Arizona Climate Summary

July 2012

Summary of conditions for June 2012

June 2012 Temperature and Precipitation Summary

June 1st – 16th: June began with a ridge of high pressure over the western U.S. causing temperatures to reach well above normal during the first couple of days. High temperatures on the 1st were a scorching 114°F in Yuma, 111°F in Phoenix, 107°F in Tucson, and 106°F in Safford. At the end of the first week, temperatures across the southern desert dropped closer to normal as a weak surface frontal system swept across northern Arizona from June 5th-6th. Temperatures remained around normal for the next few days until another frontal system moved into the state on the 9th-10th. The "cold" front kept high temperatures in the low 100's in Phoenix, low 80's in Payson, and around 90 in Kingman on the 10th. From the 11th-15th, temperatures remained slightly above normal across the state until the 16th when a cut-off surface low pressure system tapped into some gulf moisture from Mexico. The weak cut-off low helped bring temperatures down to at or below normal across the state. The advance of moisture from the south provided enough energy for development of showers and thunderstorms over southern Arizona on the 16th. Rainfall totals were 0.29" for Tucson, 0.26" for Nogales, 0.04" for Sierra Vista, and 0.08" for Springerville.

June 17th – 30th: High pressure returned to the state on the 18th and temperatures rose above average at most locations statewide including a recorded high temperature of 112°F which was 8 degrees above average for Phoenix and Yuma which tied a record with a high temperature of 115°F for the day. A very weak cold front passed through northern Arizona on the 20th bringing temperatures closer to normal in northern portions of the state, however cooling of temperatures did not occur in the southern desert areas. High pressure began to build back in over northern Arizona and remained through the 25th providing dry conditions and clear skies with minimal monsoon activity. On the 26th high pressure positioned itself over the four corners area and moisture returned to southern and eastern Arizona. Rainfall totals on the 26th were 0.02" in Winslow, 0.04" in Bisbee, and 0.05" in Tucson. Isolated showers and thunderstorms continued from the 27th-29th bringing 0.10" to Douglas and Bellemont and 0.29" to Canyon de Chelly on the 27th, 0.28" of rain to ShowLow on the 28th, and 0.26" to Bowie on the 29th. Temperatures remained well above average for the second half of June and not many locations received the average share of monsoon rainfall for the month.

In This Issue: Overview of June, graphs of the June daily maximum and minimum temperatures, precipitation, mean daily dew points for Flagstaff, Phoenix, and Tucson; June climate statistics, maps of mean monthly maximum and minimum temperatures, precipitation, dew points, wind speeds for June; and graphs of the mean June 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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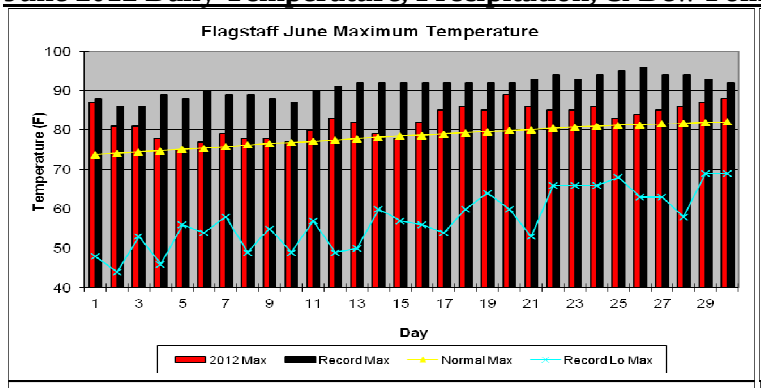
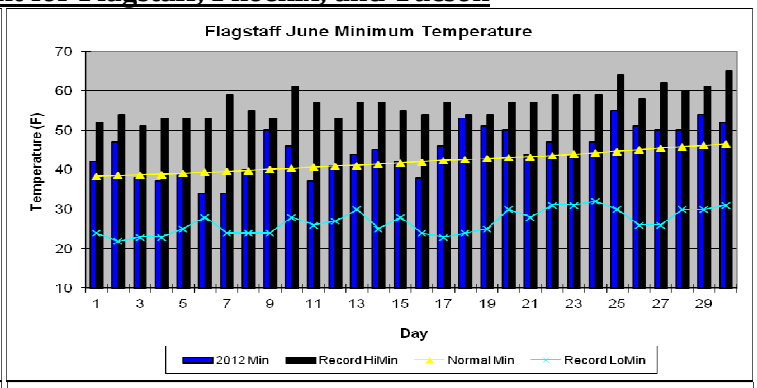
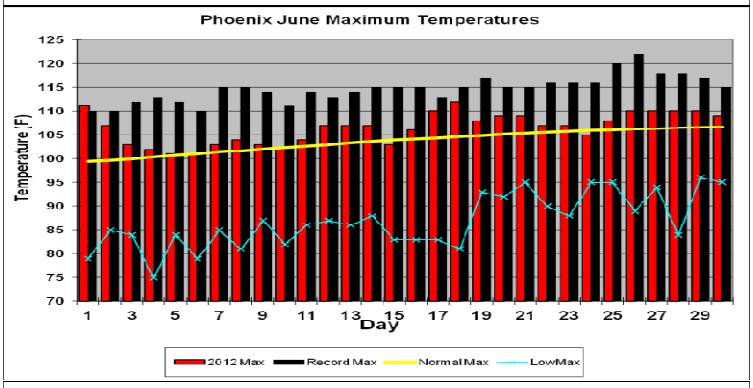
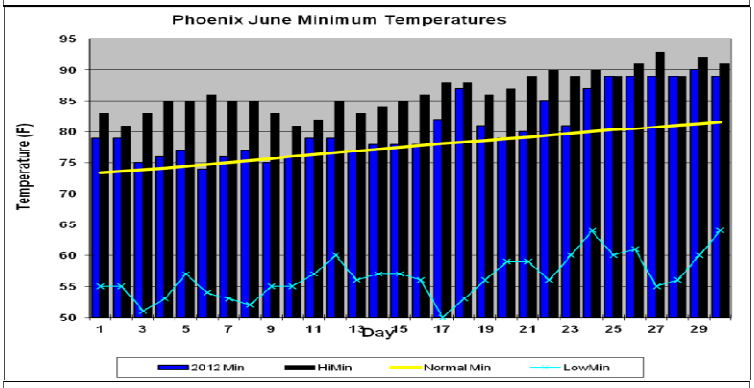
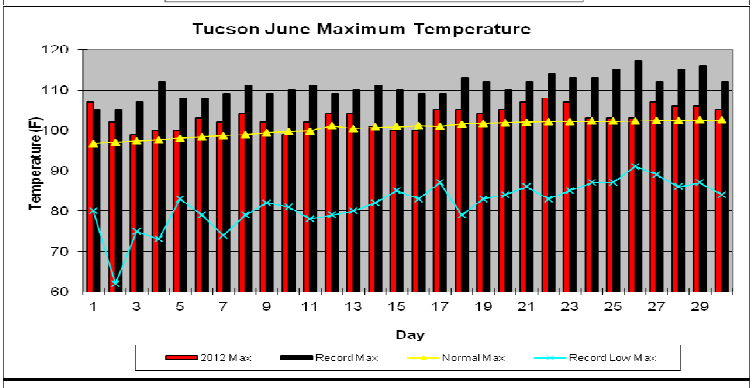
June 2012 Daily Temperature, Precipitation, & Dew Point for Flagstaff, Phoenix, and Tucson

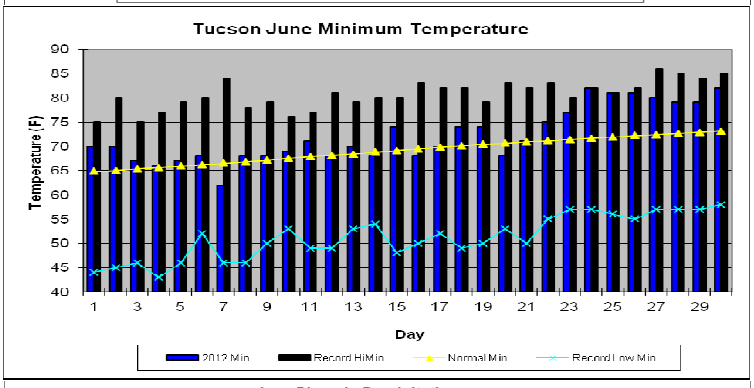


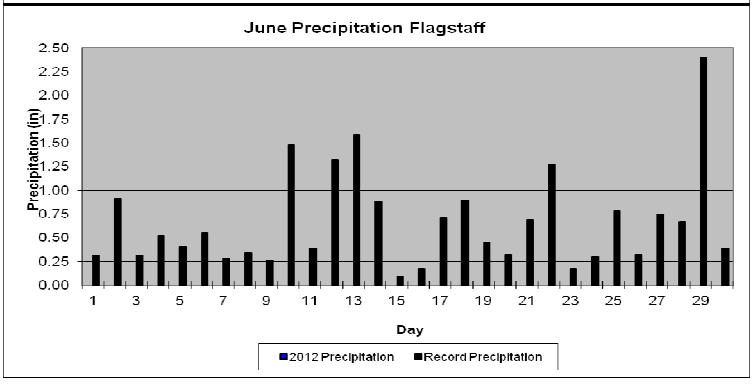


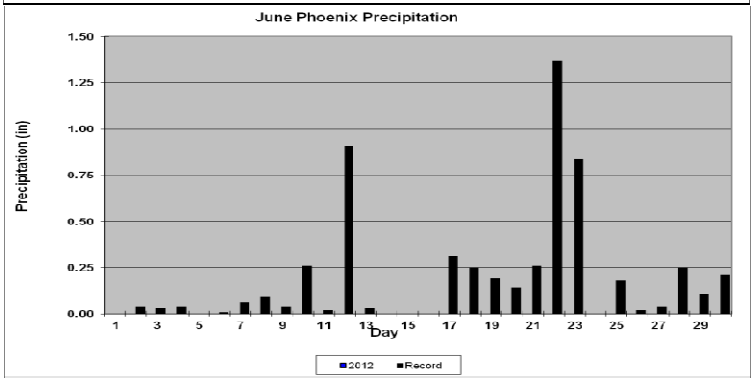


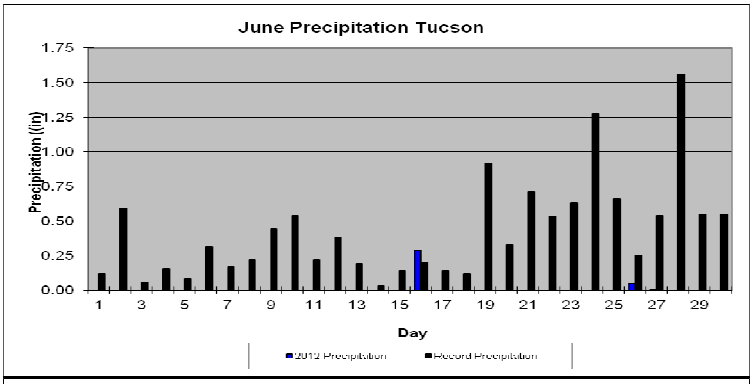


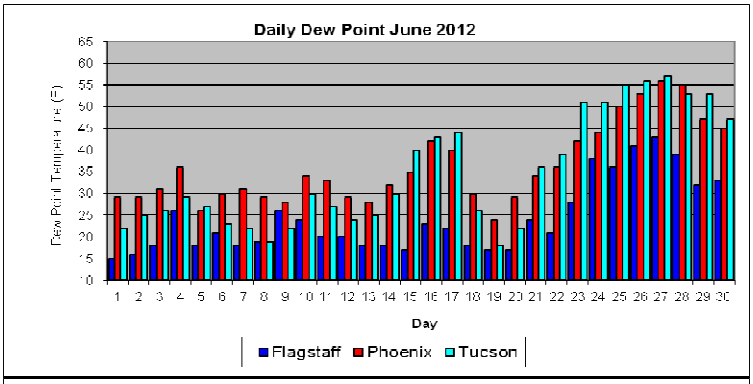


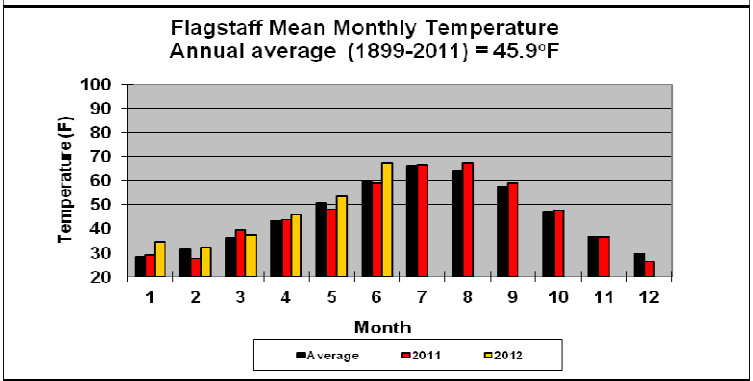


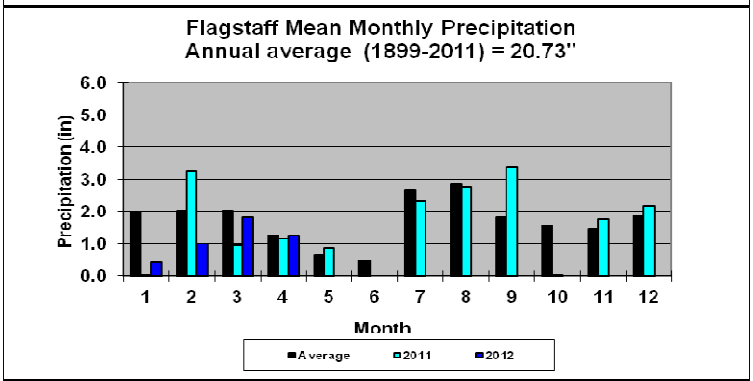


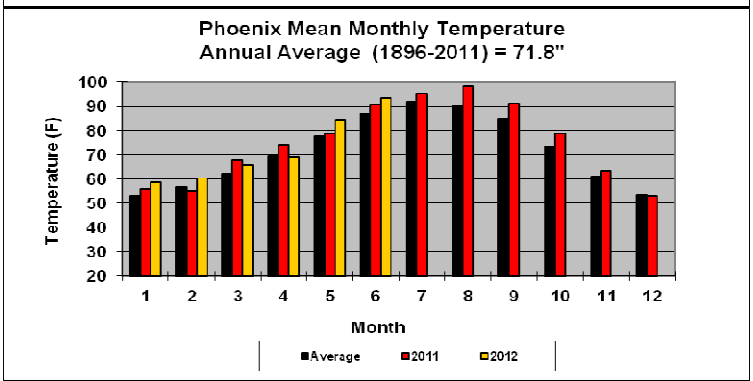


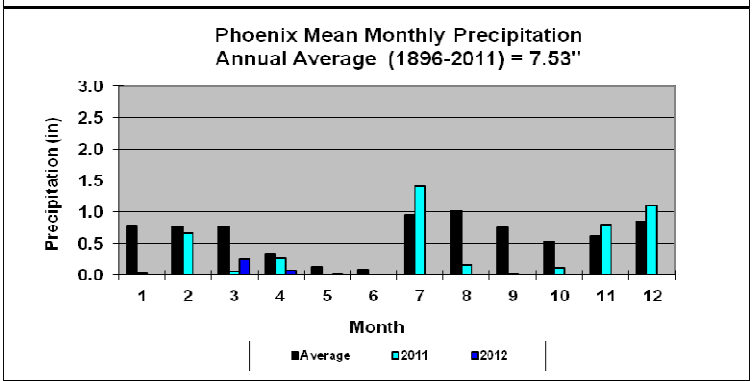

June Precipitation Tucson
Precipitation (in)
Day
2012 Precipitation
Record Precipitation

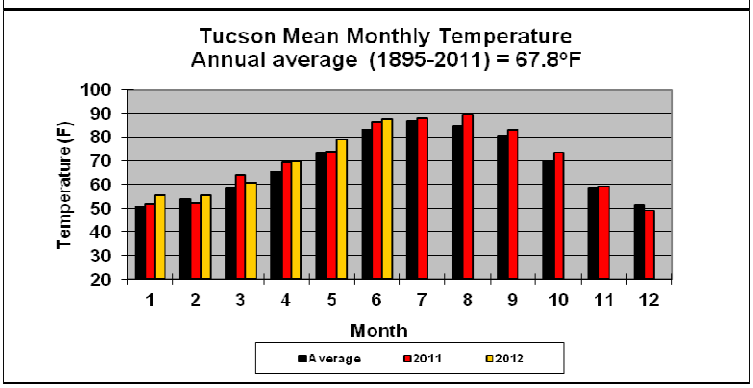

Daily Dew Point June 2012
Day
Flagstaff
Phoenix
Tucson

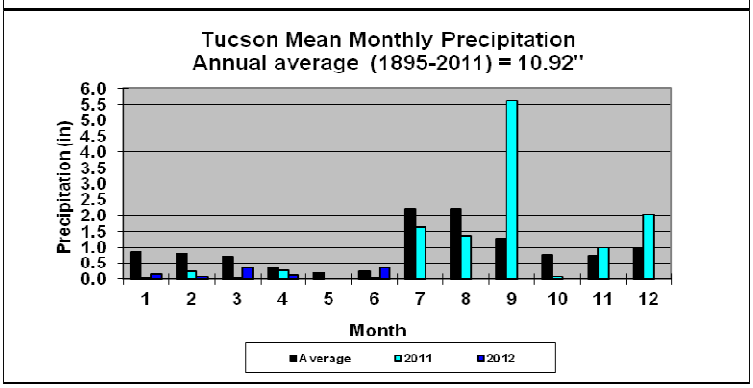

Flagstaff Mean Monthly Temperature
Annual average (1899-2011) = 45.9°F
Temperature (F)
Month
Average
2011
2012


Flagstaff Mean Monthly Precipitation
Annual average (1899-2011) = 20.73"
Precipitation (in)
Month
Average
2011
2012


Phoenix Mean Monthly Temperature
Annual Average (1896-2011) = 71.8"
Temperature (F)
Month
Average
2011
2012


Phoenix Mean Monthly Precipitation
Annual Average (1896-2011) = 7.53"
Precipitation (in)
Month
Average
2011
2012


Tucson Mean Monthly Temperature
Annual average (1895-2011) = 67.8°F
Temperature (F)
Month
Average
2011
2012


Tucson Mean Monthly Precipitation
Annual average (1895-2011) = 10.92"
Precipitation (in)
Month
Average
2011
2012

FLAGSTAFF CLIMATE STATISTICS
June 2012

This June was the 7th warmest and tied 22 other years as the driest on record.

Avg Max Temp (F)	82.5	Normal	77.9
Avg Min Temp (F)	44.9	Normal	41.9
Avg Mean Temp (F)	63.7	Normal	59.9
Departure from Normal (F)	+3.8		

Highest Monthly Avg Temp (F) 66.5 in 1974
Lowest Monthly Avg Temp (F) 53.0 in 1965

Highest Temp this month (F): 89 on 20th
Lowest Temp this month (F): 34 on 6th, 7th

Record High (F): 96 on 06/26/1970
Record Low (F): 22 on 06/02/1955
06/02/1951

No temperature or precipitation records this month:

Flagstaff Number of Days of:

Minimum Temp 40° or lower	8
Minimum Temp 50° or higher	10
Maximum Temp 75° or lower	1
Maximum Temp 85° or higher	13

Heating Degree Days	72	Normal	170
Cooling Degree Days	41	Normal	17
Degree base 65°F			

Total June Precipitation	0.00”
Normal June Precipitation	0.36”
Departure from normal	-0.36”
Greatest 24-Hr Precipitation	0.00”
Total Precipitation Year-to-Date	4.46”
Departure from Normal	-4.01”

Number of Days:

Clear	30
Partly Cloudy	0
Cloudy	0

Greatest June Precipitation 2.92” in 1991
Least June Precipitation 0.00” in 2012, 2011 and 21 other years

Average Wind Speed 8.2 mph
Highest Peak Gust 44 mph from 230° on 5th

PHOENIX CLIMATE STATISTICS
June 2012

This June was tied for the 2nd warmest and tied 68 other years as the driest on record.

Avg Max Temp(F)	106.5	Normal	103.9
Avg Min Temp(F)	81.0	Normal	77.7
Avg Mean Temp (F)	93.8	Normal	90.8
Departure from Normal (F)	+3.0		

Highest Monthly Avg Temp (F) 94.6 in 2006
Lowest Monthly Avg Temp (F) 79.0 in 1965

Highest Temp this month (F): 112 on 18th
Lowest Temp this month (F): 74 on 6th

Record High (F): 122 on 06/26/1990
Record Low (F): 49 on 06/04/1908

Temperature or precipitation records set this month:
1st HiMax 111, previous record 110 in 1977
25th HiMin 89 tied, first set in 2006
28th HiMin 89 tied, first set in 1986

Phoenix Number of Days of:

Minimum Temp 80° or lower	18
Minimum Temp 90° or higher	1
Maximum Temp 100° or lower	0
Maximum Temp 110° or higher	7

Heating Degree Days	0	Normal	0
Cooling Degree Days	869	Normal	774
Degree base 65°F			

Total June Precipitation	0.00”
Normal June Precipitation	0.02”
Departure from normal	-0.02”
Greatest 24-Hr Precipitation	0.00”
Total Precipitation Year-to-Date	0.36”
Departure from Normal	-2.87”

Number of Days:

Clear	24
Partly Cloudy	6
Cloudy	0

Greatest June Precipitation 1.70" in 2006

Least June Precipitation 0.00" in 2012, 2011, 2010, 2009, 2008, 2007 and 63 other years.
Average Wind Speed 7.4 mph
Highest Peak Gust 44 mph from 200° on 27th

TUCSON CLIMATE STATISTICS
June 2012

This June was the 5th warmest and 25th wettest on record.

Avg Max Temp(F)	103.4	Normal	100.3
Avg Min Temp(F)	72.2	Normal	69.3
Avg Mean Temp(F)	87.8	Normal	84.8
Departure from Normal (F)	+3.0		

Highest Monthly Avg Temp (F) 89.2 in 1905
Lowest Monthly Avg Temp (F) 77.6 in 1894

Highest Temp this month (F): 108 on 22nd
Lowest Temp this month (F): 62 on 7th

Record High (F): 117 on 06/26/1990
Record Low (F): 43 on 06/04/1908

Temperature or precipitation records set this month:
1st HiMax 107 set, previous record 105 in 2004
16th Precip 0.29" set, previous record 0.20" set in 1918
24th HiMin 82 tied, first set in 2006
25th HiMin 81 tied, first set in 1970

Tucson Number of Days of:

Minimum Temp 70° or lower	16
Minimum Temp 80° or higher	5
Maximum Temp 100° or lower	6
Maximum Temp 101° or higher	24

Heating Degree Days	0	Normal	0
Cooling Degree Days	692	Normal	594

Degree base 65°F

Total June Precipitation	0.34"
Normal June Precipitation	0.20"
Departure from normal	+0.14"
Greatest 24-Hr Precipitation	0.29 on 6/16
Total Precipitation Year-to-Date	1.02"
Departure from Normal	-2.25"

Greatest June Precipitation 2.07" in 1915
Least June Precipitation 0.00" in 2010, 2007, 2004 and 26 other years.

Number of Days:

Clear	30
Partly Cloudy	0
Cloudy	0

Average Wind Speed 7.2 mph
Highest Peak Gust 54 mph from 140° on 27th

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

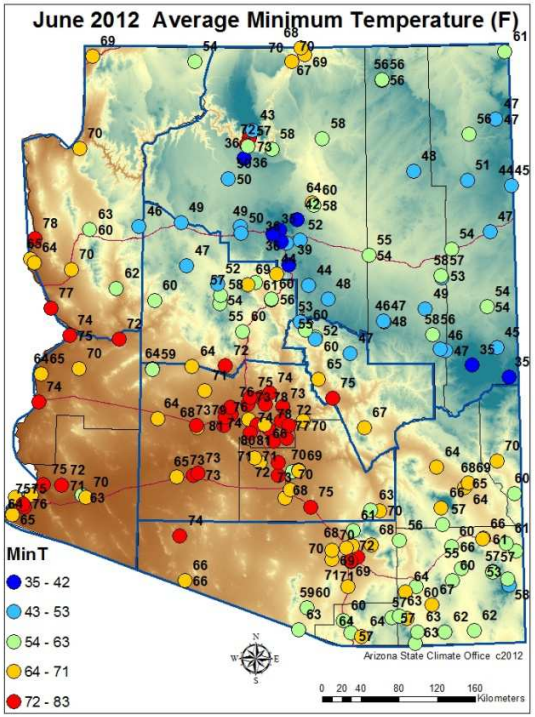
Winds for June:

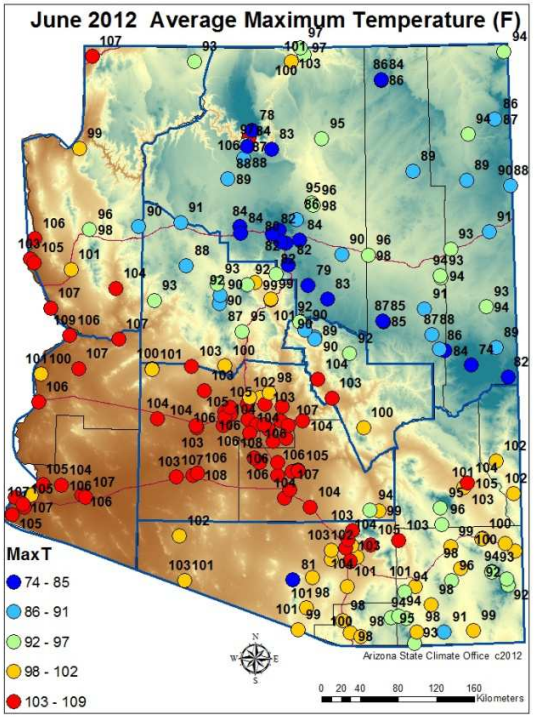
Day	Phoenix		Flagstaff		Tucson	
(mph)	Avg	Max	Avg	Max	Avg	Max
1	7	28	7.2	35	6.8	23
2	8.9	28	10	37	6.9	24
3	7.8	23	7.7	30	7	28
4	7.1	21	8.7	31	6.8	24
5	8.7	26	13.2	44	5.8	23
6	5.5	23	8.5	31	8.2	32
7	8.1	22	7.1	28	6.2	26
8	6.8	23	12.3	40	8.9	25
9	8.6	23	16.4	37	11.1	35
10	5.2	16	7.2	32	7.8	25
11	7.5	22	5.8	26	6	21
12	6.5	20	5.8	29	5.7	21
13	7	23	7.4	33	5.4	21
14	9.2	31	7.1	30	7.6	28
15	7.9	26	6.3	28	8.4	29
16	5.9	33	4.9	26	7.6	43
17	5.4	24	6.2	37	6.3	24
18	10.4	33	10.4	40	7.8	28
19	7.5	26	10.6	30	8.2	28
20	7.3	21	5.8	24	5.5	25
21	6.3	20	8.8	32	6	18
22	6	24	11.4	40	6.8	25
23	6.8	24	9.1	36	7	29
24	9	26	7.1	31	5.6	28
25	7.4	23	7.5	29	6	24
26	6.3	35	8.3	30	6.3	33
27	7.5	44	6	31	7.5	54
28	7.1	25	7.2	29	8	33
29	7.9	25	7.4	29	8.2	31
30	9	29	5.7	30	10.2	32

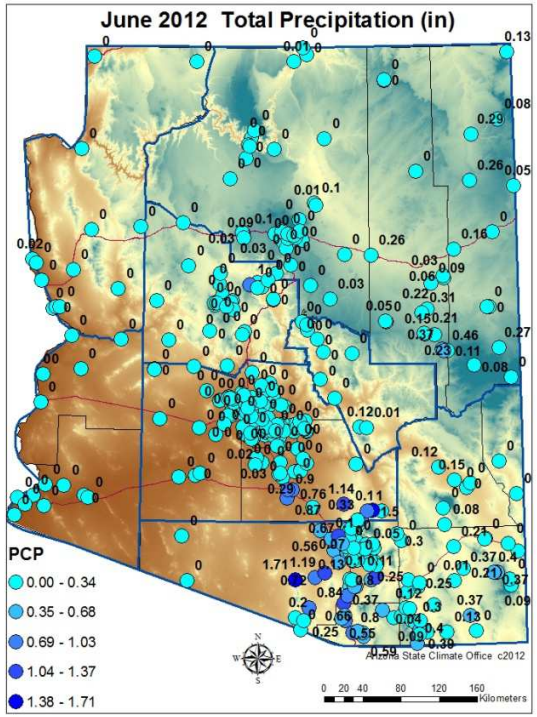
Dew Points for June:
Daily Average Dew Point (^{o}F):

Day	Phx	Tuc	Flg
1	29	22	15
2	29	25	16
3	31	26	18
4	36	29	26
5	26	27	18
6	30	23	21
7	31	22	18
8	29	19	19
9	28	22	26
10	34	30	24
11	33	27	20
12	29	24	20
13	28	25	18
14	32	30	18
15	35	40	17
16	42	43	23
17	40	44	22
18	30	26	18
19	24	18	17
20	29	22	17
21	34	36	24
22	36	39	21
23	42	51	28
24	44	51	38
25	50	55	36
26	53	56	41
27	56	57	43
28	55	53	39
29	47	53	32
30	45	47	33

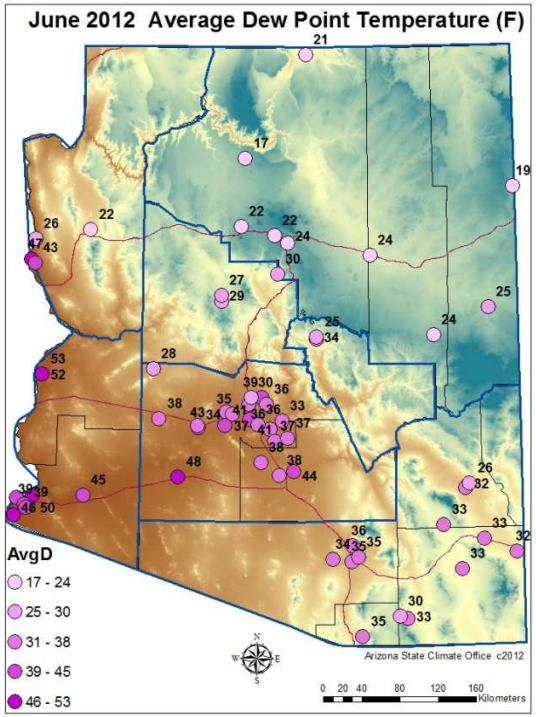
June 2012 Temperature, Dew Point, Wind Speed, and Precipitation Maps are based on **preliminary data** from the National Weather Service, the Arizona Meteorological Network (AZMet), operated by the University of Arizona College of Agriculture Cooperative Extension and the RAWS (Remote Automated Weather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

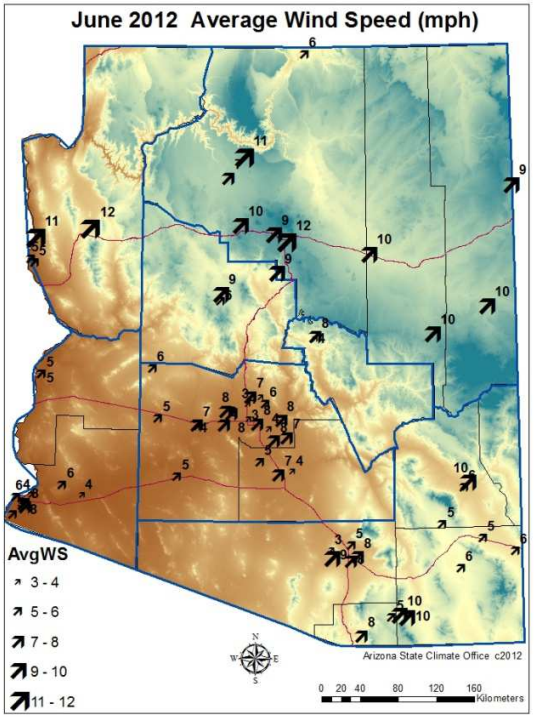


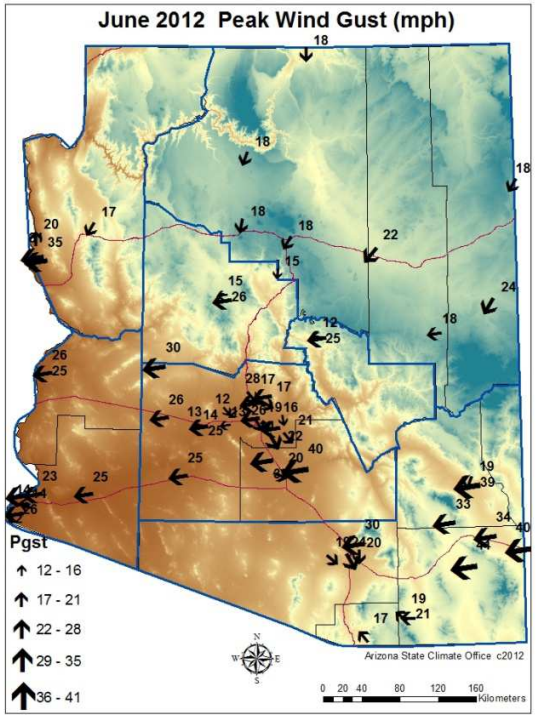




Average nighttime temperatures ranged from 36°F at Flagstaff to 83°F at Mesa Falcon Field. Average daytime temperatures ranged from 74°F at Sunrise Mountain to 109°F at Lake Havasu City. Precipitation values ranged from 0" in many places across the state to 1.71" at Kitt Peak in southern Arizona.

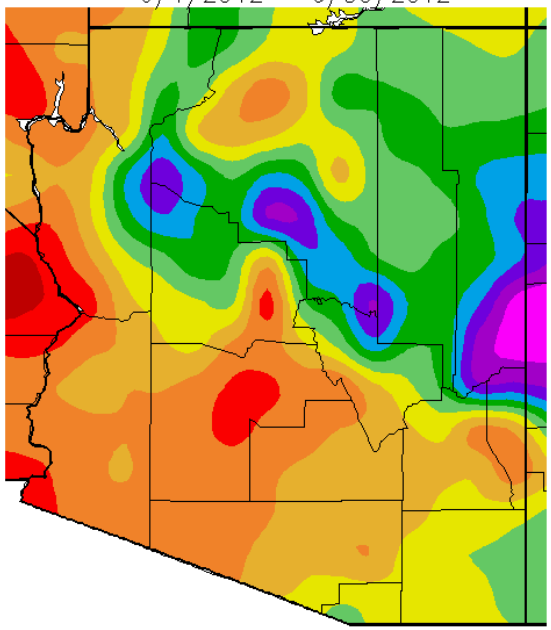






Average monthly dew points ranged from 17°F at the Grand Canton Airport to 53°F at Parker. Average winds were light, with 13 mph as the highest average at Kingman. The highest peak wind gust was 41 mph at Kansas Settlement in southeastern Arizona.

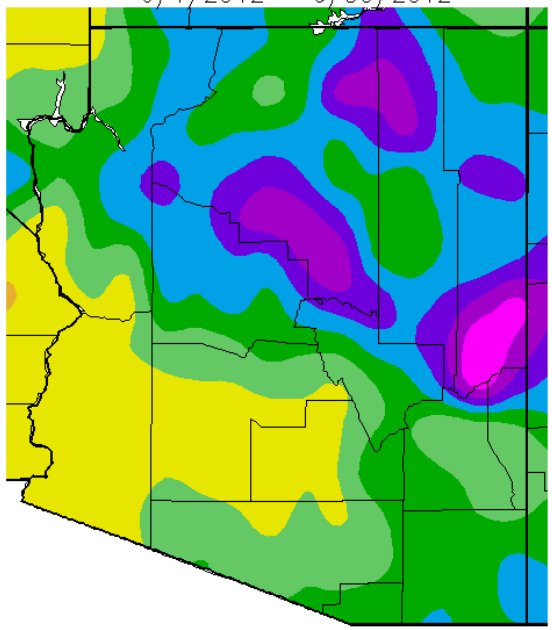
Av. Min. Temperature (deg. F)
6/1/2012 – 6/30/2012



35 40 45 50 55 60 65 70 75 80 85

Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

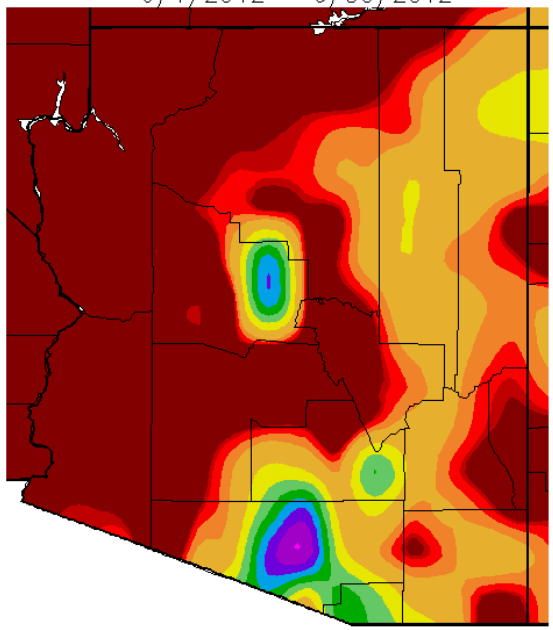
Av. Max. Temperature (deg. F)
6/1/2012 – 6/30/2012



80 85 90 95 100 105 110 115 120 125 130

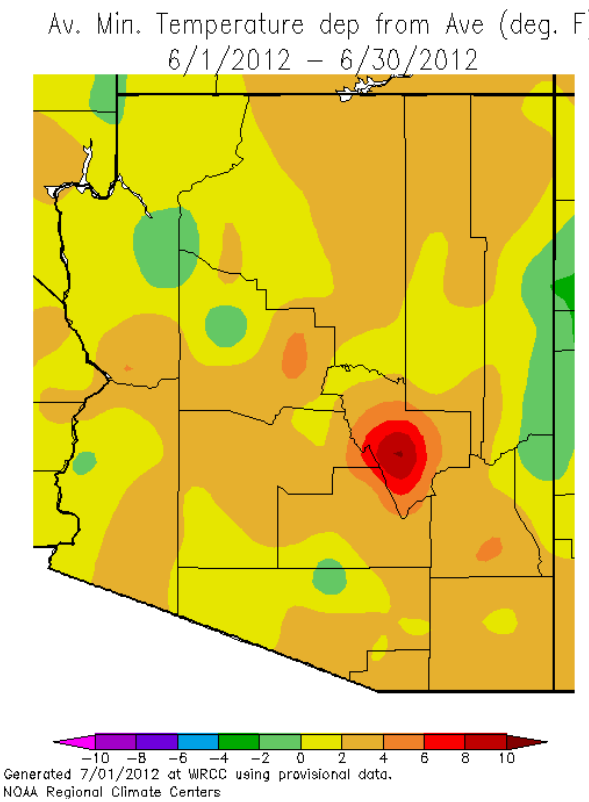
Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

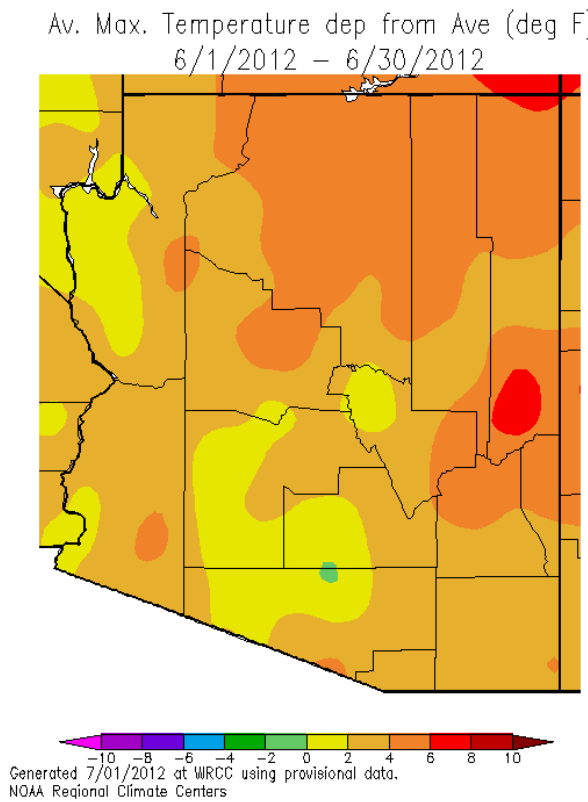
Total Precipitation (in.)
6/1/2012 – 6/30/2012

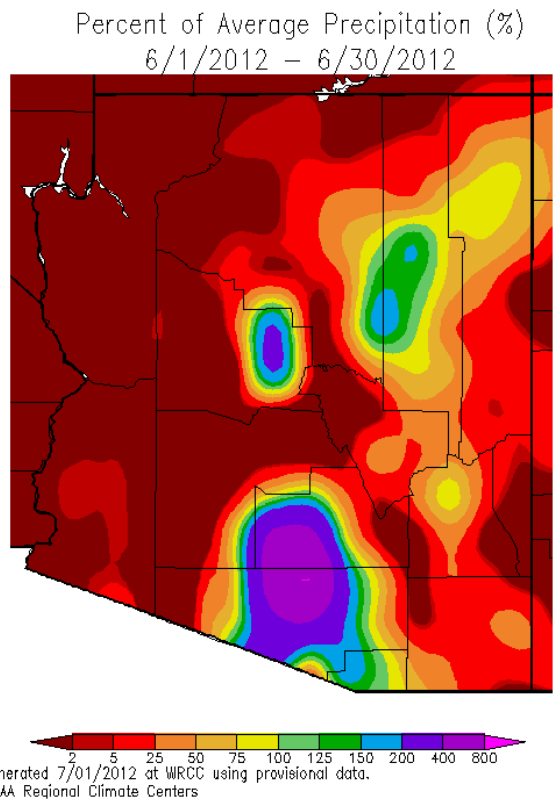


0.01 0.02 0.05 0.1 0.3 0.5 0.7 0.9 1.1 1.3 1.5

Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

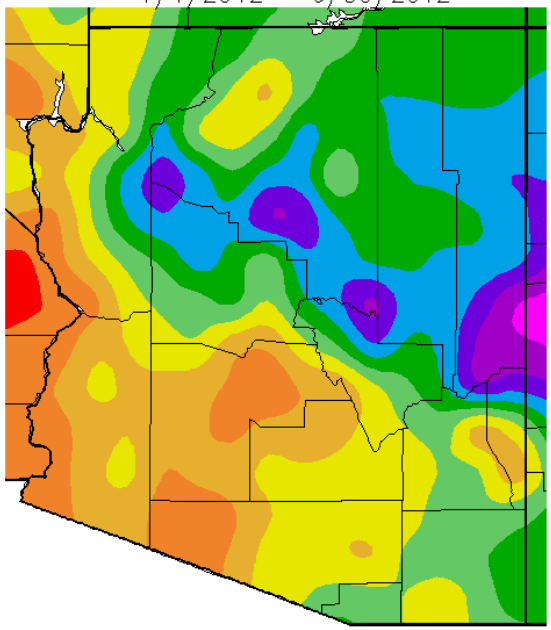






June minimum temperatures were generally 0 to 4°F warmer than normal, except Gila County which had temperatures 6 to 10°F warmer than normal. Maximum temperatures were also warmer than average, with the southwest deserts 0-4°F warmer, and the Colorado Plateau 4-6°F warmer. Precipitation is June was less than 5% of normal across the western half of the state, and less than 25% of normal along the eastern and northeastern borders. Much of southern Navajo County received near normal rainfall, while most of Pinal and Pima counties received 200-800% of normal rainfall.

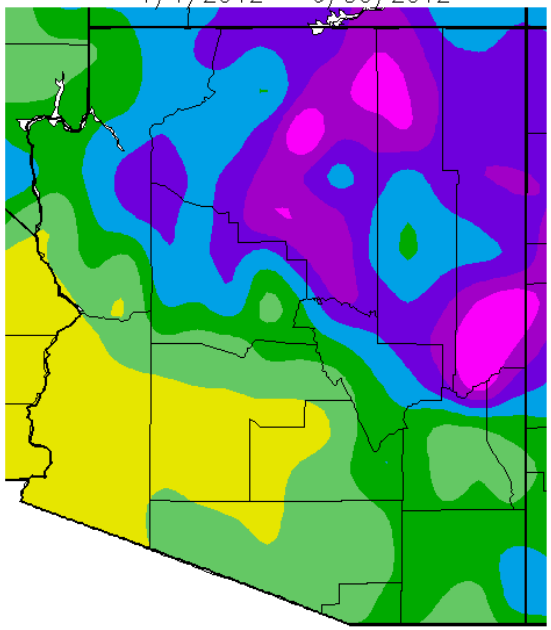
Av. Min. Temperature (deg. F)
1/1/2012 – 6/30/2012



20 25 30 35 40 45 50 55 60 65 70

Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

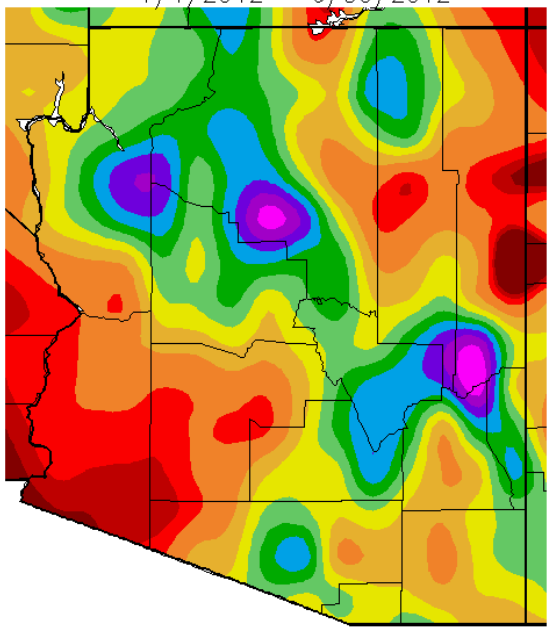
Av. Max. Temperature (deg. F)
1/1/2012 – 6/30/2012



60 65 70 75 80 85 90 95 100 105 110

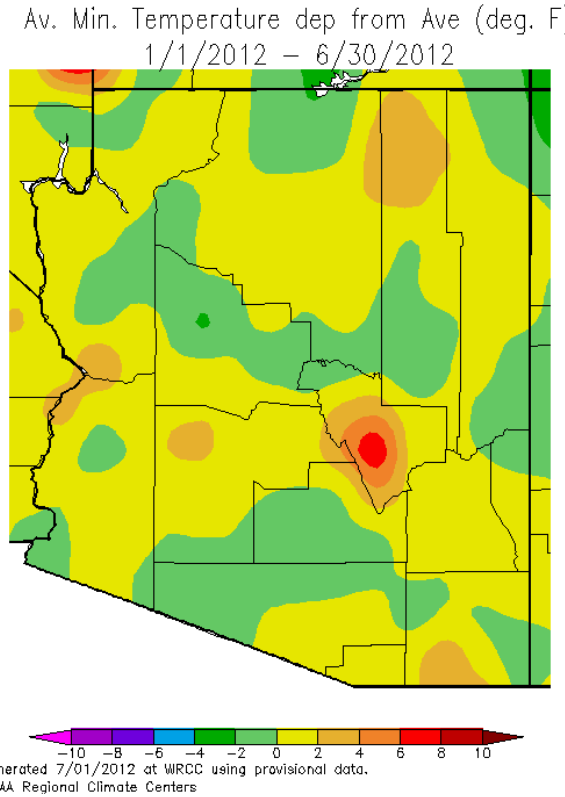
Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

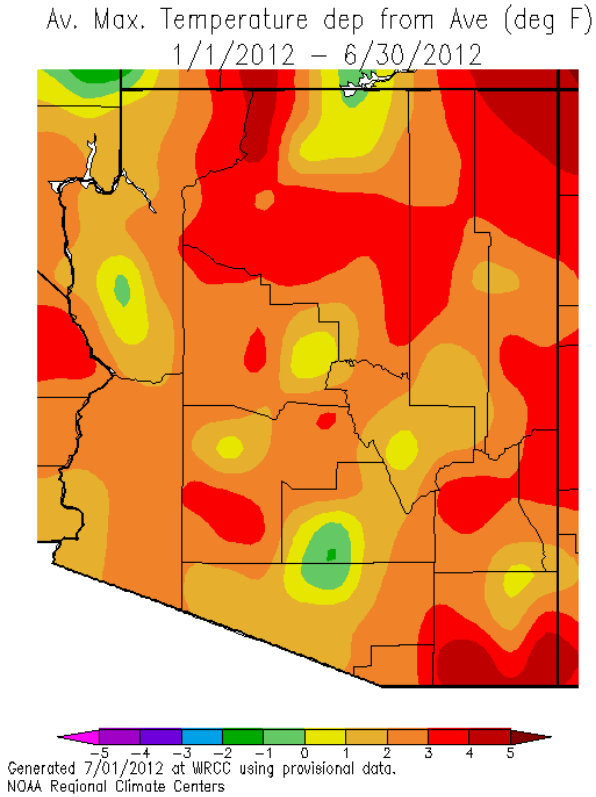
Total Precipitation (in.)
1/1/2012 – 6/30/2012

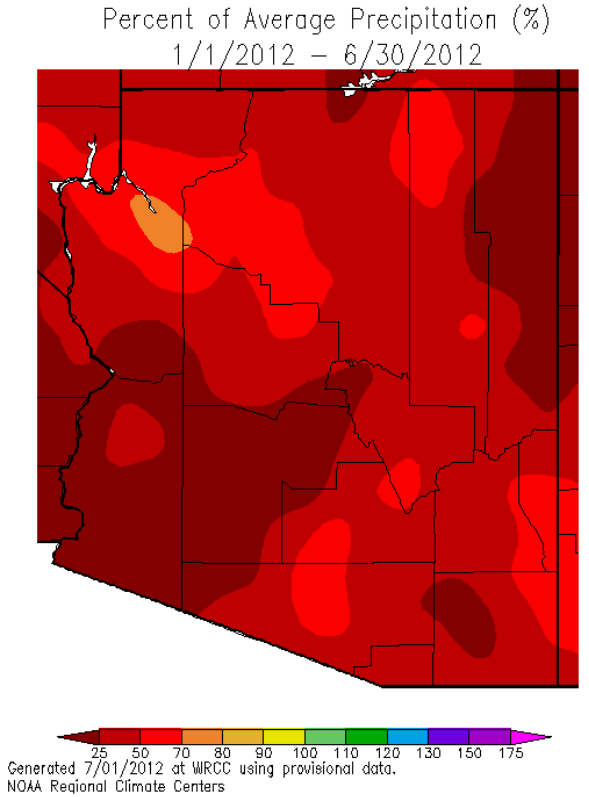


0.1 0.25 0.5 1 1.5 2 2.5 3 3.5 4 4.5

Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers



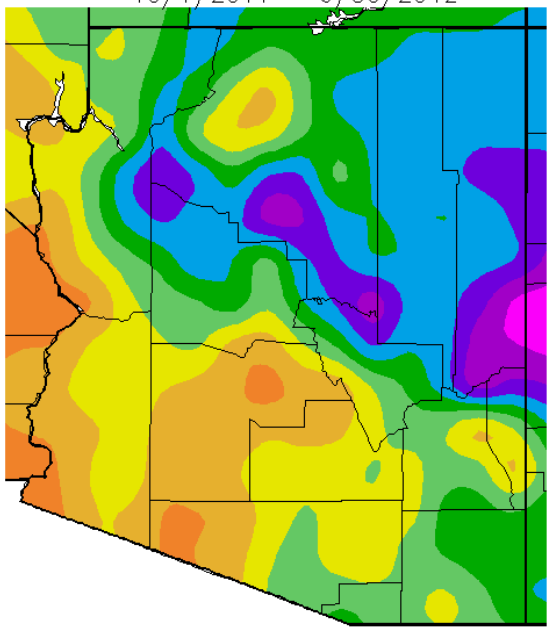




Calendar Year 2012

Since January, overnight temperatures have been within 2°F of normal, with most of the state warmer than normal, but northern Pima and western Pinal counties and much of Yavapai County have been cooler than normal. Daytime temperatures have been 0-3°F warmer than normal in southern Arizona, and 3-4°F warmer on much of the Colorado Plateau. Since the first of the year, precipitation has been scarce. The dry winter and spring has been followed by a dry early summer. The southwest deserts and Apache County have had less than 50% of average, while most of the rest of the state has received less than 70% of average precipitation.

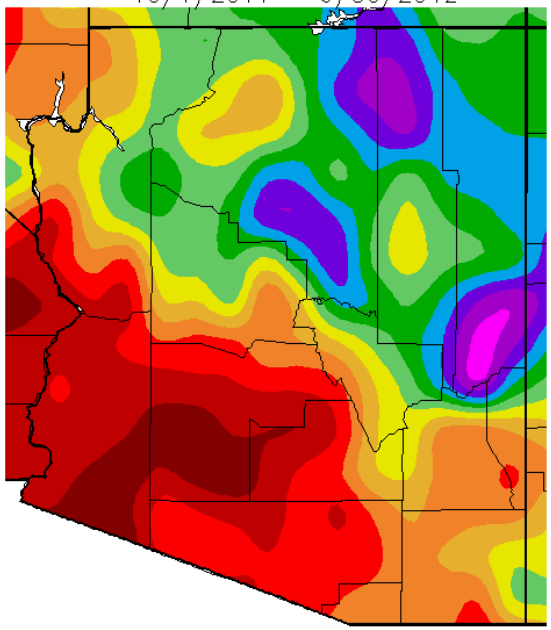
Av. Min. Temperature (deg. F)
10/1/2011 – 6/30/2012



20 25 30 35 40 45 50 55 60 65 70

Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

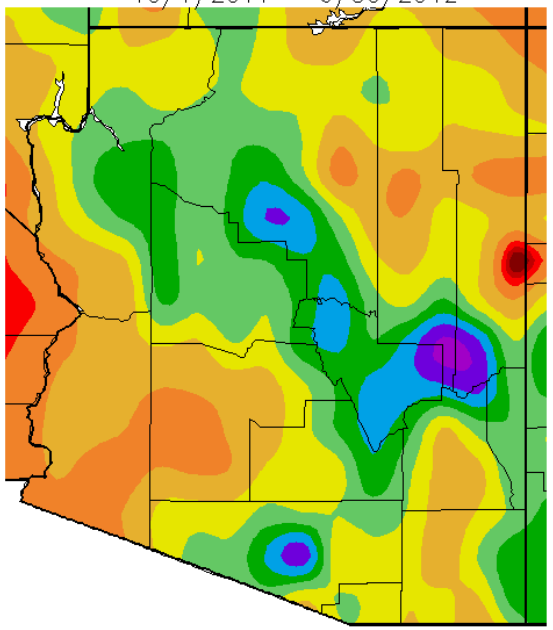
Av. Max. Temperature (deg. F)
10/1/2011 – 6/30/2012



54 57 60 63 66 69 72 75 78 81 84

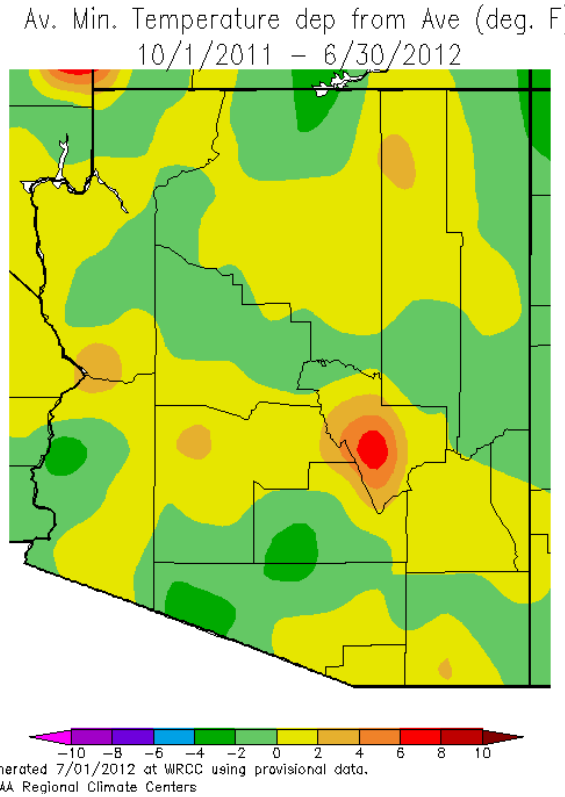
Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

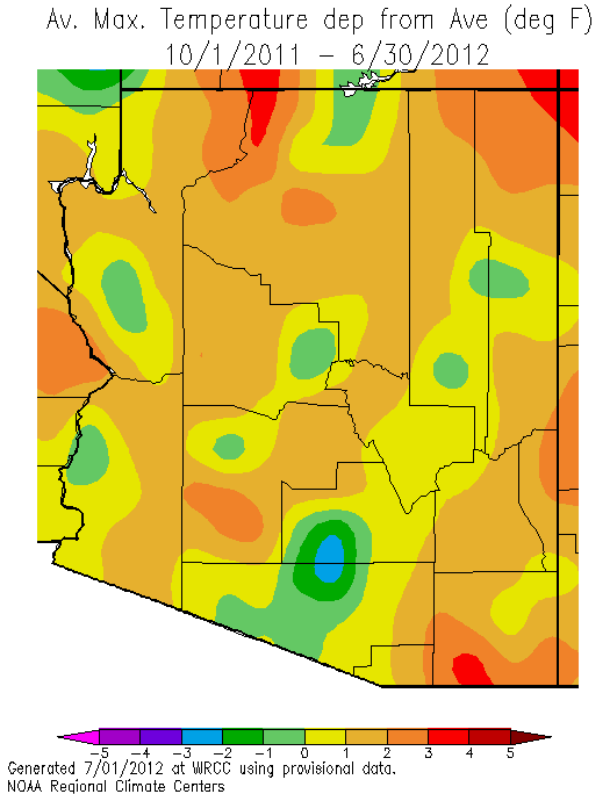
Total Precipitation (in.)
10/1/2011 – 6/30/2012

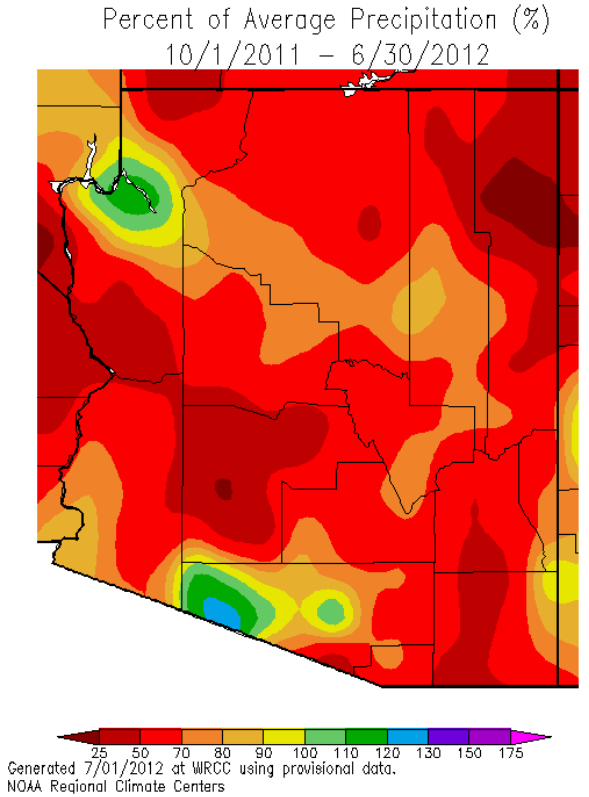


0.1 0.5 1 2 3.5 5 6.5 8 9.5 11 12.5

Generated 7/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers



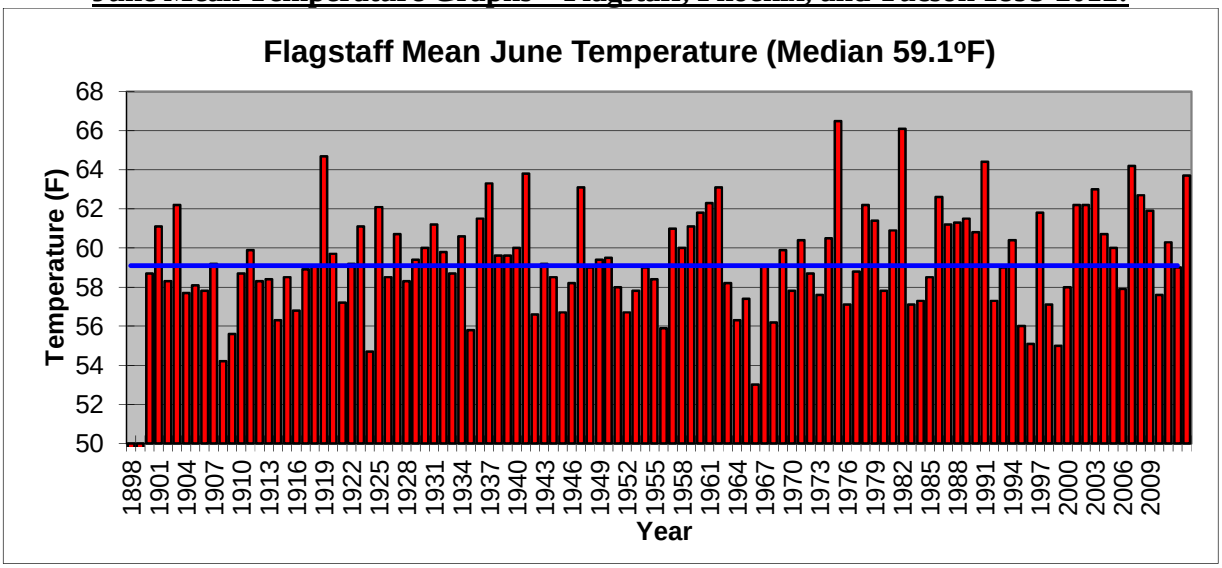


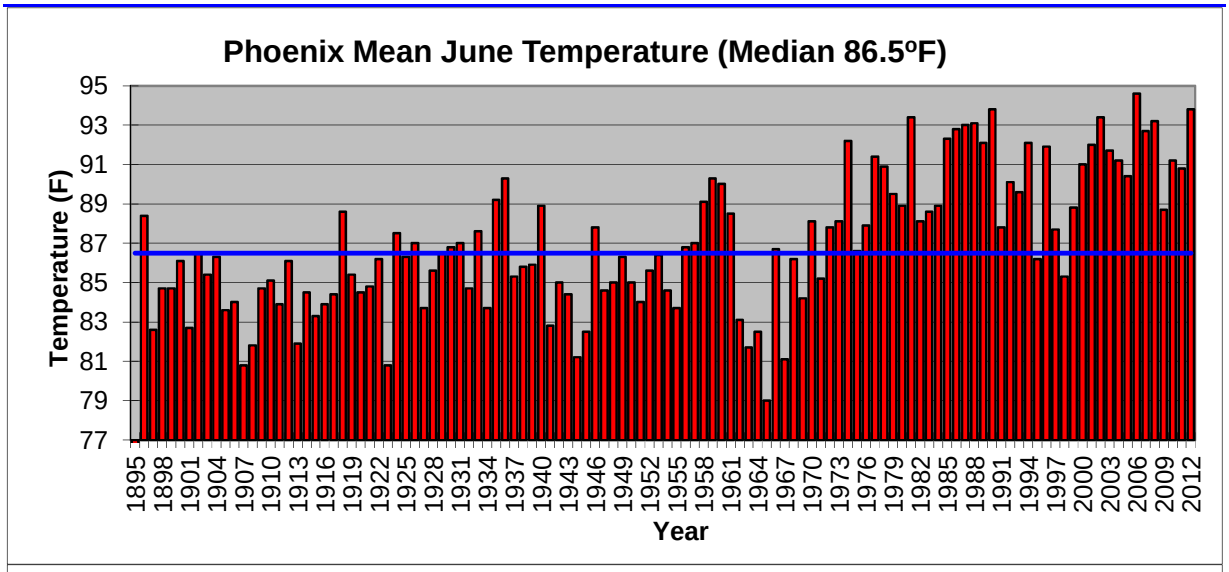


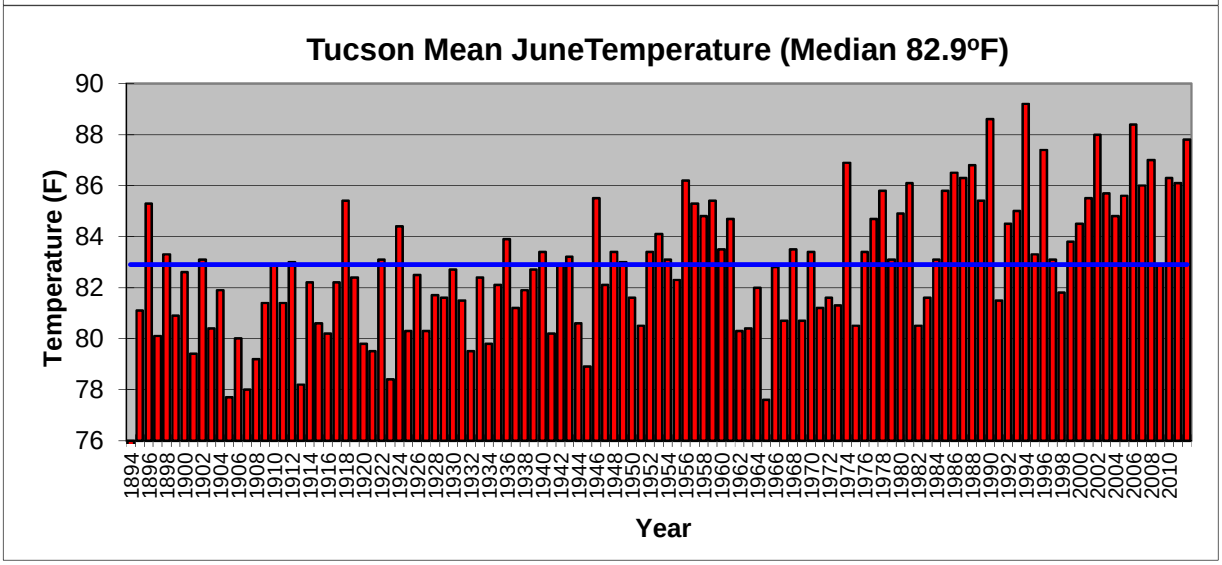
Water Year 2012 (Oct 1 2011 – Sep 30 2012)

Although the water began with wet, cold conditions through December, January through June 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 has been scarce for the water year with most of the state receiving less than 70% of average with the exception of central Mohave and western Pima counties, which had significant precipitation from isolated storms. Most of northern Apache County has received less than 50% of normal precipitation, and a large area on the Navajo Nation has received less than 25% of normal. The extreme dryness is devastating livestock and causing numerous communities to haul water as wells are drying up.

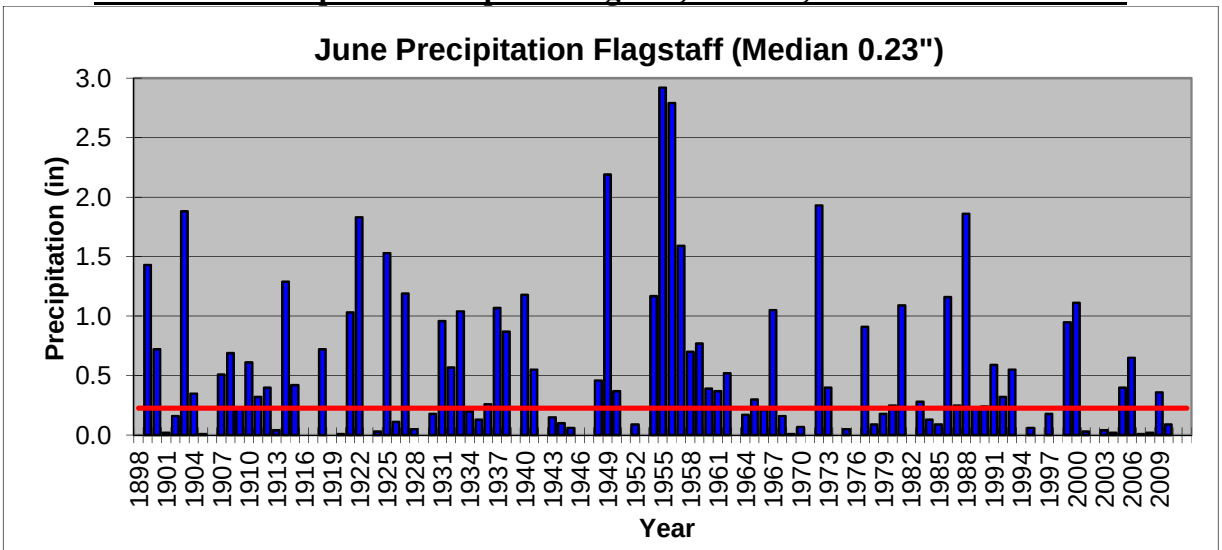
June Mean Temperature Graphs – Flagstaff, Phoenix, and Tucson 1895-2012:

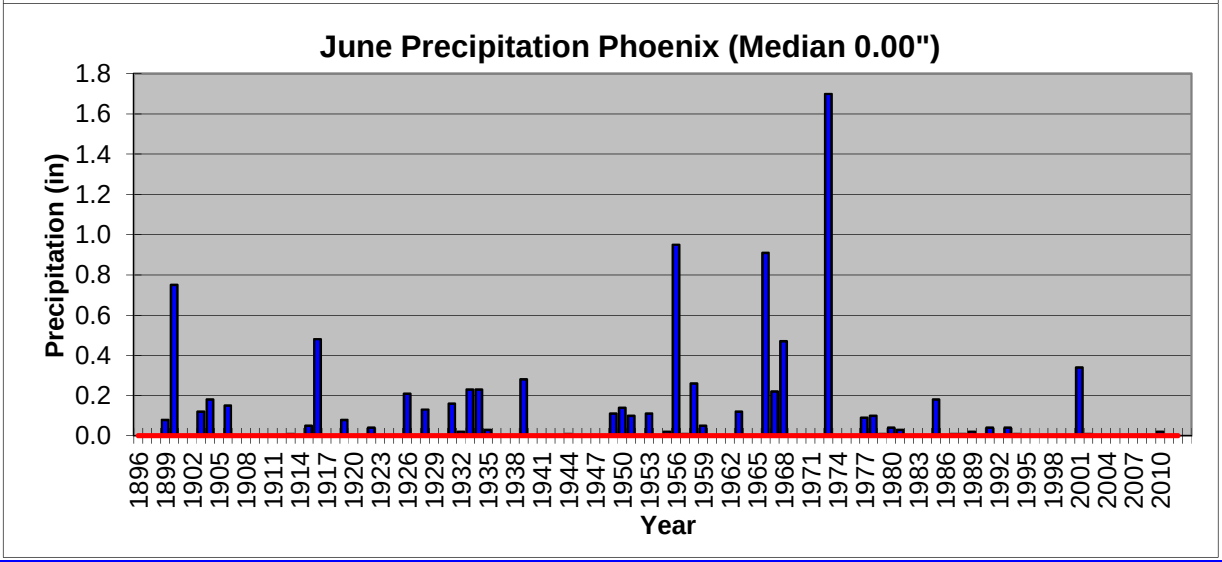


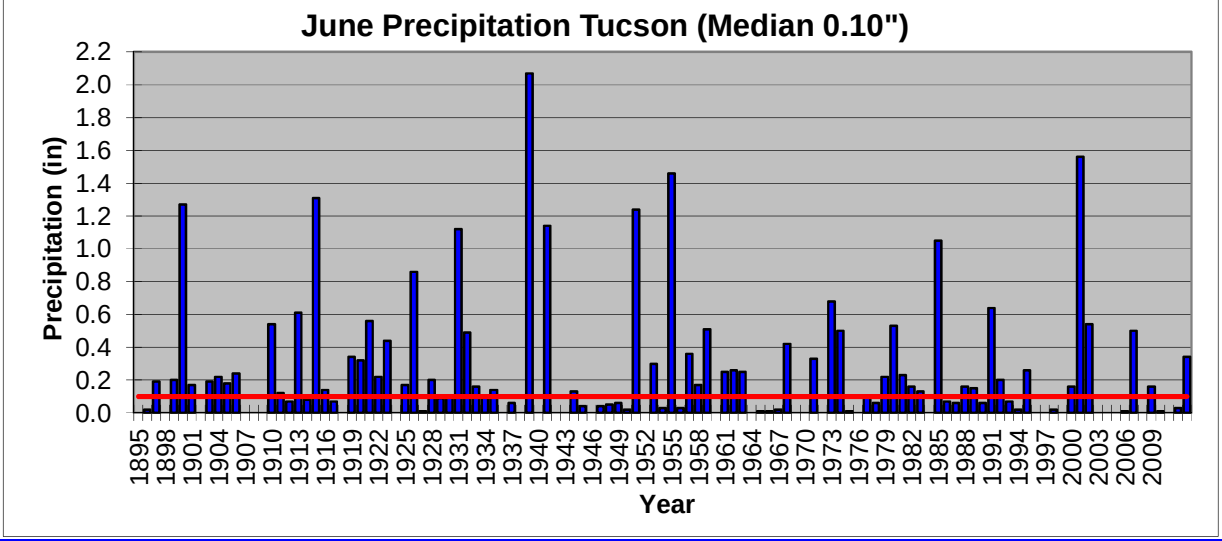




June Mean Precipitation Graphs – Flagstaff, Phoenix, and Tucson 1895-2012:

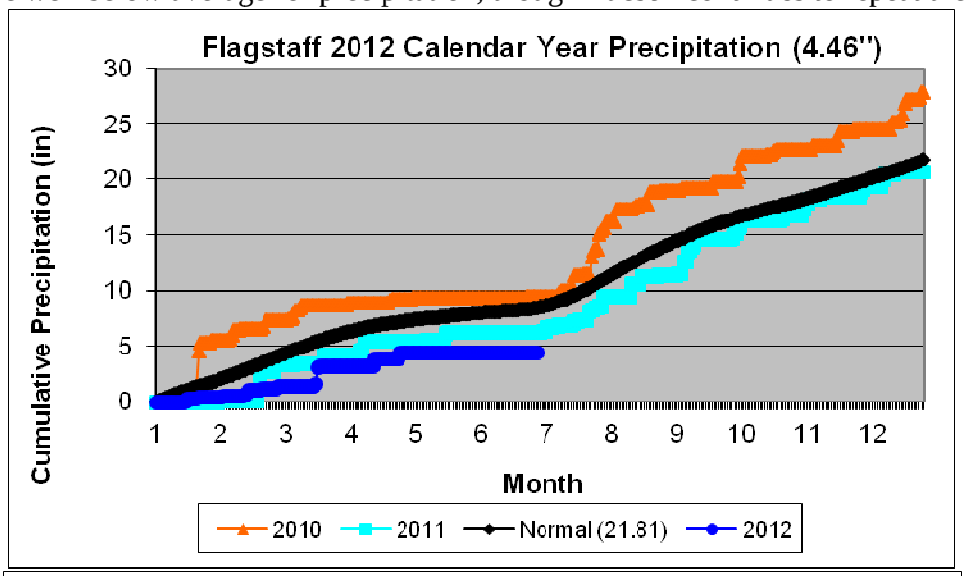


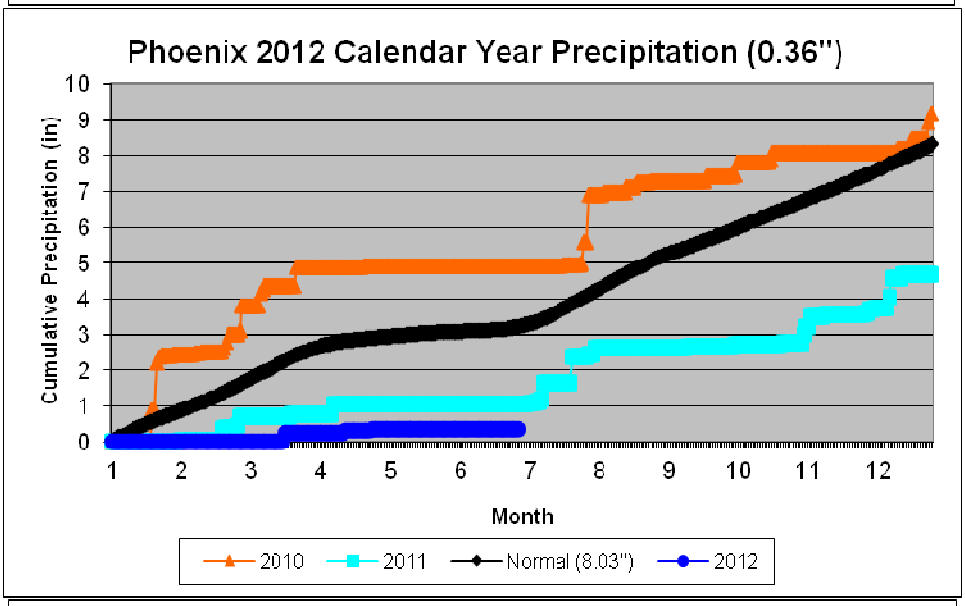


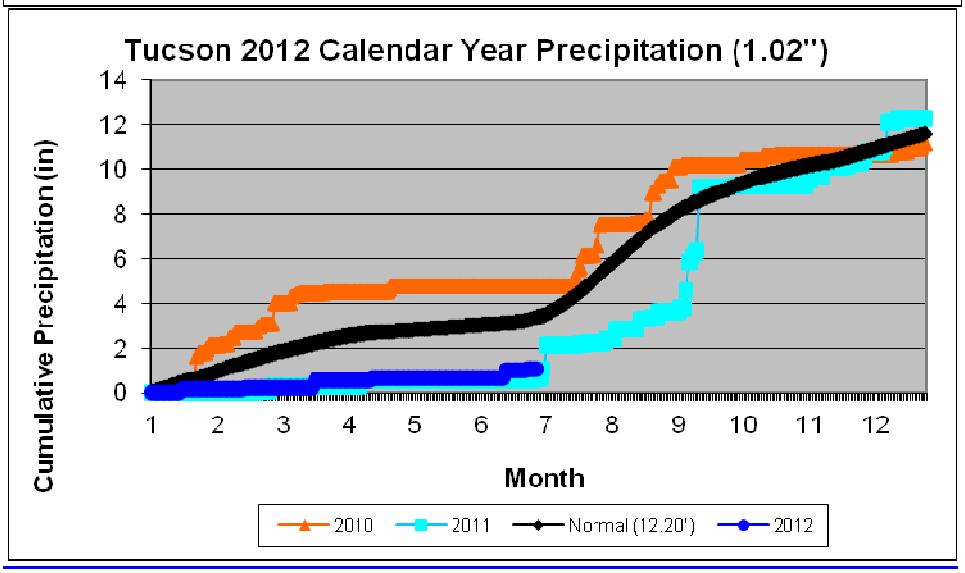


2012 Cumulative Precipitation Graphs – Flagstaff, Phoenix and Tucson:

All three cities are well below average for precipitation, though Tucson continues to repeat the pattern of 2011.







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)