



# Arizona Climate Summary

December 2012

## Summary of conditions for November 2012

### November 2012 Temperature and Precipitation Summary

**November 1<sup>st</sup> – 16<sup>th</sup>:** The first week of November included temperatures well above average and dry conditions statewide. Phoenix experienced 3 days in a row with highs above 90 °F on the 4<sup>th</sup>-6<sup>th</sup> and Tucson had 2 days in a row with high temperatures at 90 °F on the 6<sup>th</sup>-7<sup>th</sup>. By the 9<sup>th</sup> a cold front moved in from the west bringing well below average temperatures across the state through the 12<sup>th</sup>. Average temperatures were 12 degrees below normal in Phoenix, and 11 degrees below normal in Yuma and Blythe on the 11<sup>th</sup>. Precipitation occurred on the 9<sup>th</sup> with the highest totals recorded in Alpine at 0.96", Flagstaff at 0.54", Show Low at 0.33", Coronado NM at 0.22", and Youngtown at 0.20". Other locations recorded precipitation however the totals were not as substantial. The precipitation lingered across the state through the 10<sup>th</sup> and 11<sup>th</sup> and finally cleared out by the 12<sup>th</sup>. From the 13<sup>th</sup>-16<sup>th</sup> a ridge of high pressure returned to the southwest and daily average temperatures were close to normal.

**November 17<sup>th</sup> – 30<sup>th</sup>:** From the 17<sup>th</sup>-18<sup>th</sup>, the ridge of high pressure broke down and a pocket of moisture made its way into the southeastern part of the state. Precipitation on the 18<sup>th</sup> was isolated and insignificant including totals of 0.13" in Sierra Vista, 0.09" in Bowie, and 0.09" in Douglas. The remaining portion of November was dominated by high pressure across the southwest as the storm track was confined to the northern part of the country. Many warmer than average days occurred in Arizona during the final couple weeks of the month. Record high temperatures were set at many locations around Arizona for 10 straight days from the 22<sup>nd</sup>-31<sup>st</sup>. Days including the most new high temperature records were on the 23<sup>rd</sup> with 4 new record highs at Sasabe, Maricopa, Phantom Ranch, and Beaver Dam and the 29<sup>th</sup> with 5 new record highs at Fountain Hills, Ft Thomas, Yucca, Phantom Ranch, and Beaver Dam. Yuma was at least 5 degrees above average for the final 8 days of the month and Phoenix was at least 5 degrees above average for the final 13 days of the month including 4 days of temperatures 10+ degrees above average. Such a long stretch of days with temperatures well above average at many locations in Arizona made this November one of the warmest on record.

**In This Issue:** Overview of November and the monsoon, graphs of the November daily maximum and minimum temperatures, precipitation, mean daily dew points for Flagstaff, Phoenix, and Tucson; November climate statistics, maps of mean monthly maximum and minimum temperatures, precipitation, dew points, wind speeds for November; and graphs of the mean November 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. 19 of this report for calendar abbreviations.

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

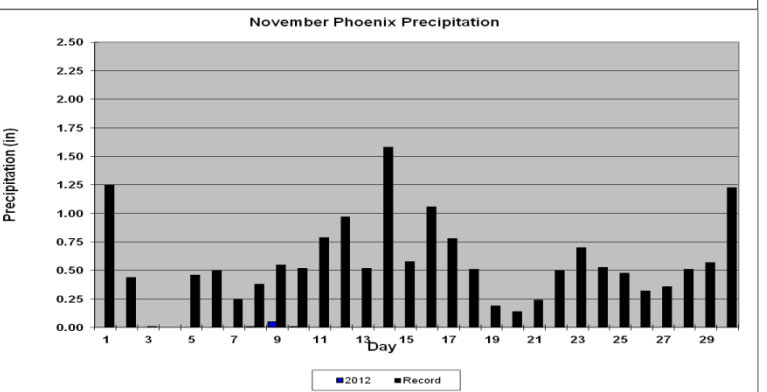
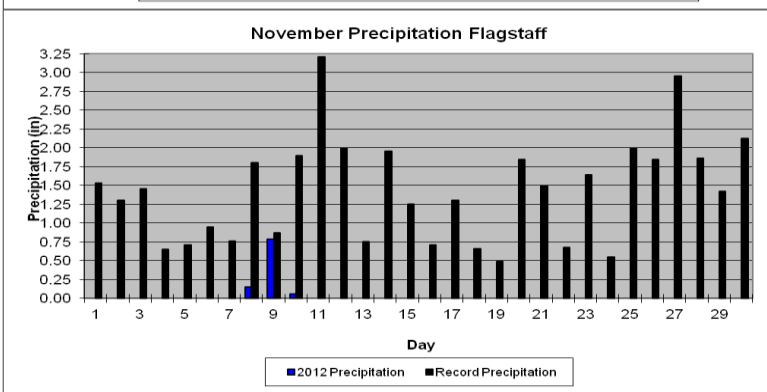
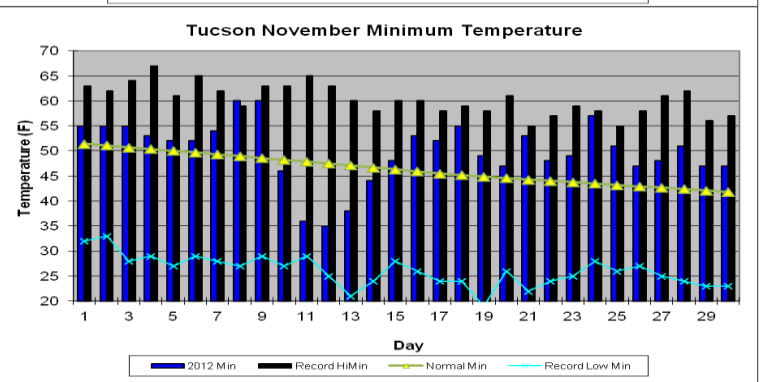
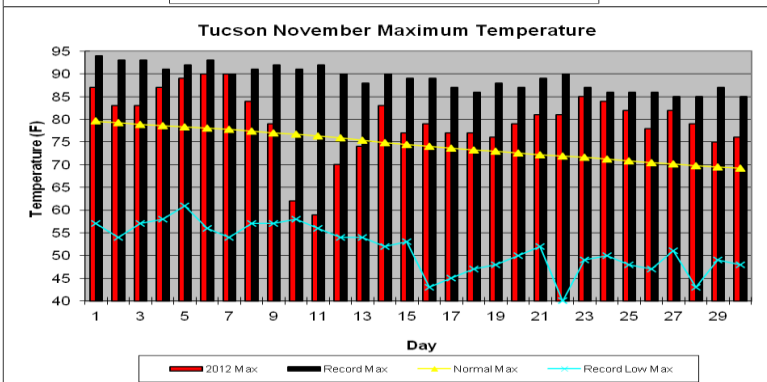
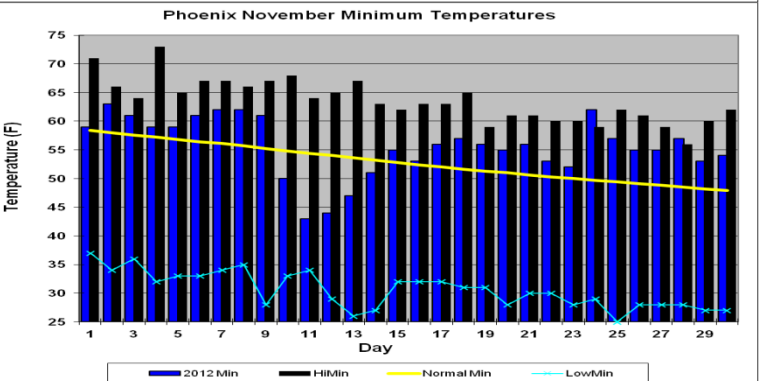
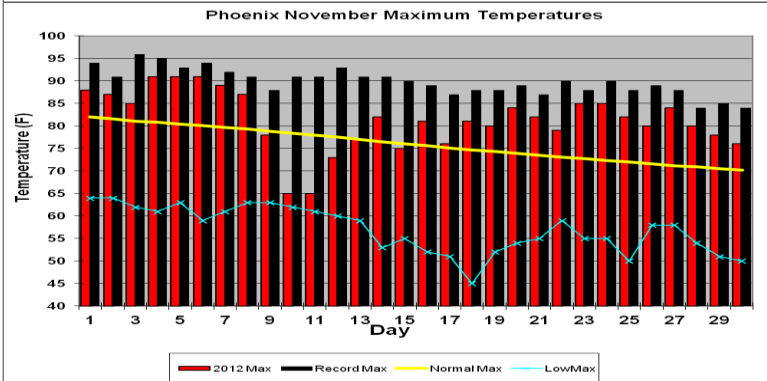
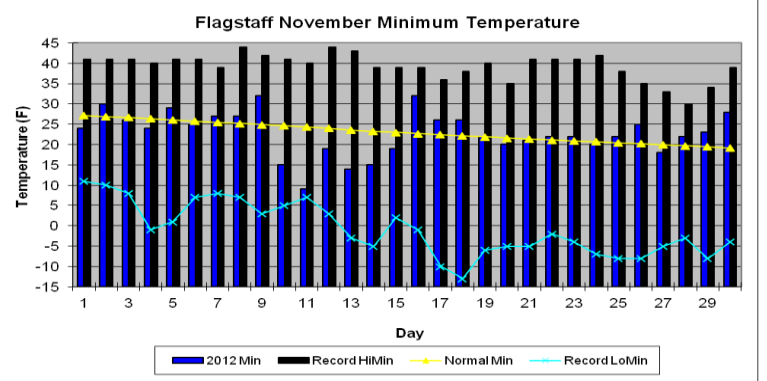
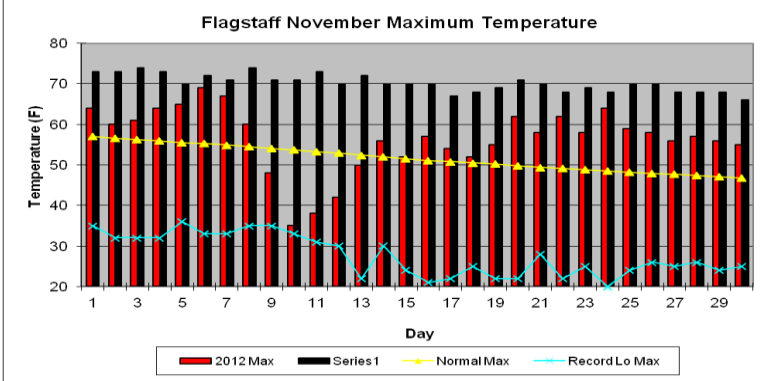
**\*\*Note:** The discrepancy between the Statewide Temperature and Precipitation values for Phoenix, Flagstaff and Tucson and the daily values in their graphs are due to the reporting times. Statewide Temperature and Precipitation values are taken at 5pm, while official daily records at the airports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

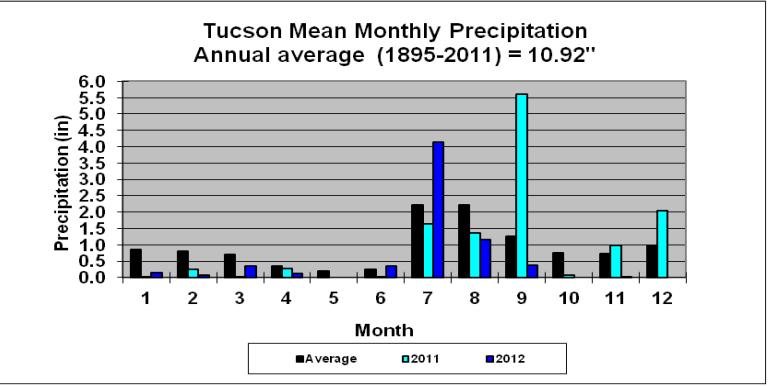
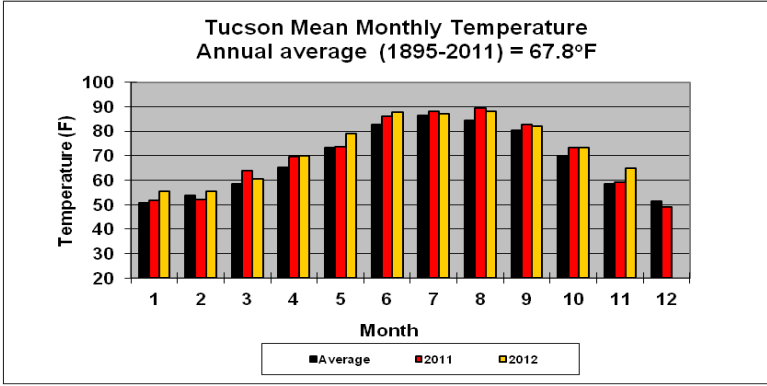
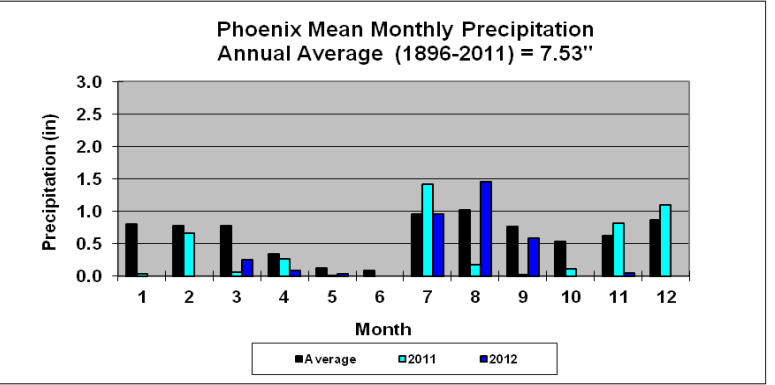
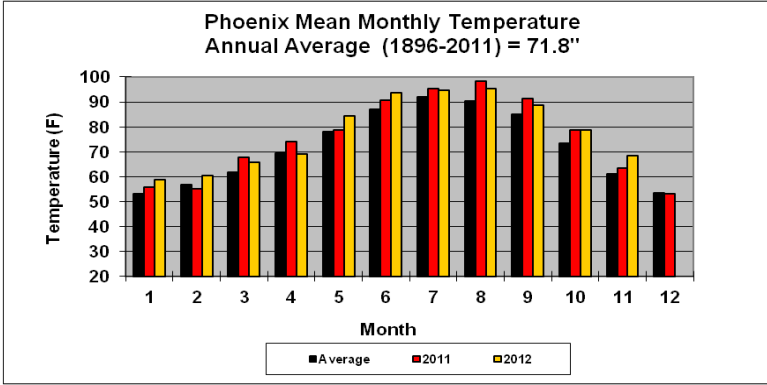
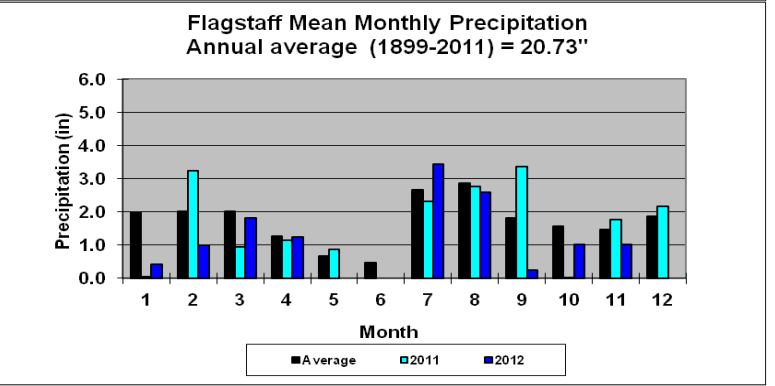
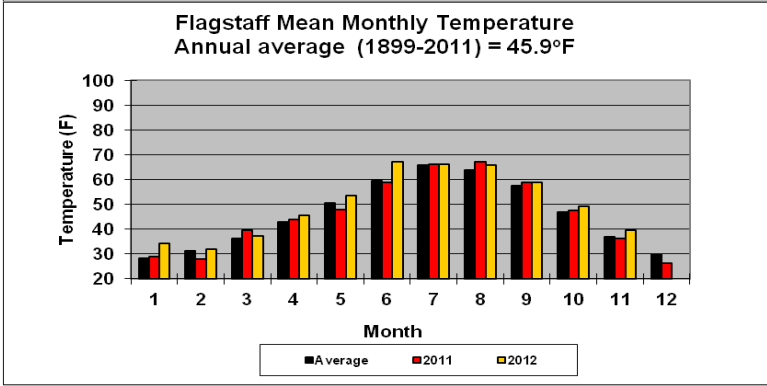
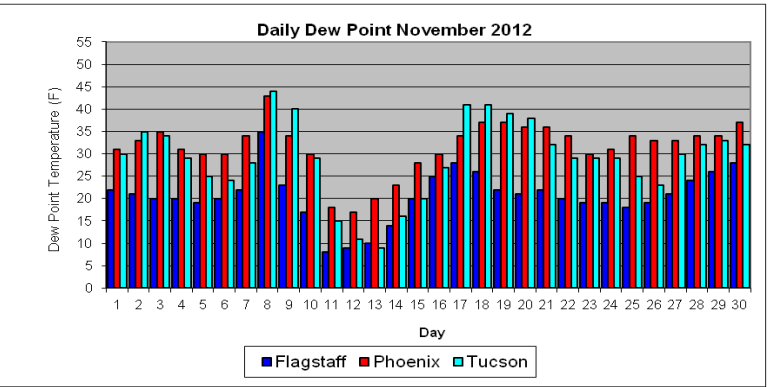
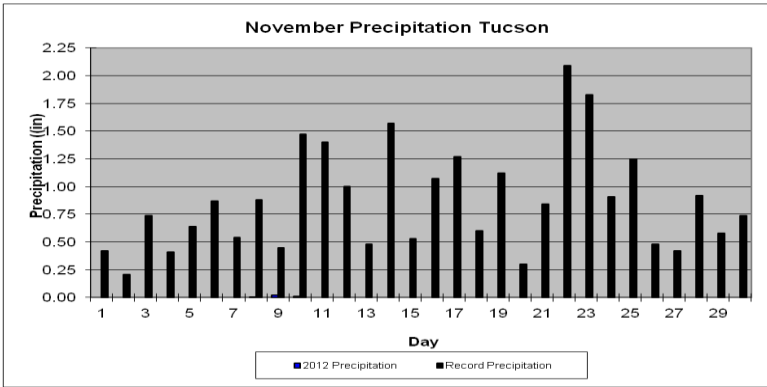
State Climate Office  
**Dr. Nancy J. Selover, State Climatologist**  
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# November 2012 Daily Temperature, Precipitation, & Dew Point for Flagstaff, Phoenix, and Tucson





## FLAGSTAFF CLIMATE STATISTICS

November 2012

This November was tied for 22<sup>nd</sup> warmest on record and had no significant ranking for precipitation.

Avg Max Temp (F)	56.5	Normal	50.5
Avg Min Temp (F)	22.8	Normal	22.9
Avg Mean Temp (F)	39.6	Normal	36.7
Departure from Normal (F)	+2.9		

Highest Monthly Avg Temp (F)	44.9 in 1949
Lowest Monthly Avg Temp (F)	29.6 in 1972

Highest Temp this month (F): 69 on 6<sup>th</sup>  
 Lowest Temp this month (F): 9 on 11<sup>th</sup>

Record High (F): 74 on 11/03/1977  
 11/08/1973

Record Low (F): -13 on 11/18/1958

No temperature or precipitation records this month:

Flagstaff Number of Days of:

Minimum Temp 30° or higher	3
Minimum Temp 20° or lower	9
Maximum Temp 60° or higher	11
Maximum Temp 40° or lower	2

Heating Degree Days	754	Normal	849
Cooling Degree Days	164	Normal	117
Degree base 65°F			

Total November Precipitation	1.02"
Normal November Precipitation	1.76"
Departure from normal	-0.74"
Greatest 24-Hr Precipitation	0.81" on 11/09
Total Precipitation Year-to-Date	12.81"
Departure from Normal	-7.18"

Number of Days:

Clear	27
Partly Cloudy	2
Cloudy	1

Greatest November Precipitation	7.10" in 1905
Least November Precipitation	0.00" in 1903, 1904, 1916, 1932, 1948, 1980, 1989, 1999

Average Wind Speed	4.7 mph
Highest Peak Gust	41 mph from 200° on 8 <sup>th</sup>

## PHOENIX CLIMATE STATISTICS

November 2012

This November was tied for 2<sup>nd</sup> warmest on record and had no significant ranking for precipitation.

Avg Max Temp(F)	81.2	Normal	75.5
Avg Min Temp(F)	55.6	Normal	52.7
Avg Mean Temp (F)	68.4	Normal	64.1
Departure from Normal (F)	+4.3		

Highest Monthly Avg Temp (F)	70.0 in 2007
Lowest Monthly Avg Temp (F)	55.0 in 1922

Highest Temp this month (F): 91 on 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>  
 Lowest Temp this month (F): 43 on 11<sup>th</sup>

Record High (F): 96 on 11/03/2009  
 11/02/1924  
 11/01/1924

Record Low (F): 27 on 11/23/1931

Temperature or precipitation records this month:  
 24<sup>th</sup> HiMin 62, previous record 59 set in 1965  
 28<sup>th</sup> HiMin 57, previous record 56 set in 2009

Phoenix Number of Days of:

Minimum Temp 50° or lower	4
Minimum Temp 60° or higher	7
Maximum Temp 70° or lower	2
Maximum Temp 90° or higher	3

Heating Degree Days	27	Normal	97
Cooling Degree Days	137	Normal	70
Degree base 65°F			

Total November Precipitation	0.05"
Normal November Precipitation	0.65"

Departure from normal -0.60"  
 Greatest 24-Hr Precipitation 0.05" on 11/09  
 Total Precipitation Year-to-Date 3.41"  
 Departure from Normal -3.74"

Greatest November Precipitation 3.61" in 1962  
 Least November Precipitation 0.00" in 1897,  
 1903, 1911, 1912, 1916, 1920, 1922, 1924, 1932,  
 1938, 1943, 1945, 1948, 1952, 1954, 1956, 1960,  
 1971, 1977, 1980, 1982, 1995, 2005, 2006

Number of Days:

Clear 17  
 Partly Cloudy 13  
 Cloudy 0

Average Wind Speed 4.2 mph  
 Highest Peak Gust 33 mph from 290° on 10<sup>th</sup>

TUCSON CLIMATE STATISTICS  
 November 2012

This November was the 3<sup>rd</sup> warmest and 26<sup>th</sup> driest  
 on record

Heating Degree Days 65 Normal 182  
 Cooling Degree Days 64 Normal 27  
 Degree base 65°F

Avg Max Temp(F) 79.6 Normal 73.5  
 Avg Min Temp(F) 49.9 Normal 46.1  
 Avg Mean Temp(F) 64.8 Normal 59.8  
 Departure from Normal (F) +5.0

Total November Precipitation 0.03"  
 Normal November Precipitation 0.57"  
 Departure from normal -0.54"  
 Greatest 24-Hr Precipitation 0.02" on 11/09  
 Total Precipitation Year-to-Date 6.73"  
 Departure from Normal -3.93"

Highest Monthly Avg Temp (F) 65.7 in 2007  
 Lowest Monthly Avg Temp (F) 50.9 in 1911

Highest Temp this month (F): 90 on 6<sup>th</sup>, 7<sup>th</sup>  
 Lowest Temp this month (F): 35 on 12<sup>th</sup>

Greatest November Precipitation 4.61" in 1905  
 Least November Precipitation 0.00" in 1894,  
 1897, 1904, 1911, 1912, 1916, 1923, 1932, 1935,  
 1942, 1943, 1945, 1950, 1952, 1954, 1955, 1956,  
 1970, 1980, 1992, 2005, 2006

Record High (F): 93 on 11/03/2009  
 11/06/1999  
 11/06/1934

Record Low (F): 19 on 11/19/1921

Number of Days:

Clear 26  
 Partly Cloudy 3  
 Cloudy 1

Temperature or precipitation records this month:  
 7<sup>th</sup> HiMax 90 tied, first set in 2007  
 8<sup>th</sup> HiMin 60 set, previous record 59 set in 1988

Tucson Number of Days of:

Minimum Temp 40° or lower 3  
 Minimum Temp 50° or higher 16  
 Maximum Temp 70° or lower 3  
 Maximum Temp 90° or higher 2

Average Wind Speed 6.3 mph  
 Highest Peak Gust 38 mph from 210° on 8<sup>th</sup>

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

**Winds for November:**

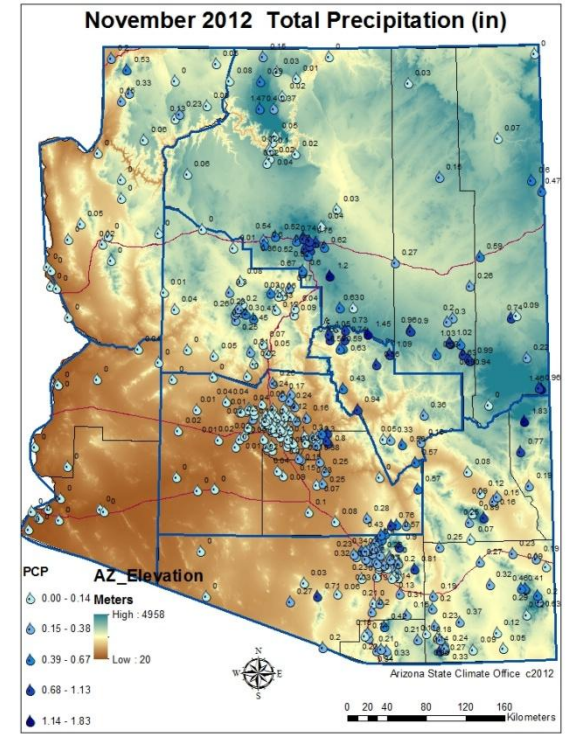
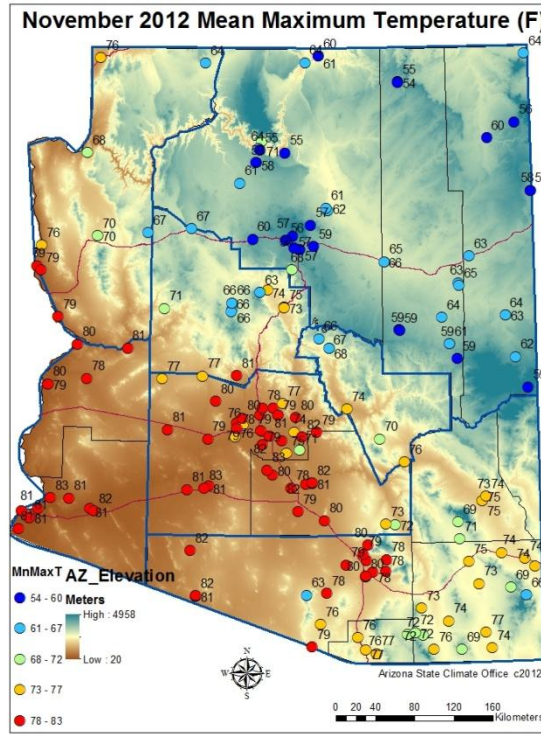
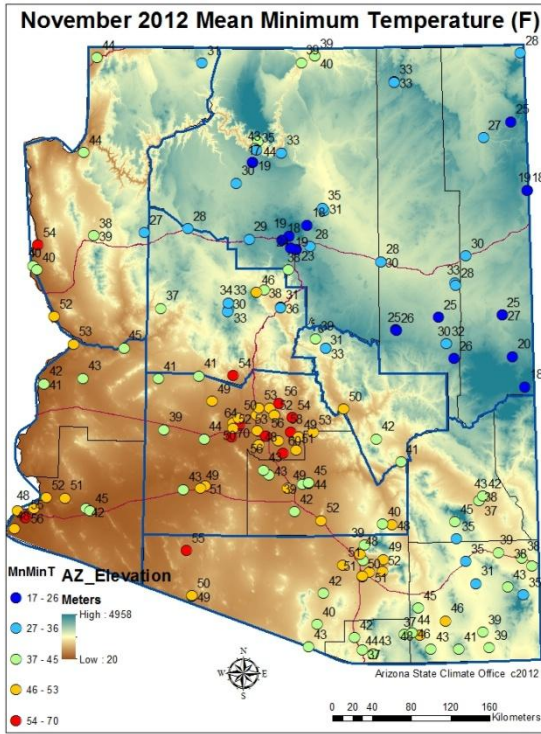
Day	Phoenix		Flagstaff		Tucson	
	Avg	Max	Avg	Max	Avg	Max
1	4	17	4.3	29	7	22
2	3.5	13	3.5	24	6.1	21
3	3.8	16	1.4	16	5.5	20
4	2.6	12	2.9	22	5.5	15
5	2.6	12	5.6	23	5.9	14
6	3.4	14	2.3	14	5.8	15
7	4.9	14	3.8	24	5.9	20
8	6.1	24	11.6	41	5.3	38
9	11	26	19.3	28	10.5	37
10	10.8	33	11.4	37	8.7	35
11	3.3	14	3.1	21	4.6	23
12	5.8	29	6.3	21	12	36
13	4.5	20	3.2	22	5.7	20
14	2.9	14	2.3	15	5.6	21
15	3.1	14	1.8	14	5.8	18
16	2.9	13	4.9	24	5.5	18
17	4.3	13	8.5	35	4.8	24
18	3.6	18	5.3	28	4.8	21
19	2.6	15	2.7	17	4	16
20	3.4	20	1.8 M		5.9	26
21	1.6	12	3.7	21	4.4	15
22	2.7	10	2.4	14	4.4	14
23	2.5	13	2.9	18	7.5	22
24	5.8	23	1.5	16	10	31
25	3.2	13	4.5	23	8.2	22
26	3.74	10	1.3	14	5.3	15
27	3.5	15	2.2	23	6.7	21
28	3.9	13	4.7	28	5.7	26
29	4.5	13	7.2	32	5.9	21
30	4.5	17	5.7	21	4.6	14

**Dew Points for November:**

**Daily Average Dew Point (°F):**

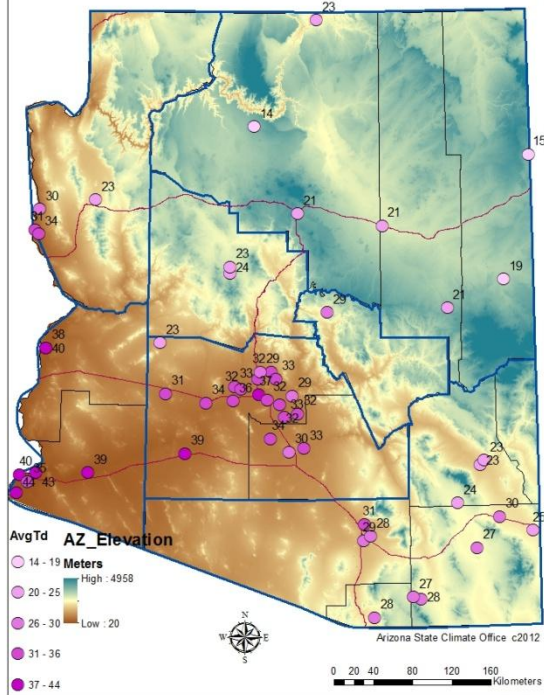
Day	Phx	Tuc	Flg
1	31	30	22
2	33	35	21
3	35	34	20
4	31	29	20
5	30	25	19
6	30	24	20
7	34	28	22
8	43	44	35
9	34	40	23
10	30	29	17
11	18	15	8
12	17	11	9
13	20	9	10
14	23	16	14
15	28	20	20
16	30	27	25
17	34	41	28
18	37	41	26
19	37	39	22
20	36	38	21
21	36	32	22
22	34	29	20
23	30	29	19
24	31	29	19
25	34	25	18
26	33	23	19
27	33	30	21
28	34	32	24
29	34	33	26
30	37	32	28

November 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.

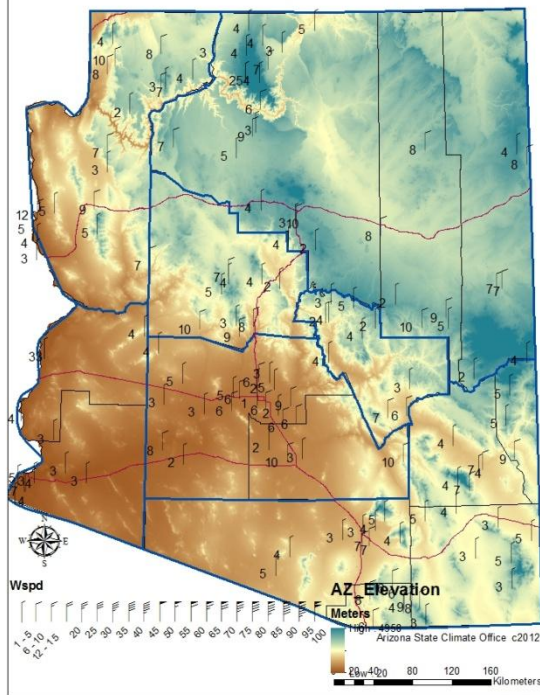


Average nighttime temperatures ranged from 17°F at Grand Canyon National Park, to 70°F at Phoenix Goodyear Airport. Average daytime temperatures ranged from 54°F at Kayenta on the Navajo Nation, to 83°F at Yuma, Gila Bend and Maricopa. Precipitation values ranged from 0.00” at many locations in the southwest to 1.83” at Stray Horse in the White Mountains of eastern Arizona.

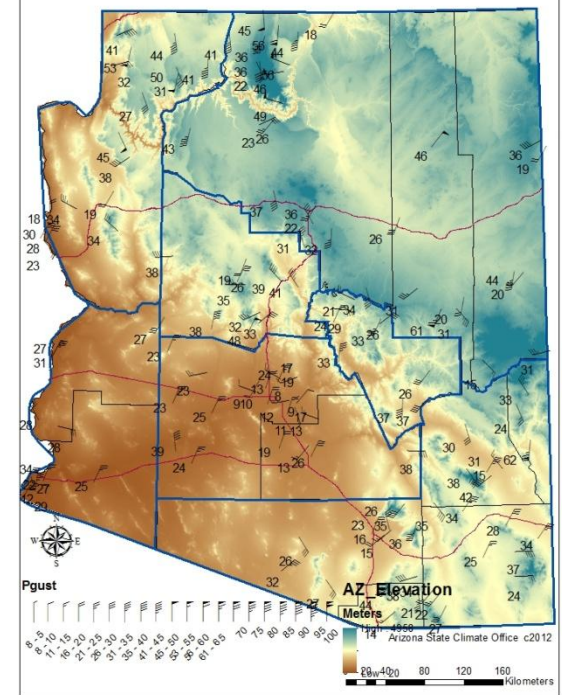
November 2012 Average DewPoint Temperature (F)



November 2012 Average Wind Speed (mph)

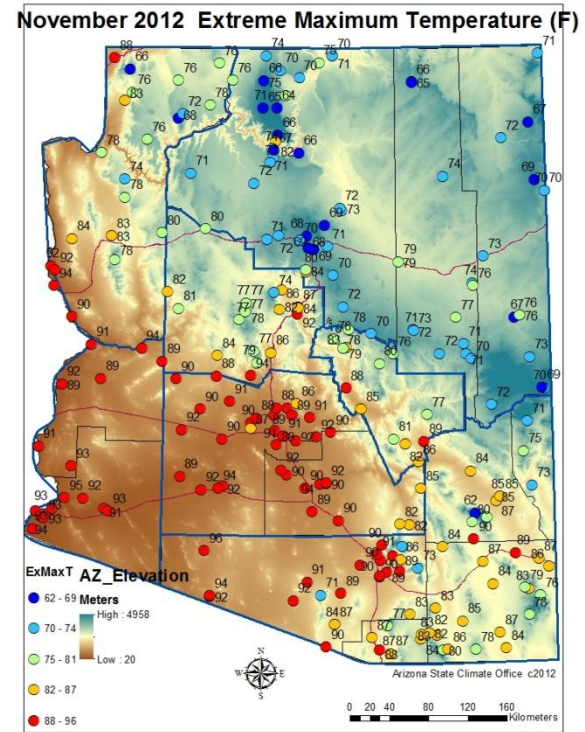
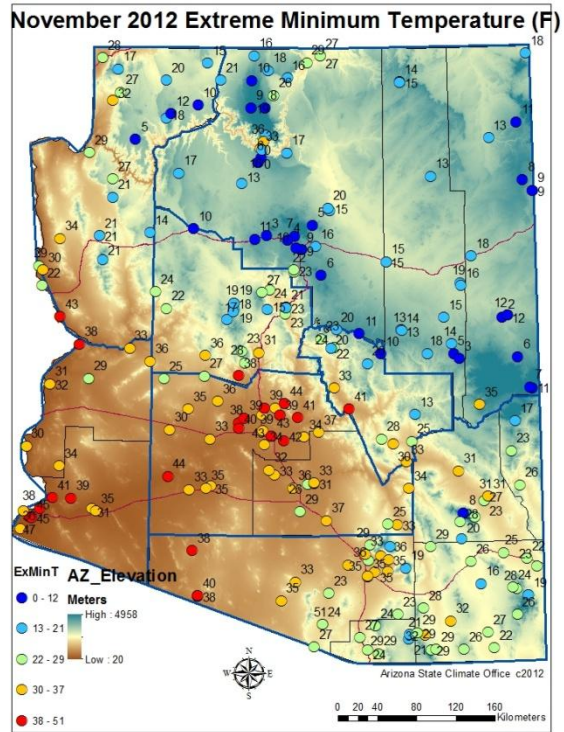


November 2012 Peak Wind Gust (mph)



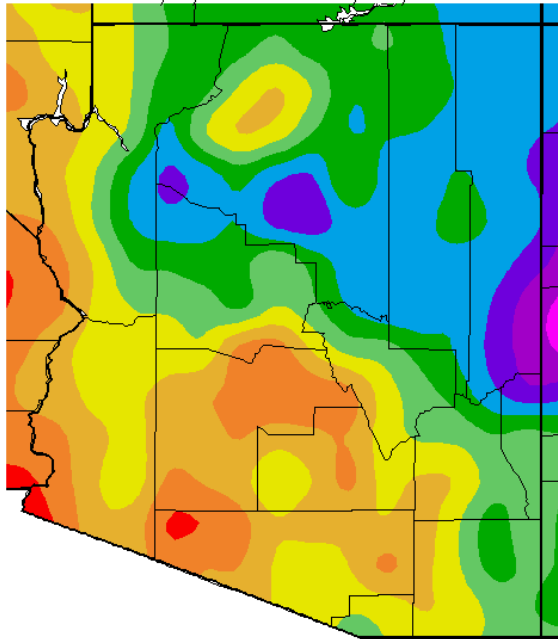
Average monthly dew points ranged from 14°F at Grand Canyon National Park, to 44°F at Yuma South. As in most months, average winds were light, with 12 mph as the highest average at Bullhead City. The highest peak wind gust was 62 mph at Guthrie. Peak wind gusts blew in all different directions, which is typical as the high winds are generally attributed to thunderstorm outflows, which have no dominant direction. The arrows point to the direction the winds blow from. Most of the high wind gusts came from the southwest.



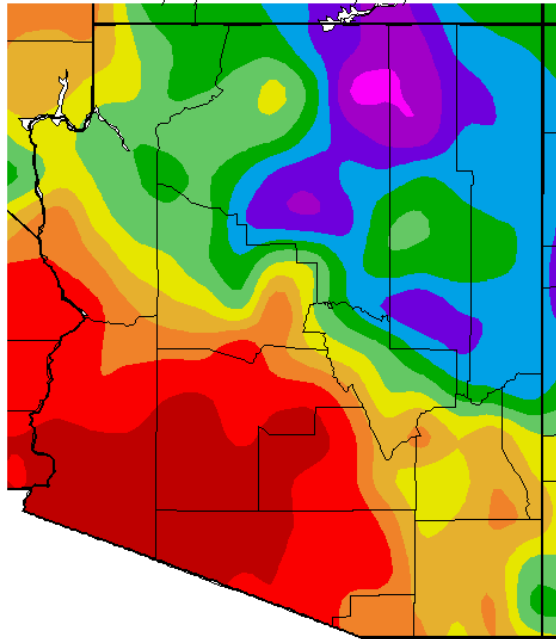


Lowest temperature in November was 0°F recorded at Grand Canyon national Park. The highest daytime temperature of the month was 96°F recorded at Ajo.

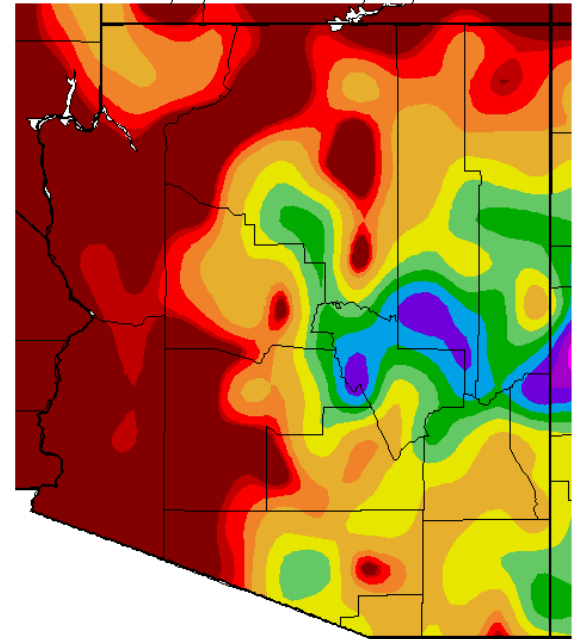
Av. Min. Temperature (deg. F)  
11/1/2012 – 11/30/2012



Av. Max. Temperature (deg. F)  
11/1/2012 – 11/30/2012



Total Precipitation (in.)  
11/1/2012 – 11/30/2012

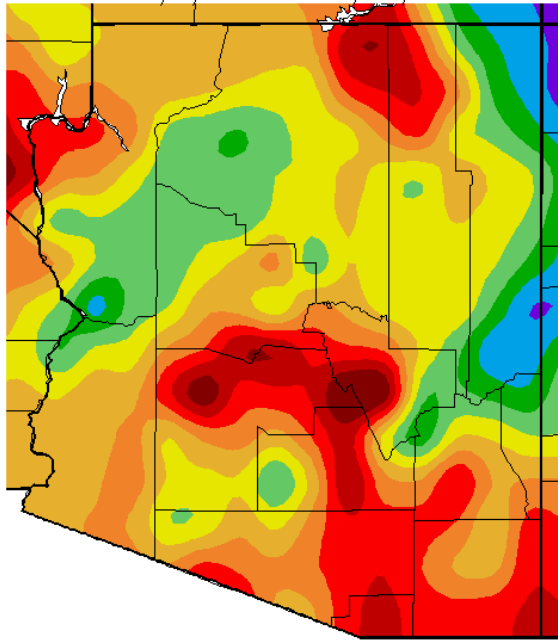


15 20 25 30 35 40 45 50 55 60 65  
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54 57 60 63 66 69 72 75 78 81 84  
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NOAA Regional Climate Centers

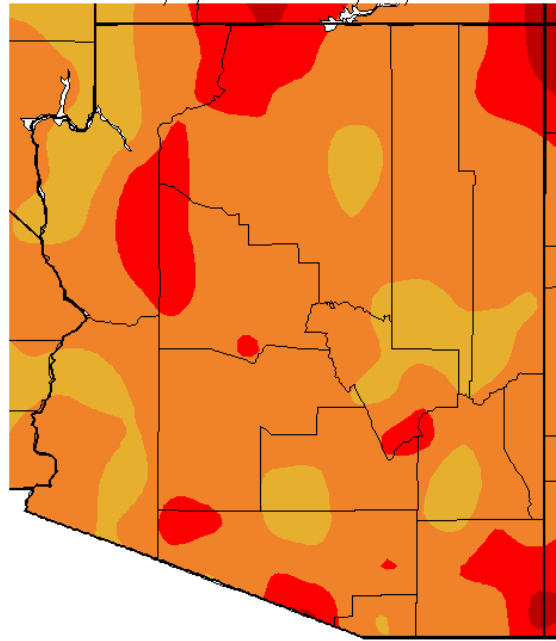
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Av. Min. Temperature dep from Ave (deg. F)  
11/1/2012 – 11/30/2012



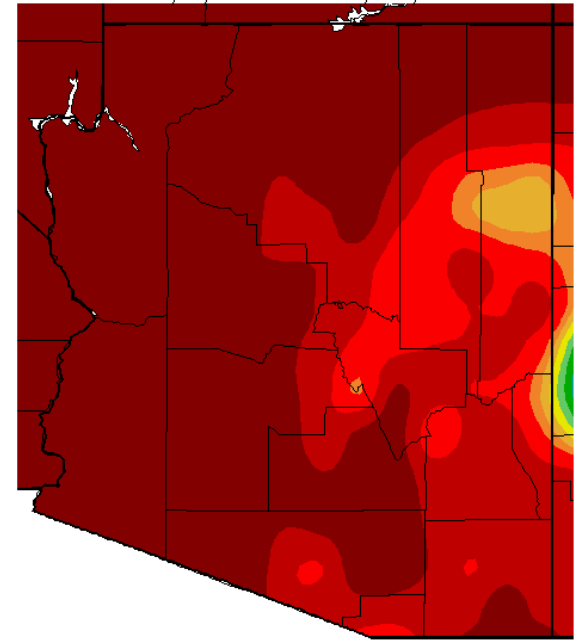
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NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)  
11/1/2012 – 11/30/2012



Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

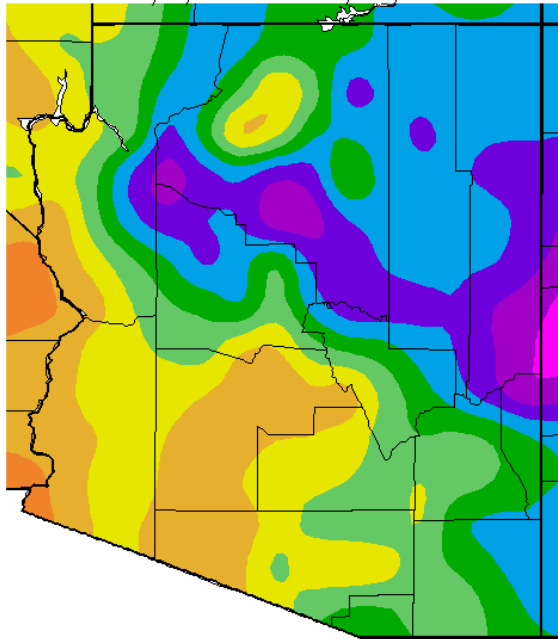
Percent of Average Precipitation (%)  
11/1/2012 – 11/30/2012



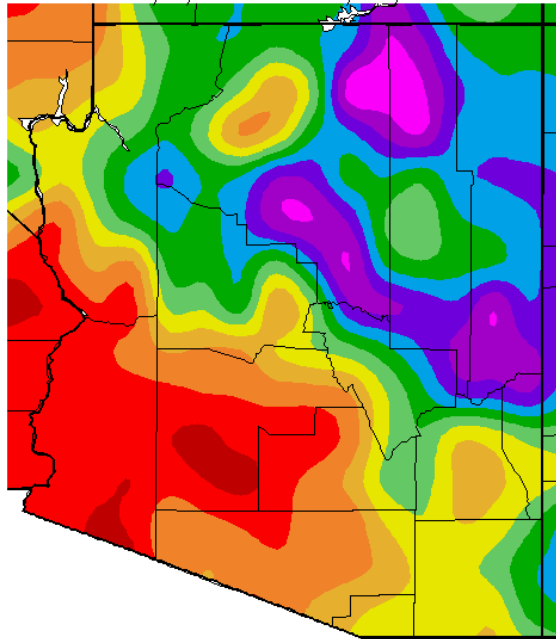
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November minimum temperatures were as much as 6°F warmer than normal in Gila and western Maricopa counties, with temperatures up to 3 degrees colder than normal in southern and northern Apache County. Southern Mohave and western Coconino counties were also cooler than average in November. Daytime temperatures were 2-8°F warmer than normal across the entire state. Rainfall was scarce in November. The entire western half of the state had less than 255 of average, while eastern Arizona had less than 70% of average. November winter storms stayed well north of Arizona.

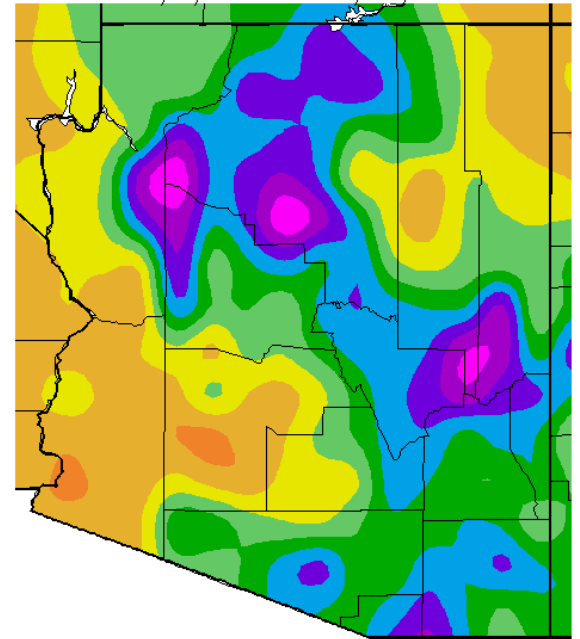
Av. Min. Temperature (deg. F)  
1/1/2012 - 11/30/2012



Av. Max. Temperature (deg. F)  
1/1/2012 - 11/30/2012



Total Precipitation (in.)  
1/1/2012 - 11/30/2012

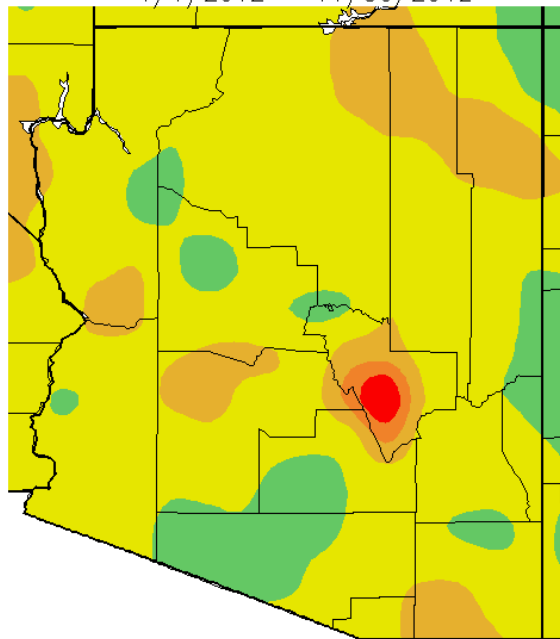


30 35 40 45 50 55 60 65 70 75 80  
Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

66 69 72 75 78 81 84 87 90 93 96  
Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

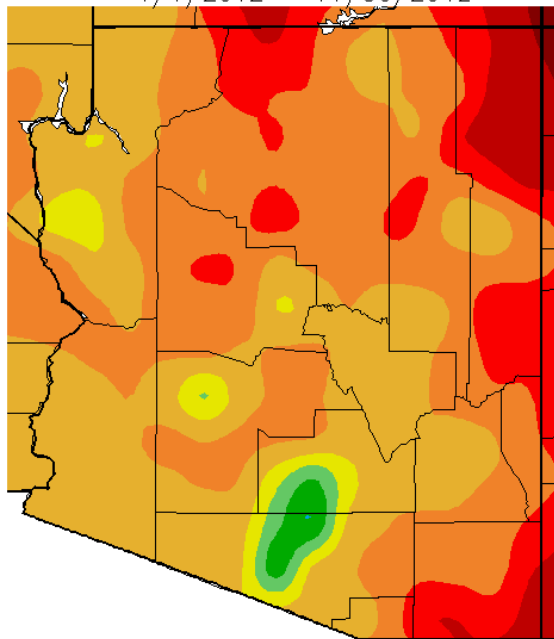
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Av. Min. Temperature dep from Ave (deg. F)  
1/1/2012 - 11/30/2012



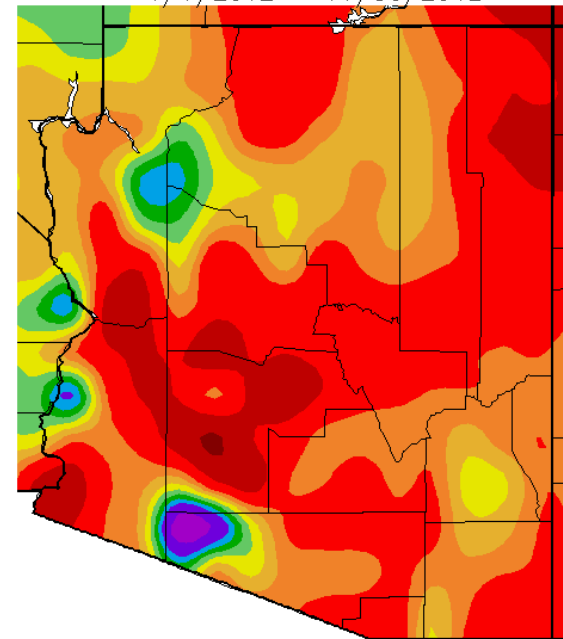
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Av. Max. Temperature dep from Ave (deg F)  
1/1/2012 - 11/30/2012



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Percent of Average Precipitation (%)  
1/1/2012 - 11/30/2012

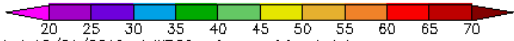
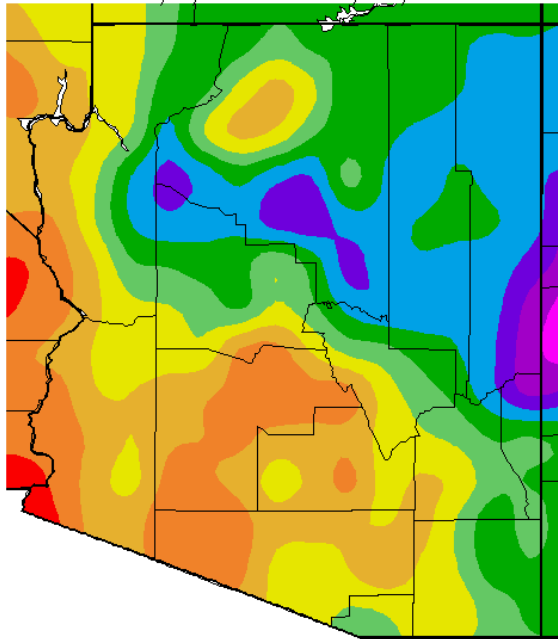


Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

### Calendar Year 2012

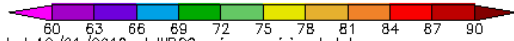
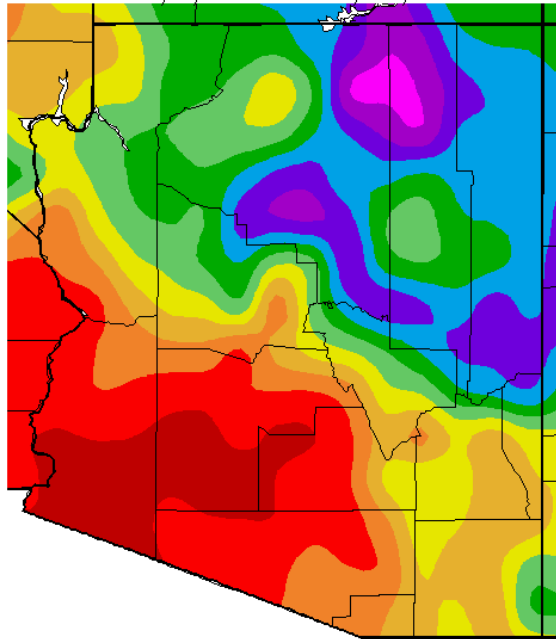
Since January 1<sup>st</sup>, nighttime temperatures have been 0 to 2°F warmer than average across most of the state, with Gila County 4 to 8°F warmer than average, and western Pima and southwestern Pinal counties 0 to 2°F cooler than average. Daytime temperatures have been 1-5°F warmer than normal statewide, with the warmest conditions on the Colorado Plateau and 4-5°F warmer than average in northern Apache County. Precipitation for the calendar year is less than 70% of average in central and northeastern Arizona. East central Mohave County and the western quarter of Pima County have received above average precipitation. 2012 has been dry from January through the summer and fall. The El Niño that was developing has disappeared, so this coming winter may also be dry.

Av. Min. Temperature (deg. F)  
10/1/2012 – 11/30/2012



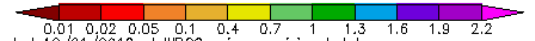
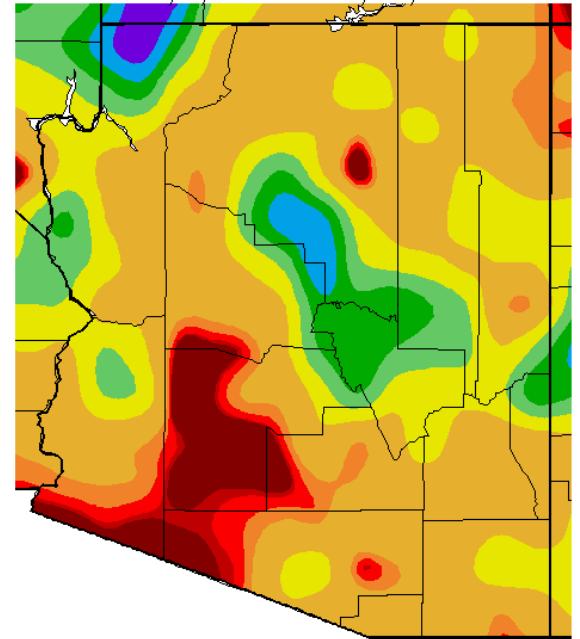
Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Max. Temperature (deg. F)  
10/1/2012 – 11/30/2012



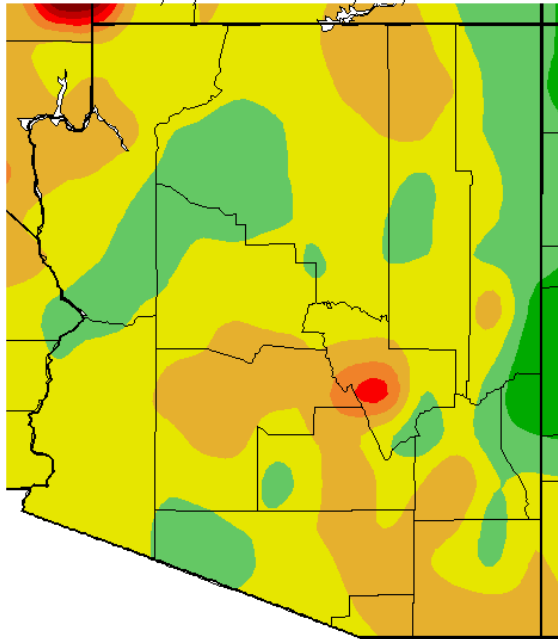
Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

Total Precipitation (in.)  
10/1/2012 – 11/30/2012



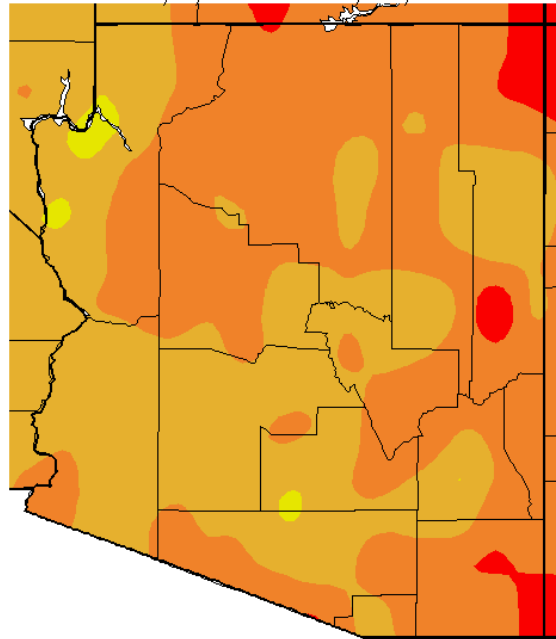
Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Min. Temperature dep from Ave (deg. F)  
10/1/2012 – 11/30/2012



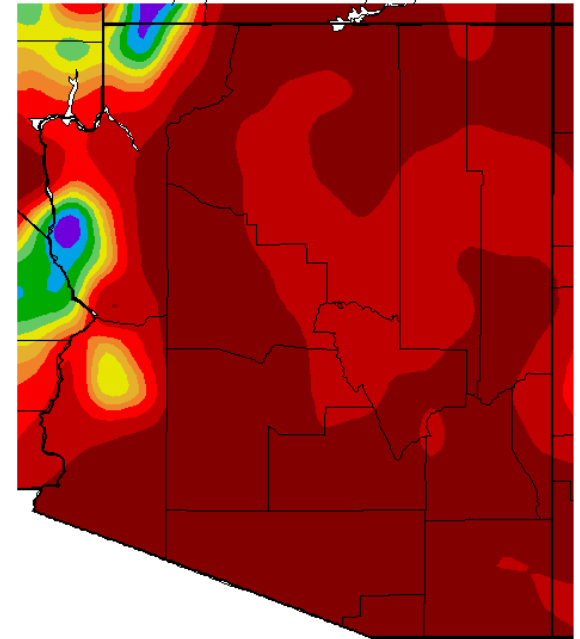
Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)  
10/1/2012 – 11/30/2012



Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

Percent of Average Precipitation (%)  
10/1/2012 – 11/30/2012

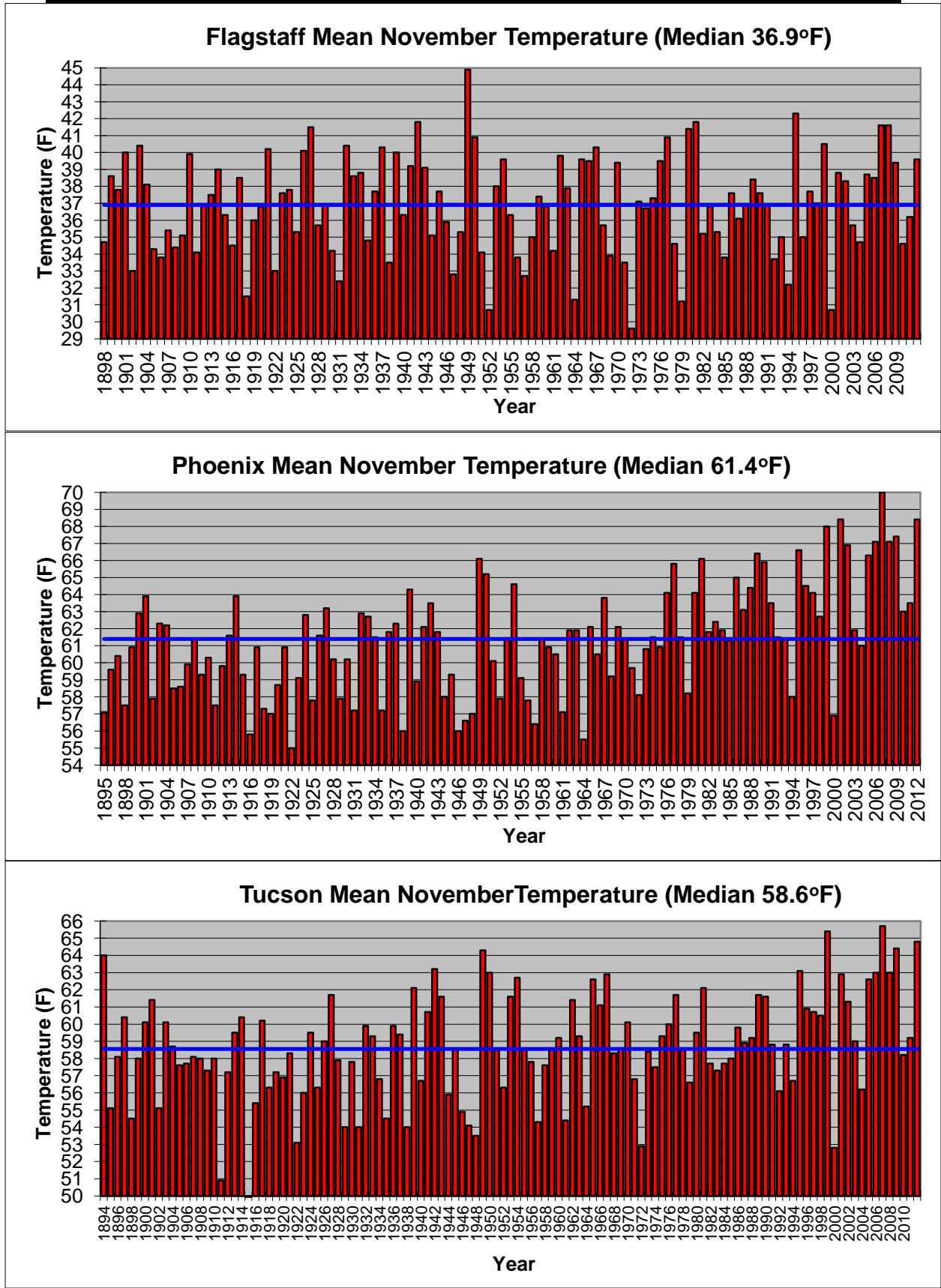


Generated 12/01/2012 at WRCC using provisional data.  
NOAA Regional Climate Centers

### 2013 Water Year

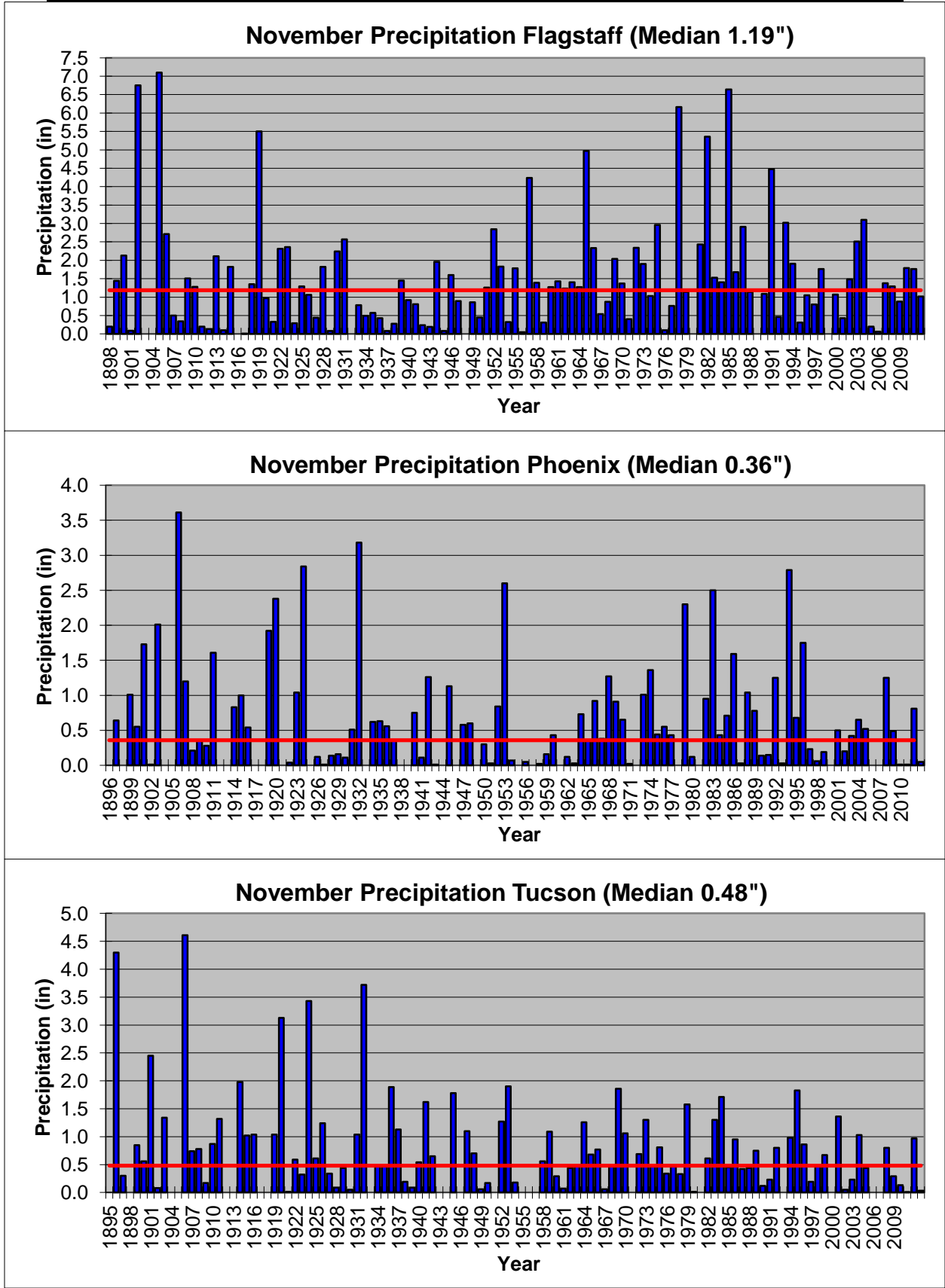
Except along the eastern border with New Mexico and a slash of territory from southern Mohave into western Coconino County, minimum temperatures have been 0 to 4°F warmer than average. Maximum temperatures have been 2-6°F warmer than average, except the northeast and southeast corners of the state. This is starting out to be a very dry water year with only a couple of storms moving through the state in the last 2 months. We have received less than 25% of our average fall precipitation, except along the western border. The conditions are all that much worse because last year was also an extremely dry year statewide. The monsoon provided some relief for a few areas, but it was a drier than normal monsoon.

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



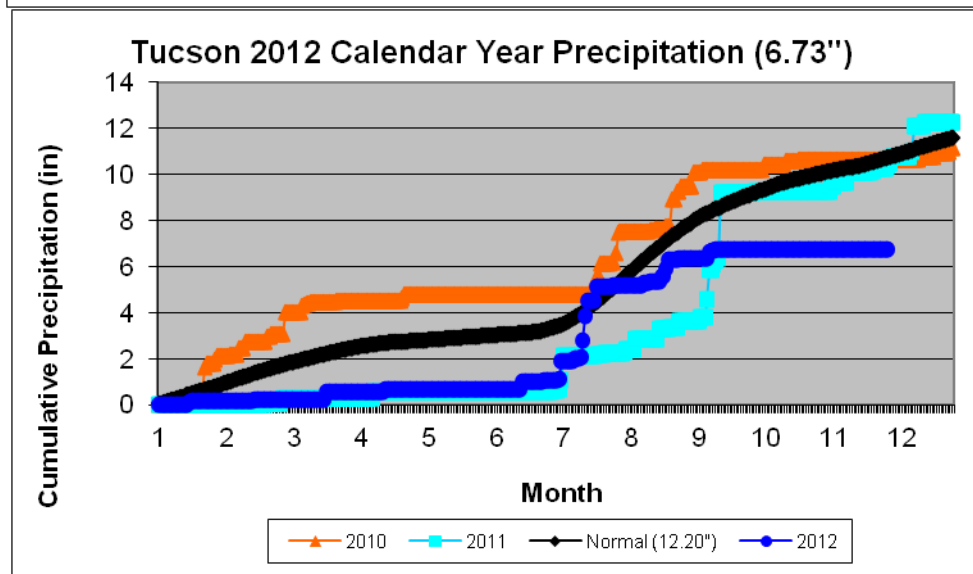
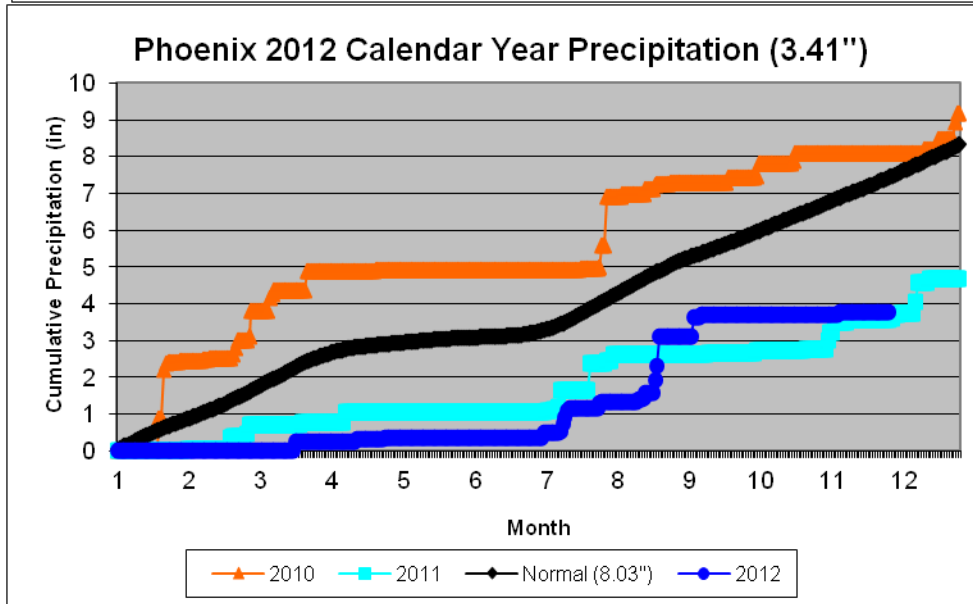
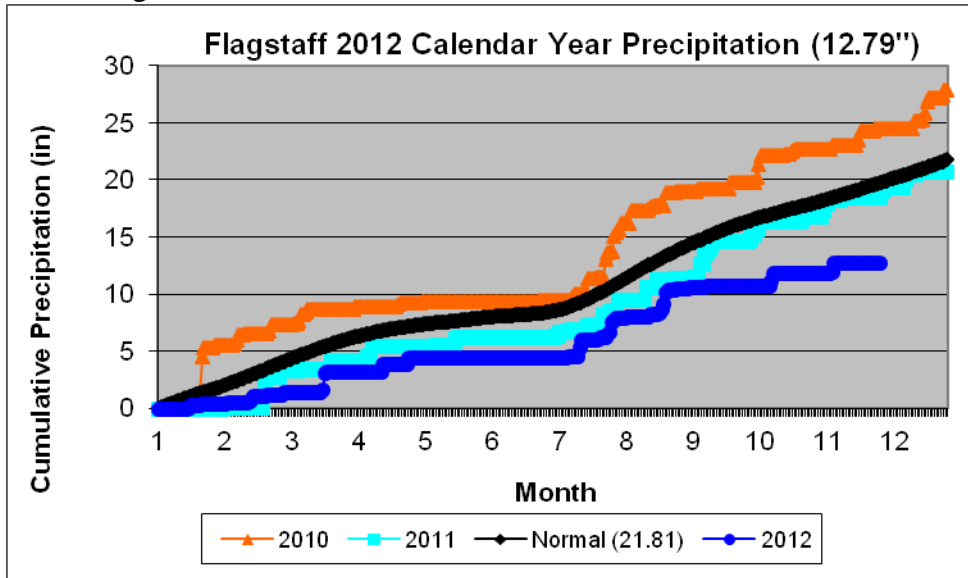


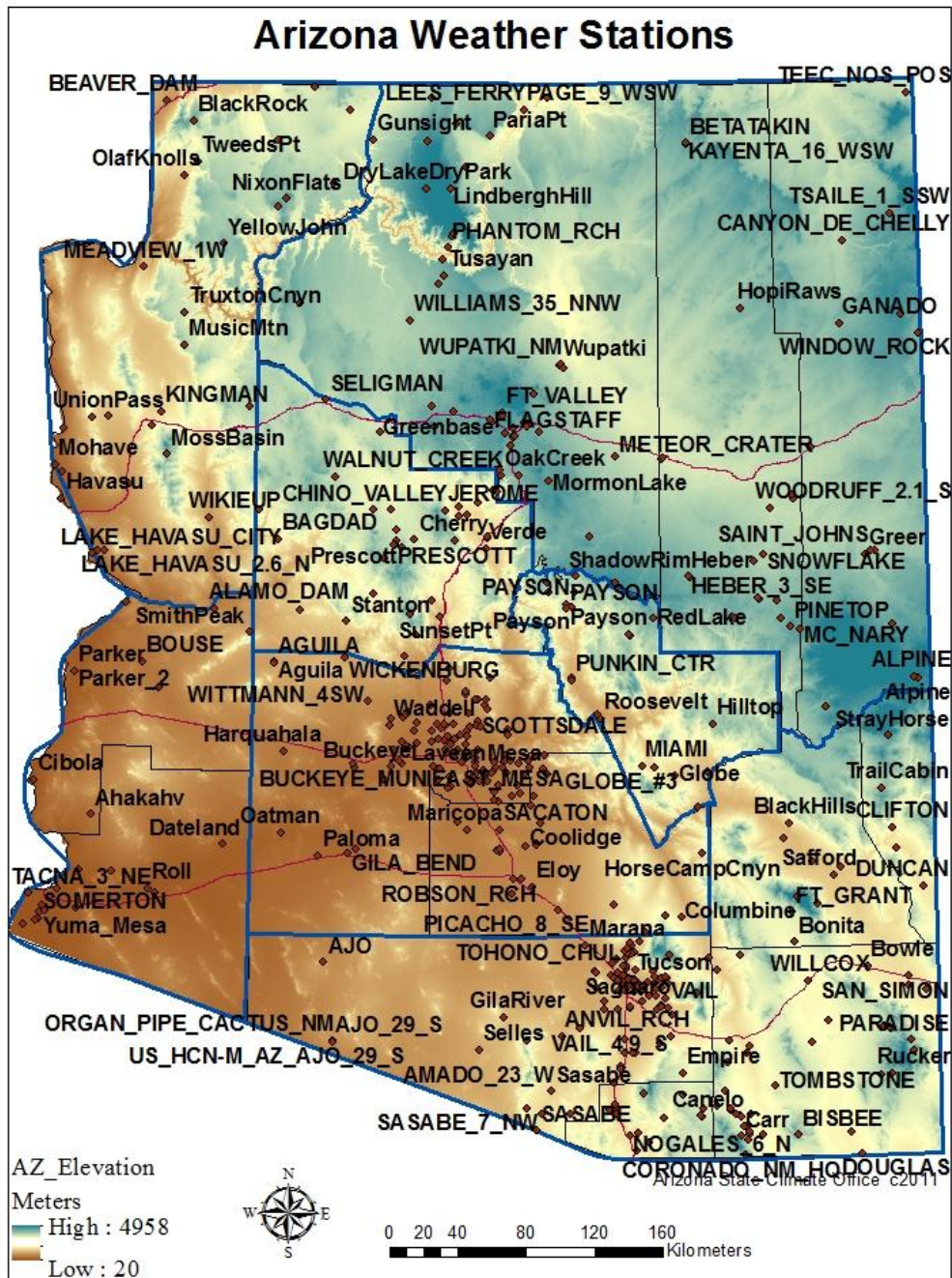
**November Mean Precipitation Graphs – Flagstaff, Phoenix, and Tucson 1895-2012:**



## 2012 Cumulative Precipitation Graphs – Flagstaff, Phoenix and Tucson:

Precipitation is well below average statewide.





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)