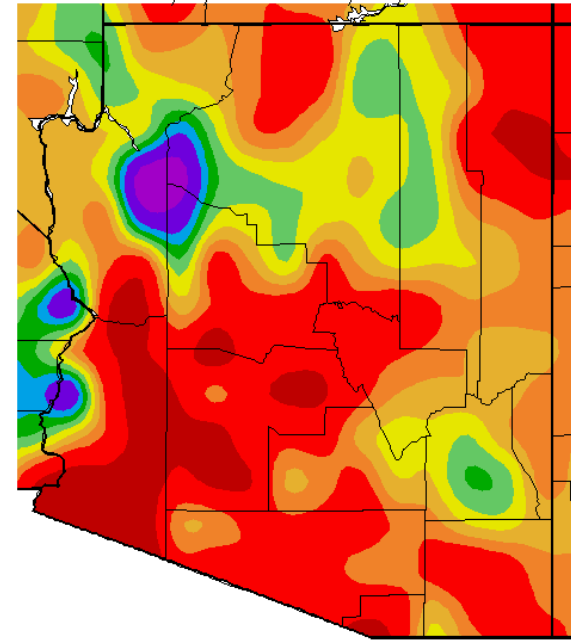
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Av. Max. Temperature dep from Ave (deg F)
1/1/2012 – 8/31/2012



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Percent of Average Precipitation (%)
1/1/2012 – 8/31/2012

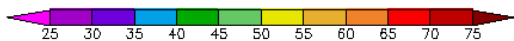
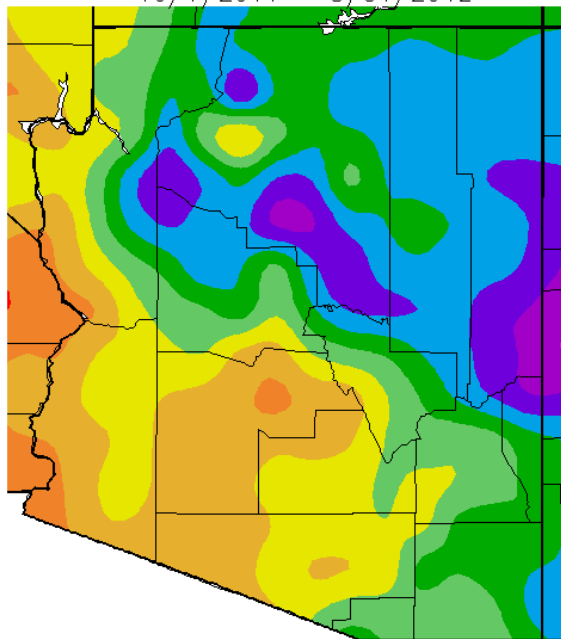


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Calendar Year 2012

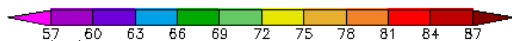
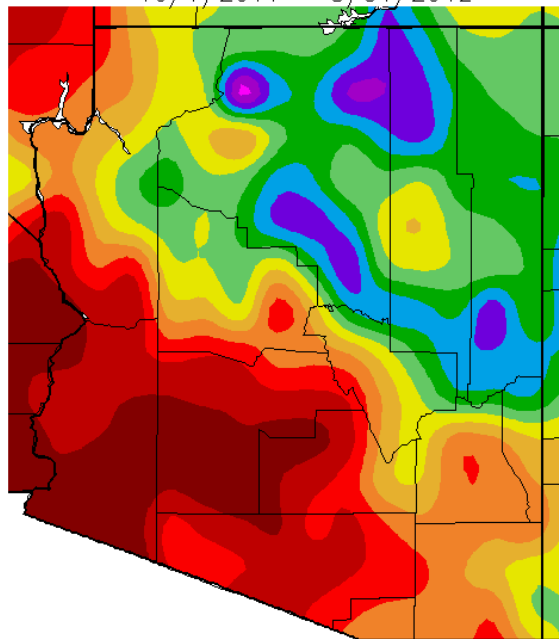
Since January, overnight temperatures continue to be within 2°F of normal, with most of the state warmer than normal, and Gila County much warmer. Daytime temperatures have been 1-4°F warmer than normal, with Pima and southern Mohave and Pinal counties slightly cooler than normal. Precipitation over the calendar year has been well below normal across most of the state, with exceptions near the borders of Coconino, Mohave and Yavapai counties and along the lower Colorado River valley. Graham and Navajo counties have received near average precipitation.

Av. Min. Temperature (deg. F)
10/1/2011 – 8/31/2012



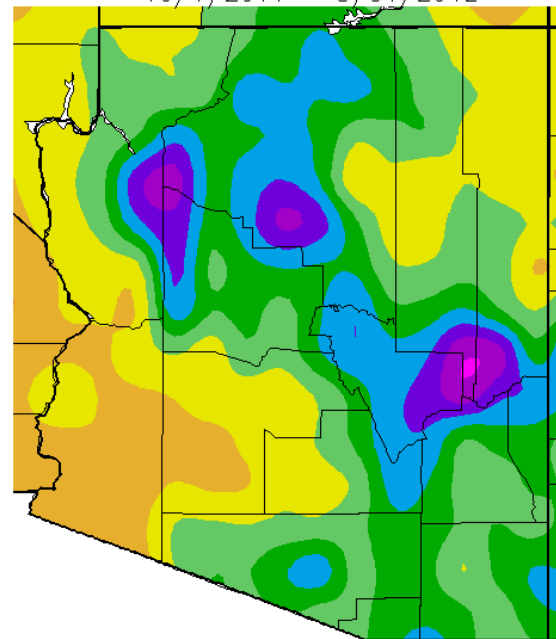
Generated 9/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature (deg. F)
10/1/2011 – 8/31/2012



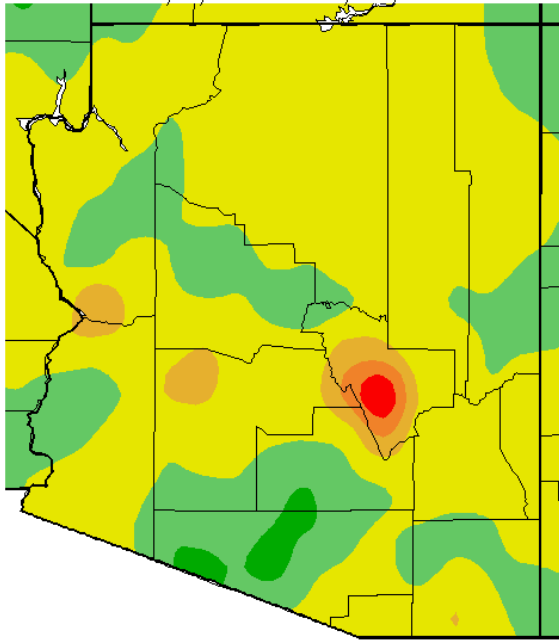
Generated 9/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Total Precipitation (in.)
10/1/2011 – 8/31/2012



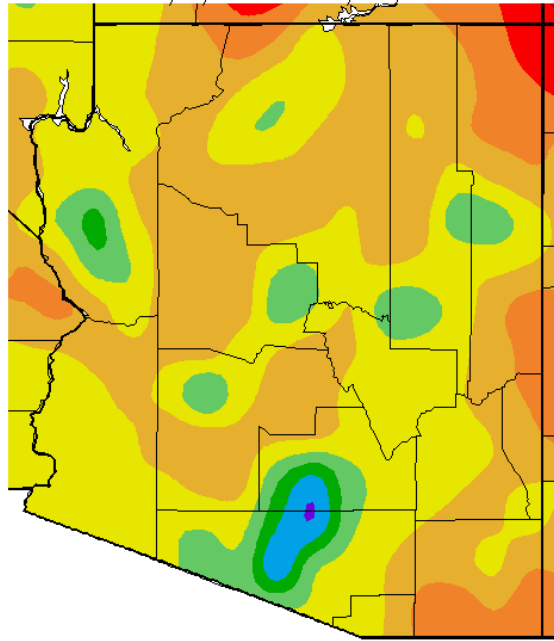
Generated 9/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Min. Temperature dep from Ave (deg. F)
10/1/2011 – 8/31/2012



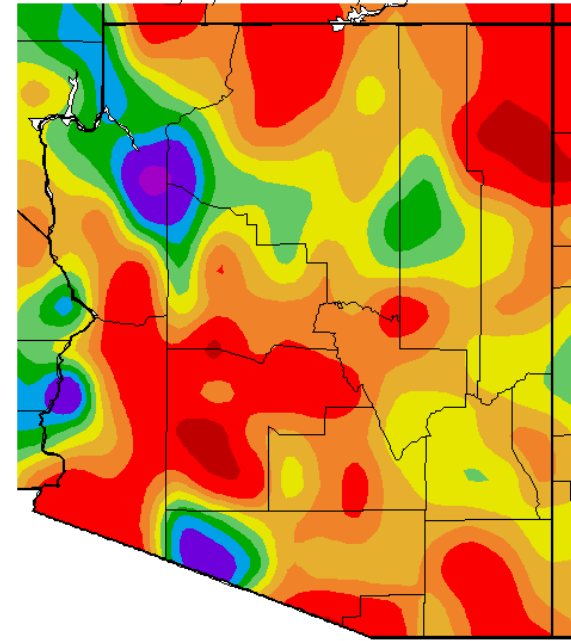
Generated 9/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)
10/1/2011 – 8/31/2012



Generated 9/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Percent of Average Precipitation (%)
10/1/2011 – 8/31/2012

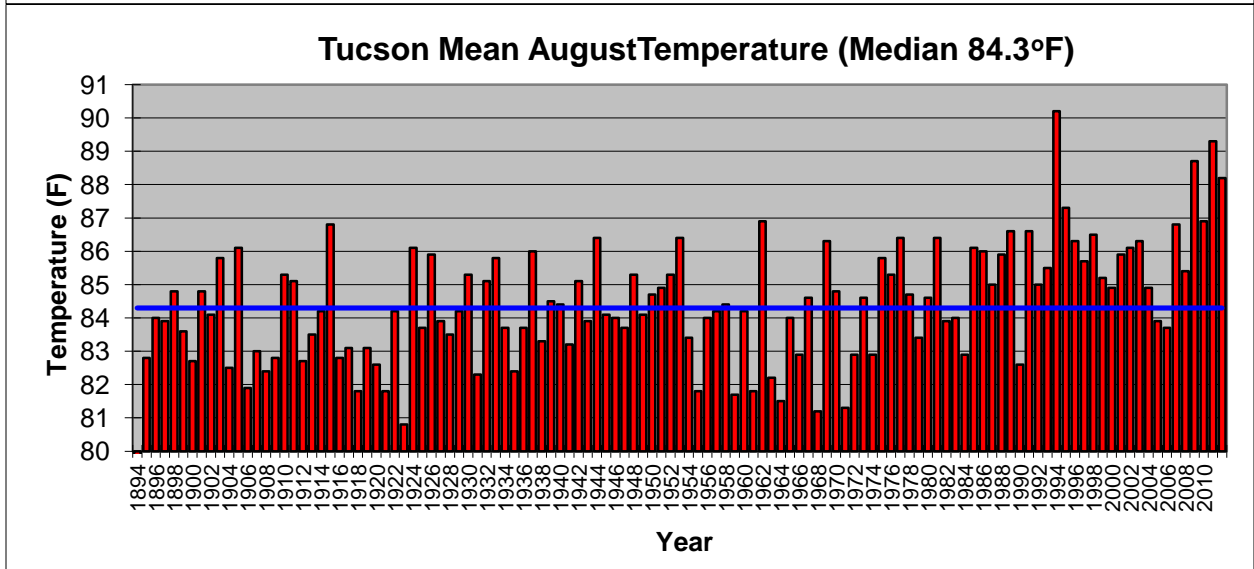
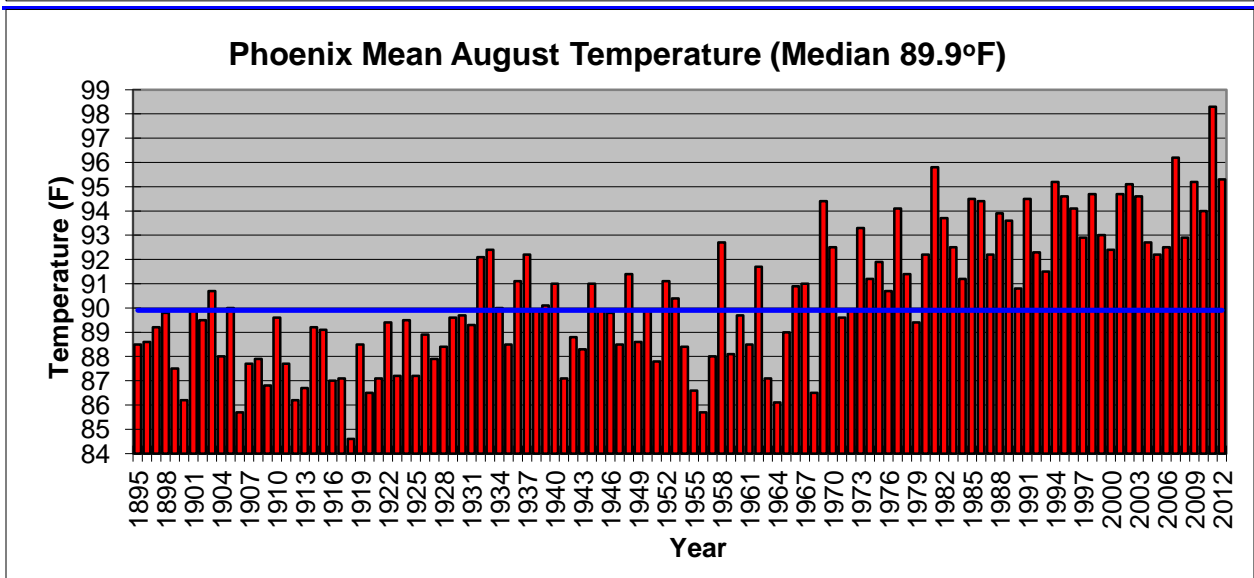
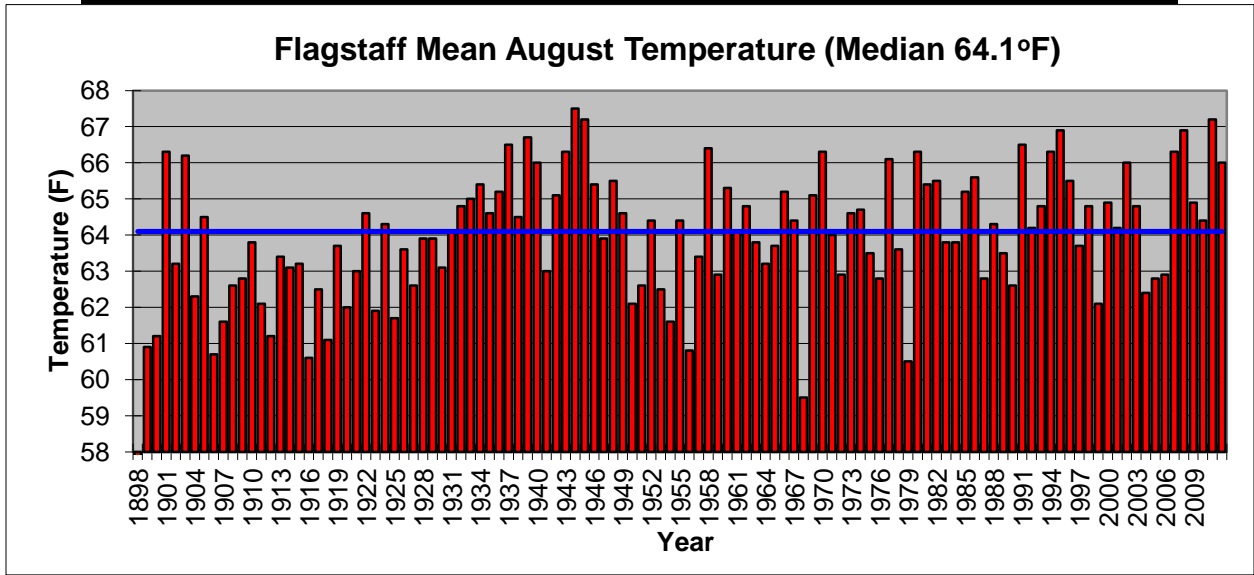


Generated 9/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

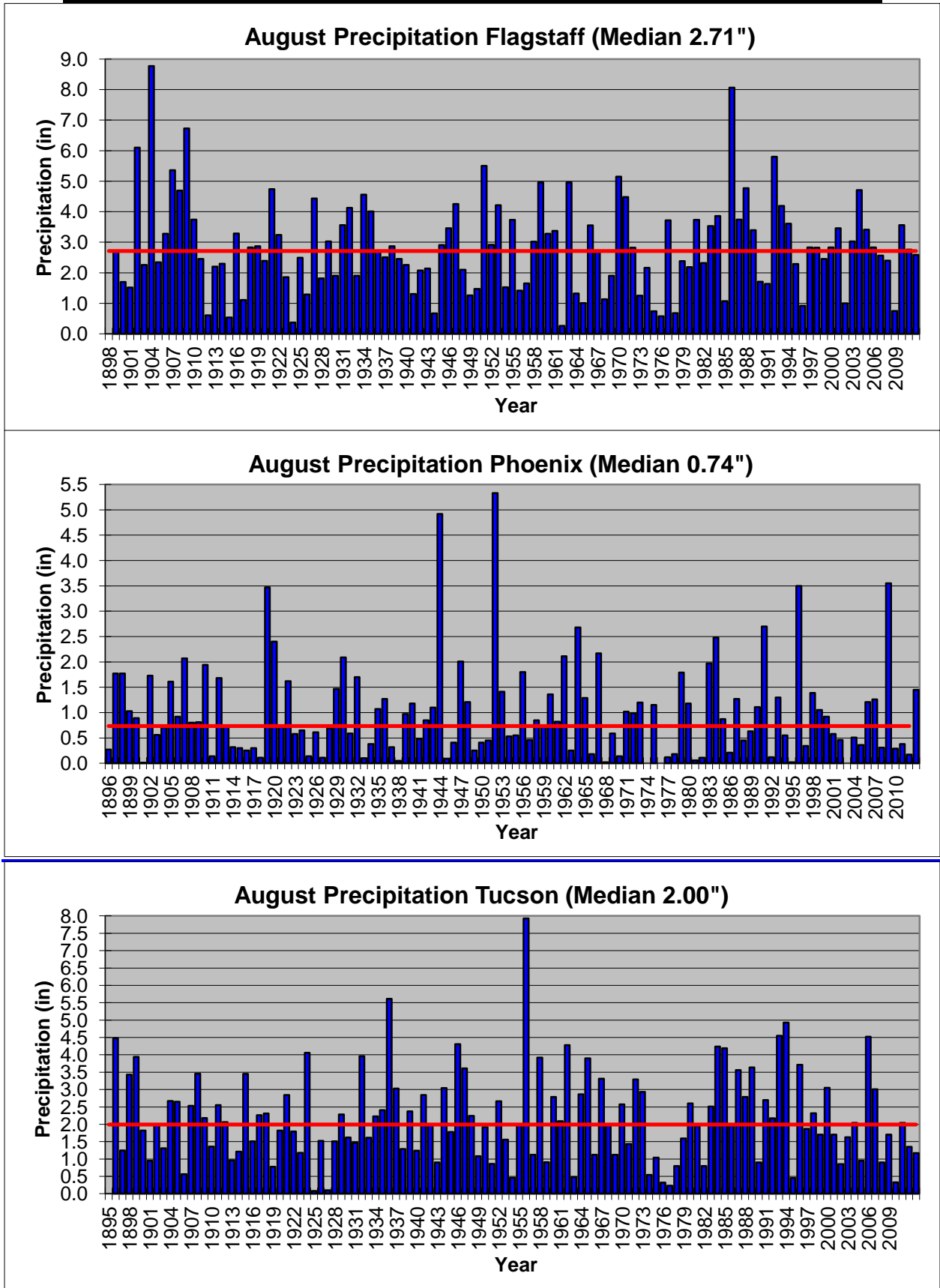
Water Year 2012 (Oct 1 2011 – August 31, 2012)

Nighttime temperatures have been within 2°F of normal through the water year, with the warmer temperatures since January balancing out the colder temperatures that occurred between October 1 and the end of December. Daytime temperatures have generally been warmer than normal except in southern Pinal and central Pima counties where clouds and precipitation during the monsoon have kept temperatures 1-3°F below normal. La Niña has held precipitation well below normal in the northeast and southwest. The northwest, including central Mohave and western Yavapai and Coconino counties, has been much wetter than normal, mostly due to recent monsoon precipitation. Western Pima County has also benefitted from significant monsoon rainfall.

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

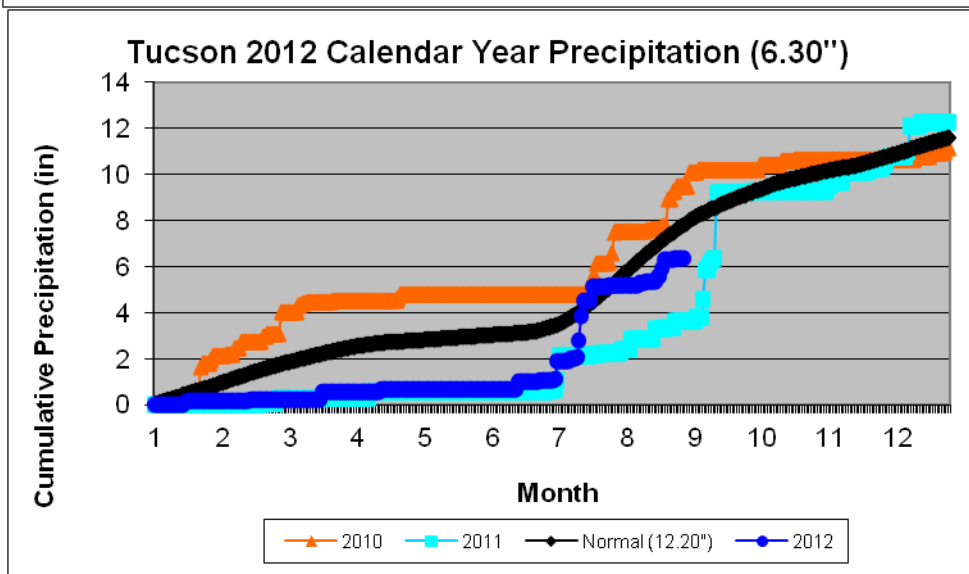
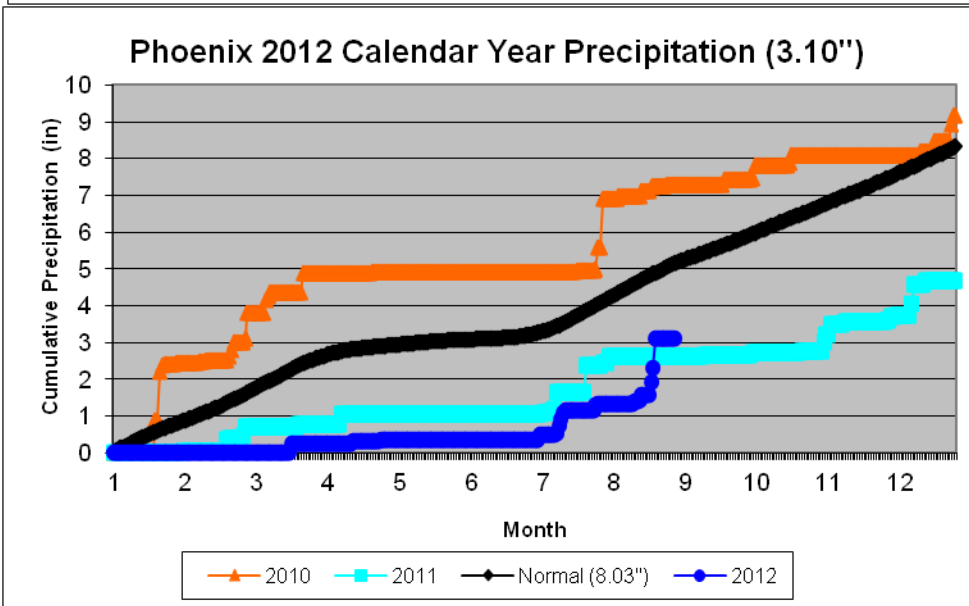
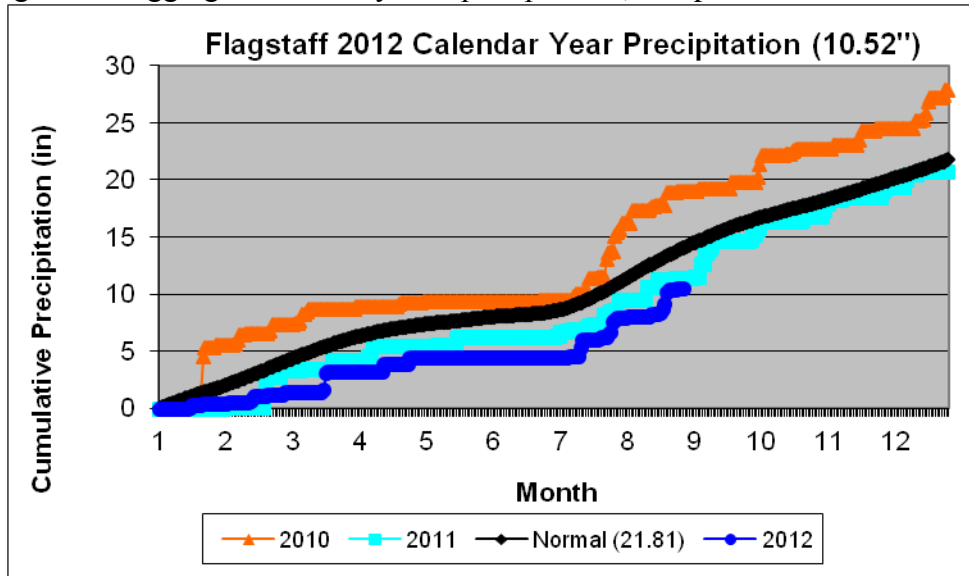


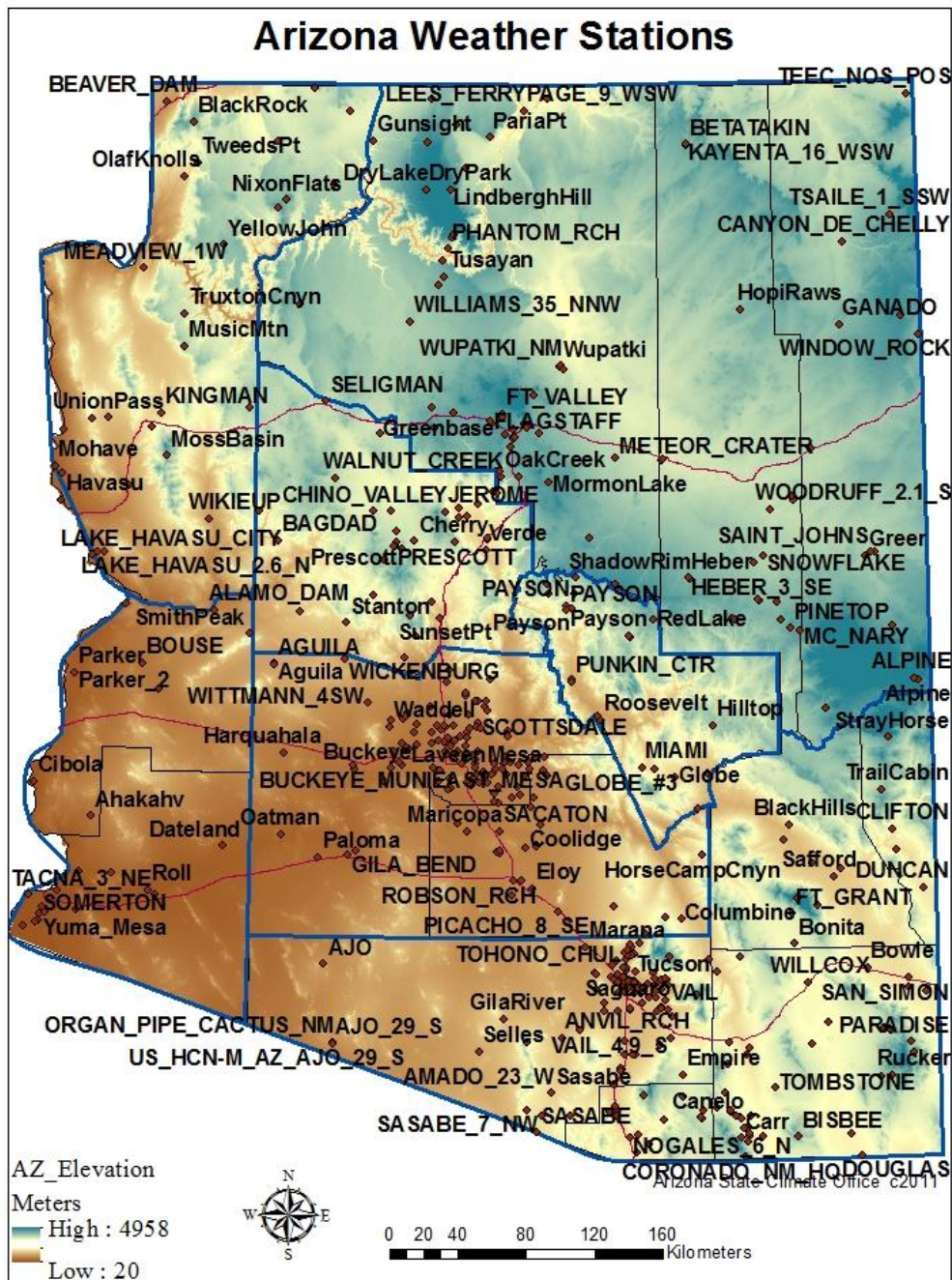
August Mean Precipitation Graphs – Flagstaff, Phoenix, and Tucson 1895-2012:



2012 Cumulative Precipitation Graphs – Flagstaff, Phoenix and Tucson:

Only Flagstaff is lagging behind last year's precipitation, and phoenix is well below normal.





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)