



# Arizona Climate Summary

January 2015

Summary of conditions for December 2014

## December 2014 Temperature and Precipitation Summary

**December 1<sup>st</sup> – 16<sup>th</sup>:** December began with slightly warmer than normal temperatures across the state, and dry conditions prevailed through the 2<sup>nd</sup> of the month ahead of a strong low pressure center. The low pressure moved into the state on the 3<sup>rd</sup>, and temperatures remained warm as the system was subtropical. In fact, it was associated with an atmospheric river that brought torrential rainfall to much of California, causing extensive mudslides and coastal erosion. On the 3<sup>rd</sup>, rainfall totals included 0.55” at Prescott, 0.45” at Bellemont, 0.38” at Cottonwood, 0.33” at Flagstaff, and 0.24” at Wickenburg. On the 4<sup>th</sup> rainfall increased with over an inch in numerous locations, including 1.46” at Flagstaff, 0.61” at Davis Monthan AFB, 0.70” at Deer Valley Airport in Phoenix, 0.62” at Sky Harbor Airport, 1.31” at Prescott, 0.72” at Scottsdale, 0.69” at Tucson, 0.87” at Window Rock, 0.65” at Winslow, 1.34” at Bellemont, 0.93” at Canyon de Chelly, 0.98” at Cottonwood, 0.72” at Carefree, 0.71” at Eloy, 1.05” at Lost Dutchman State Park in Apache Junction, 0.98” at Payson, 0.83” at Petrified Forest National Park, and 1.09” at Williams, and 0.98” at Show Low. Precipitation tapered off the morning of the 5<sup>th</sup> with the high total of 0.40” at Prescott. During the storm high temperatures remained in the upper 60s and lower 70 at the warmest locations in the southwest deserts. The coldest nighttime temperatures were in the mid to upper 20s at Canyon de Chelly and the north rim of the Grand Canyon, while most other high elevations had lows in the low 30s. After the system cleared out on the 6<sup>th</sup>, a series of weak shortwaves moved through bringing some scattered cloud cover, but little precipitation through the 9<sup>th</sup>. During this time temperatures increased into the upper 70s in the southwest deserts as high pressure slowly returned to the southwest. Daytime temperatures on the Colorado Plateau hovered in the mid 40s, while Payson and Sedona saw mid 60s and Prescott reached the low 60s. By the 12<sup>th</sup>, another strong low pressure system moved down the California coast toward Arizona. While still relatively warm, this system had enough cold air to bring some snow to the high elevations with 1.4” at Navajo National Monument and 1.1” at Bellemont on the 13<sup>th</sup>. Storm totals for the 13<sup>th</sup> and 14<sup>th</sup> were 0.51” at Payson, 0.54” at Show Low, 0.40” at Phantom Ranch at the bottom of the Grand Canyon, 0.50” in Apache Junction, 0.60” in Carefree, 0.44” in Tucson, 0.87” in Sedona, 0.25” at Deer Valley, 0.08” at Sky Harbor, and 0.41” at Kingman. Much colder air moved in behind the system dropping temperatures into the 60s in the southwest deserts.

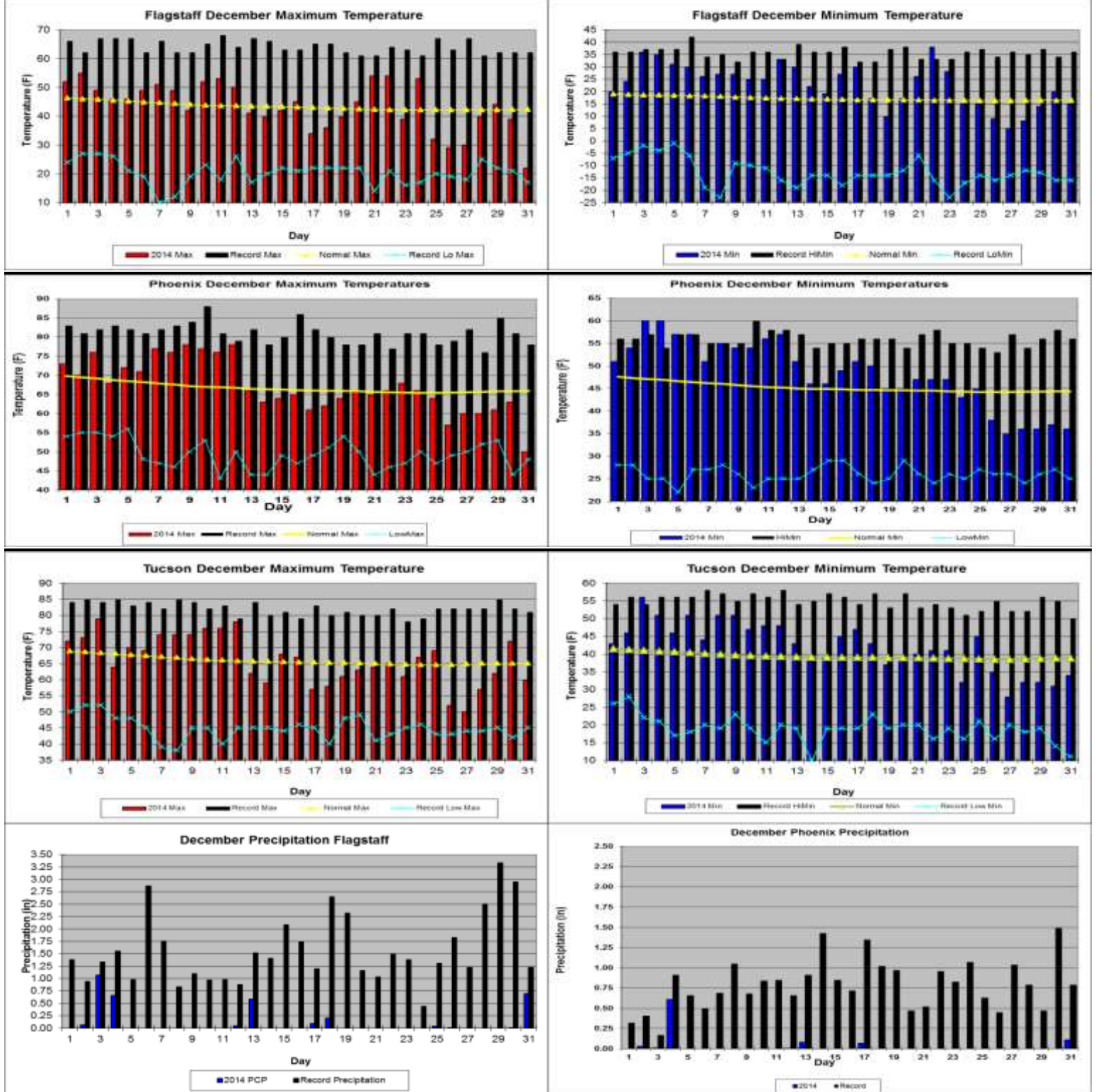
**December 16<sup>th</sup> – 31<sup>st</sup>:** The cold air was accompanied by another shortwave that brought significant rain and snow to California and Utah, with smaller amounts across Arizona on the 17<sup>th</sup> through the 19<sup>th</sup>. Storm totals peaked at 0.56” at Davis Monthan AFB, 0.45” at Canyon de Chelly, and 0.37” at Bisbee. Bellemont had 1.9” of snow. By the 21<sup>st</sup>, high pressure returned and daytime temperatures came back up to the mid 70s in the deserts and low 40s at the higher elevations and across the plateau. Dry conditions remained until Christmas Day when another low pressure system moved south through Utah, bringing cold air statewide and relatively light precipitation to northern and eastern Arizona. Clear conditions returned on the 27<sup>th</sup> and the final storm of the year swept across the state on the 30<sup>th</sup> and 31<sup>st</sup> bringing frigid air and widespread precipitation including much needed snow all the way down to the 3000 foot level. The greatest precipitation was 0.65” of liquid at Payson, which came from 7.1” of snow. Bellemont had 8.0” of snow. Daytime temperatures dropped as much as 20 degrees from the 30<sup>th</sup> to the 31<sup>st</sup>.

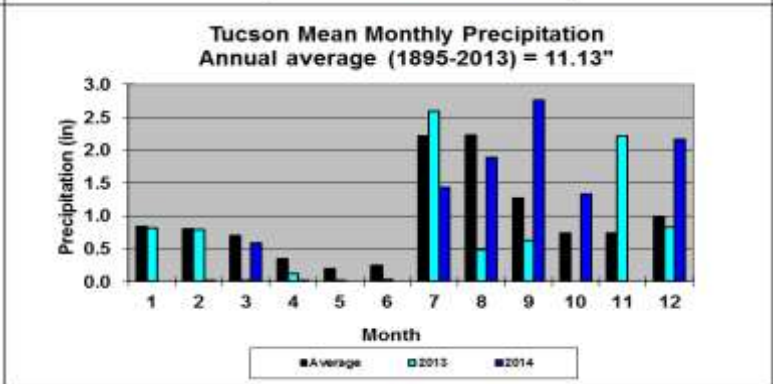
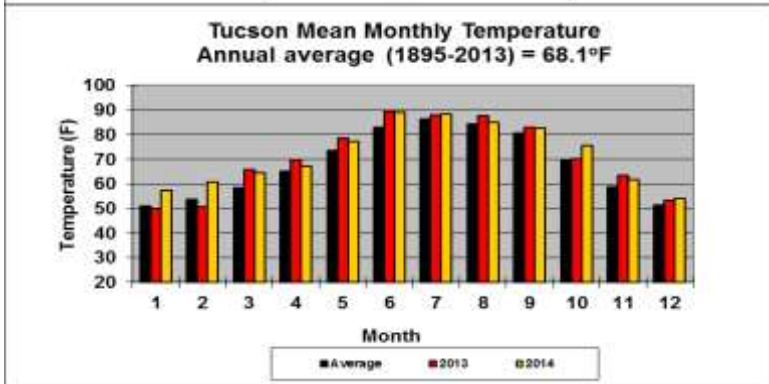
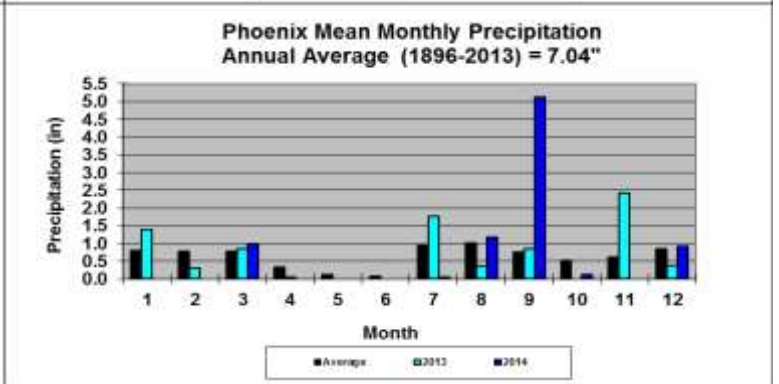
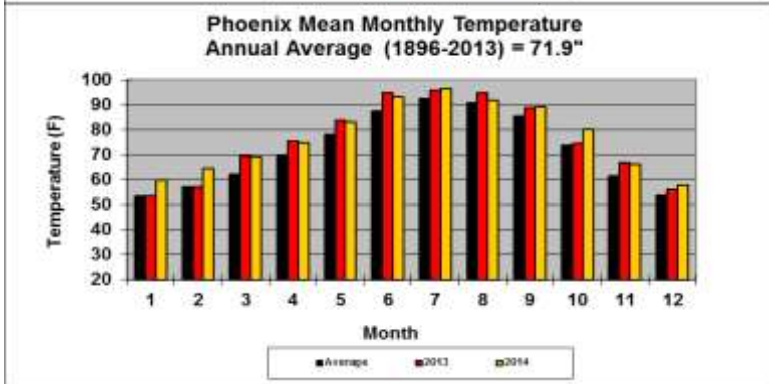
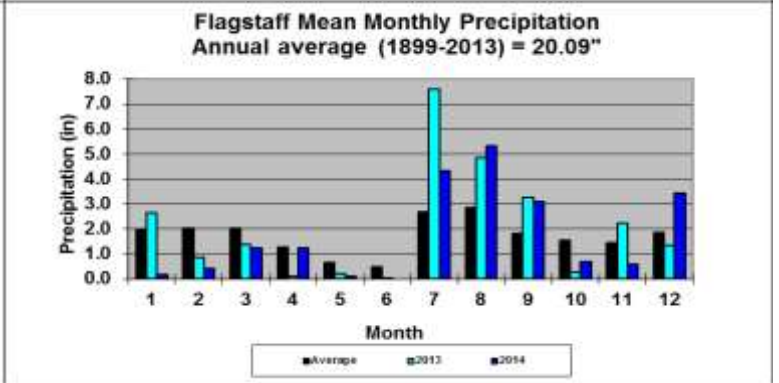
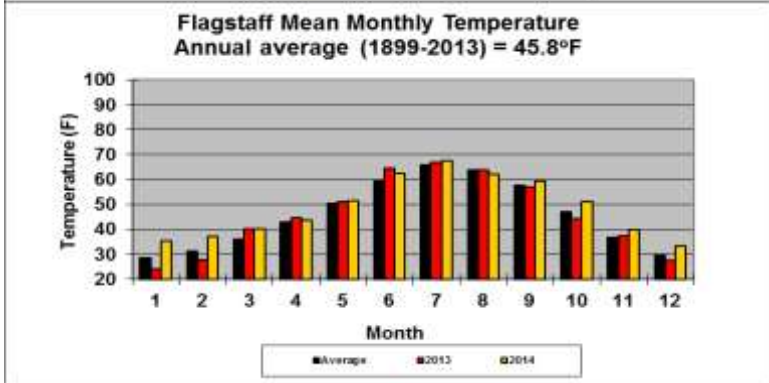
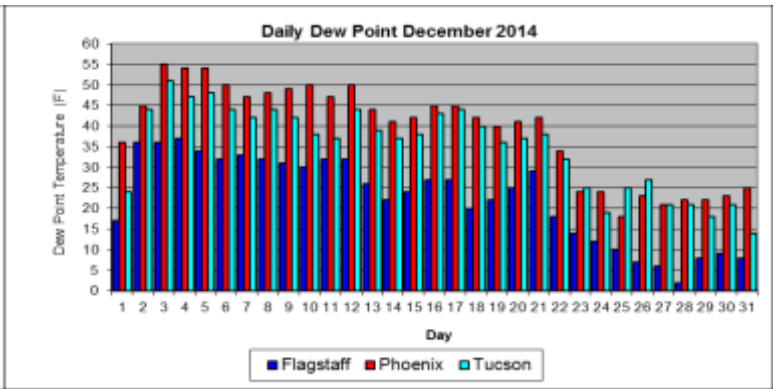
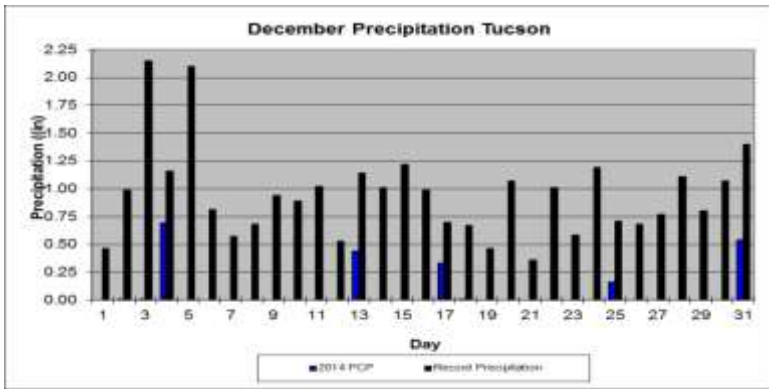
**In This Issue:** Overview of December, graphs of the December daily maximum and minimum temperatures, precipitation, mean daily dew points for Flagstaff, Phoenix, and Tucson; December climate statistics, maps of mean monthly maximum and minimum temperatures, precipitation, dew points, wind speeds for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

**December 2014 Daily Temperature, Precipitation, & Dew Point for Flagstaff, Phoenix, and Tucson**







## FLAGSTAFF CLIMATE STATISTICS

December 2014

This December was the 22nd warmest and 21<sup>st</sup> wettest since 1895.

Avg Max Temp (F)	43.6	Normal	42.5
Avg Min Temp (F)	22.7	Normal	16.8
Avg Mean Temp (F)	33.2	Normal	29.6
Departure from Normal (F)	+3.6		

Highest Monthly Avg Temp (F) 39.8 in 1980  
 Lowest Monthly Avg Temp (F) 21.9 in 1972,1932

Highest Temp this month (F): 55 on 2<sup>nd</sup>  
 Lowest Temp this month (F): 5 on 27<sup>th</sup>

Record High (F): 68 on 12/11/1950  
 Record Low (F): -23 on 12/23/1990, 12/08/1978

Temperature or precipitation records this month:  
 12<sup>th</sup> HiMin 33 tied, first set in 2003  
 14<sup>th</sup> HiMin 38 set, previous record 33 in 1982

Flagstaff Number of Days of:

Minimum Temp 30°F or higher	8
Minimum Temp 20°F or lower	13
Maximum Temp 40°F or higher	9

Maximum Temp 32°F or lower 4

Heating Degree Days	978	Normal	1096
Cooling Degree Days	0	Normal	0
Degree base 65°F			

Total December Precipitation	3.44"
Normal December Precipitation	1.87"
Departure from normal	-1.57"
Greatest 24-Hr Precipitation	1.47" on 12/03-04
Total Precipitation Year-to-Date	20.67"
Departure from Normal	-1.19"

Number of Days:

Clear	16
Partly Cloudy	11
Cloudy	4

Greatest December Precipitation 7.30" in 1967  
 Least December Precipitation 0.00 in 1917, 1958, and 1999

Average Wind Speed	6.2 mph
Highest Peak Gust	47 mph from 60° on 23 <sup>rd</sup>

## PHOENIX CLIMATE STATISTICS

December 2014

This December was the 6<sup>th</sup> warmest and had no significant ranking for precipitation.

Avg Max Temp(F)	67.2	Normal	66.0
Avg Min Temp(F)	48.3	Normal	44.8
Avg Mean Temp (F)	57.7	Normal	55.4
Departure from Normal (F)	+2.3		

Highest Monthly Avg Temp (F) 61.3 in 1980  
 Lowest Monthly Avg Temp (F) 46.6 in 1911

Highest Temp this month (F): 78 on 9<sup>th</sup>, 12<sup>th</sup>  
 Lowest Temp this month (F): 35 on 27<sup>th</sup>

Record High (F): 87 on 12/10/1950  
 Record Low (F): 22 on 12/26/1911, 12/31/1900

Temperature or precipitation records this month:

3<sup>rd</sup> HiMin 60 set, previous 57 record in 1989  
 4<sup>th</sup> HiMin 60 set, previous 54 record in 1942  
 5<sup>th</sup> HiMin 57 tied, first set in 1986  
 6<sup>th</sup> HiMin 57 tied, first set in 2003  
 8<sup>th</sup> HiMin 55 tied, first set in 1982

Phoenix Number of Days of:

Minimum Temp 40°F or lower	6
Minimum Temp 50°F or higher	15
Maximum Temp 60°F or lower	4
Maximum Temp 70°F or higher	11

Heating Degree Days	228	Normal	298
Cooling Degree Days	10	Normal	1
Degree base 65°F			

Total December Precipitation 0.91"  
 Normal December Precipitation 0.88"  
 Departure from normal +0.03"  
 Greatest 24-Hr Precipitation 0.62" 12/03-04  
 Total Precipitation Year-to-Date 8.37"  
 Departure from Normal +0.34"

Greatest December Precipitation 3.98" in 1967  
 Least December Precipitation 0.00" in 1981,  
 1999, 2000 and 14 other years  
 Average Wind Speed 4.5 mph  
 Highest Peak Gust 27 mph from 260° on 31<sup>st</sup>

Number of Days:

Clear 7  
 Partly Cloudy 17  
 Cloudy 7

TUCSON CLIMATE STATISTICS  
 December 2014

This December was the 20<sup>th</sup> warmest and 14<sup>th</sup> wettest since 1895.

Avg Max Temp(F) 66.2 Normal 64.8  
 Avg Min Temp(F) 42.0 Normal 39.1  
 Avg Mean Temp(F) 54.1 Normal 51.9  
 Departure from Normal (F) +2.2

Highest Monthly Avg Temp (F) 58.1 in 1980  
 Lowest Monthly Avg Temp (F) 41.3 in 1915

Highest Temp this month (F): 79 on 3<sup>rd</sup>  
 Lowest Temp this month (F): 28 on 27<sup>th</sup>

Record High (F): 85 on 12/08/1939, 12/29/1921.  
 and 12/02/1911  
 Record Low (F): 10 on 12/14/1901

Temperature or precipitation records this month:  
 3<sup>rd</sup> HiMin 56 set, previous record 54 in 1954

Tucson Number of Days of:

Minimum Temp 40°F or lower 12  
 Minimum Temp 50°F or higher 5  
 Maximum Temp 60°F or lower 7  
 Maximum Temp 70°F or higher 11

Heating Degree Days 332 Normal 405  
 Cooling Degree Days 0 Normal 0  
 Degree base 65°F

Total December Precipitation 2.17"  
 Normal December Precipitation 0.93"  
 Departure from normal +1.24"  
 Greatest 24-Hr Precipitation 0.69"  
 Total Precipitation Year-to-Date 10.19"  
 Departure from Normal -1.40"

Greatest December Precipitation 5.85" in 1914  
 Least December Precipitation 0.00" in 1981,  
 1973, 1958, and 8 other years

Number of Days:

Clear 23  
 Partly Cloudy 6  
 Cloudy 1

Average Wind Speed 5.5 mph  
 Highest Peak Gust 36 mph from 210° on 25<sup>th</sup>

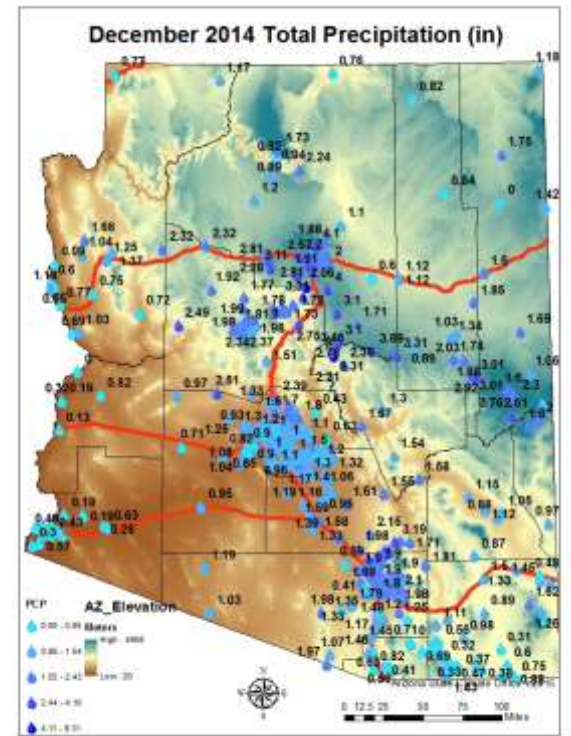
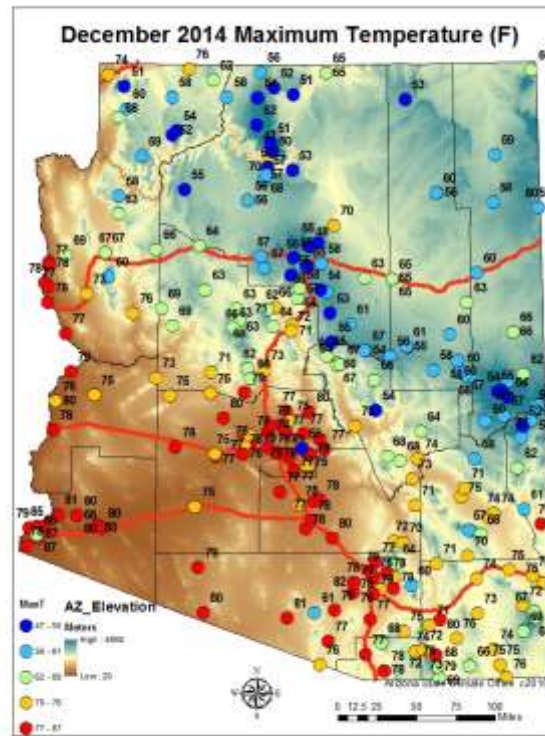
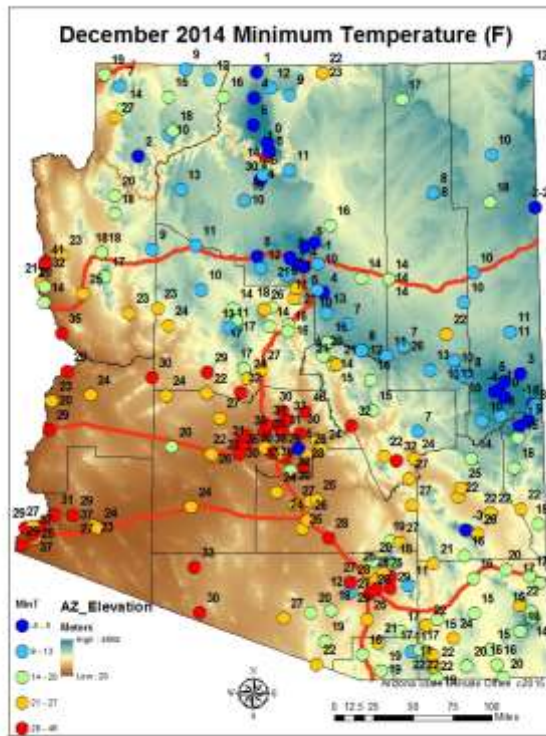
Data are from the National Weather Service and the National Climatic Data Center and are **preliminary**.

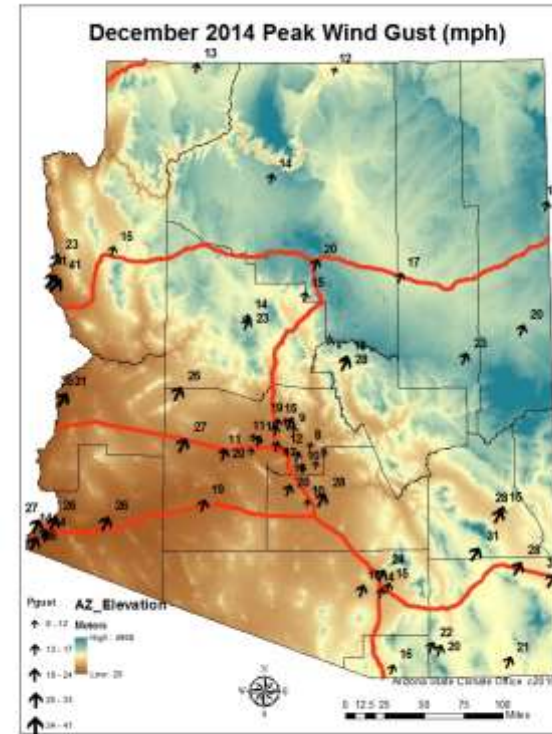
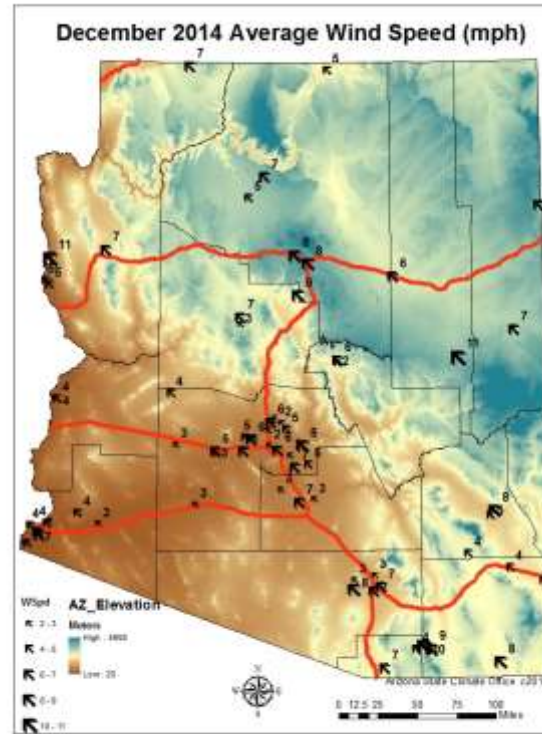
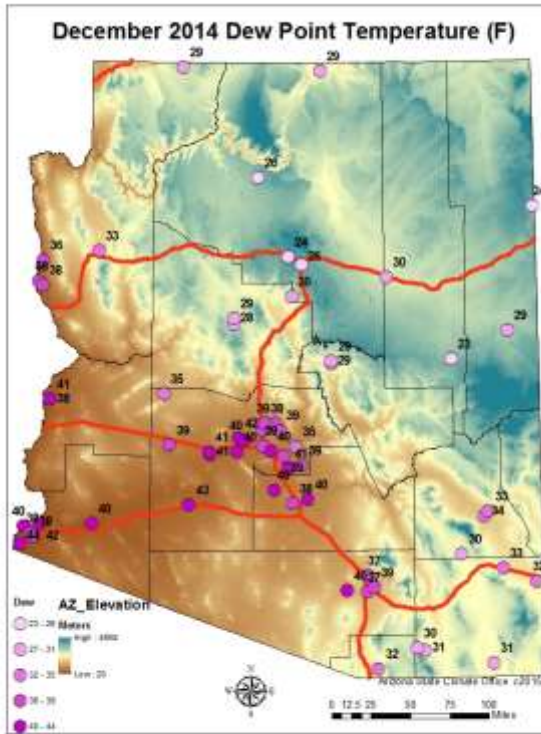
**Wind Speeds:**

Day	Phoenix		Flagstaff		Tucson	
	Avg	Max	Avg	Max	Avg	Max
1	4.3	10	1.6	14	5.4	22
2	4.7	13	4.6	19	4.6	20
3	5	14	5.8	18	4.7	14
4	4.3	19	5.6	23	4.7	18
5	3.9	14	4.3	15	5.6	18
6	1.6	9	0.7	13	4.9	20
7	3	12	4	15	3.8	12
8	4	18	4.9	15	7	24
9	2.5	11	2.9	12	4.9	17
10	2.7	15	3.2	16	4.8	14
11	5.7	13	2.7	25	6.7	24
12	8	22	12.9	38	7.7	27
13	7.3	26	10.8	45	6	24
14	4.1	12	5.6	22	4.2	13
15	3.5	13	4.5	13	4.7	15
16	3.3	13	4.1	26	3.1	20
17	5.4	18	5.2	19	5.5	20
18	3.9	18	2.8	13	6	20
19	3.3	17	1.4	12	4.3	13
20	3.3	12	3.1	19	4.2	17
21	4.1	11	7.1	26	3.8	13
22	4.6	13	6.3	26	4.7	15
23	7.4	24	21.2	47	7.1	25
24	3.6	17	7.5	26	5.7	24
25	8	25	13.6	34	11.5	36
26	3.5	20	4.8	20	4.7	18
27	4	17	4.7	28	3.5	8
28	3.5	10	5.9	20	5.1	13
29	4.1	12	11.2	39	5.2	14
30	3.3	21	11.4	37	7.4	25
31	8.7	27	7.5	26	8.4	34

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

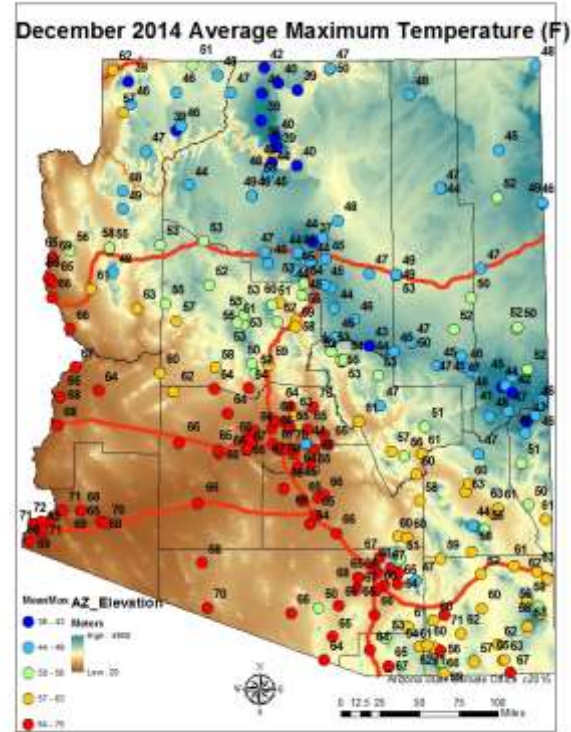
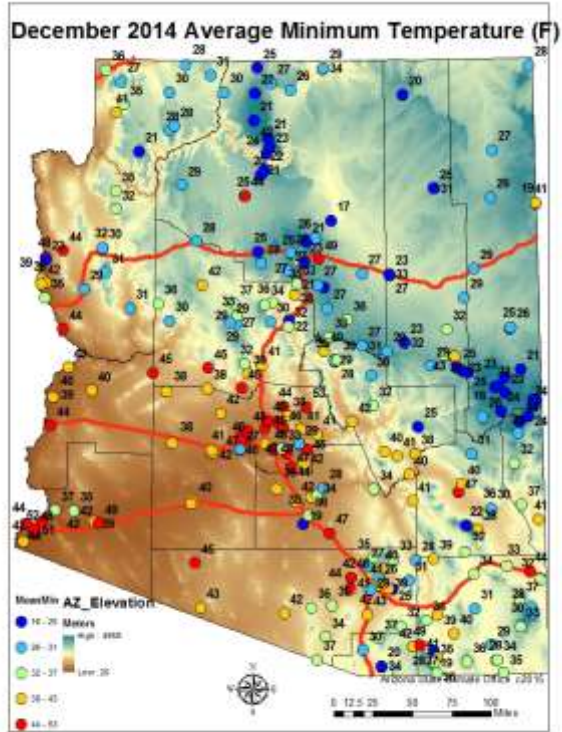
Day	Phx	Tuc	Flg
1	36	24	17
2	45	44	36
3	55	51	36
4	54	47	37
5	54	48	34
6	50	44	32
7	47	42	33
8	48	44	32
9	49	42	31
10	50	38	30
11	47	37	32
12	50	44	32
13	44	39	26
14	41	37	22
15	42	38	24
16	45	43	27
17	45	44	27
18	42	40	20
19	40	36	22
20	41	37	25
21	42	38	29
22	34	32	18
23	24	25	14
24	24	19	12
25	18	25	10
26	23	27	7
27	21	21	6
28	22	21	2
29	22	18	8
30	23	21	9
31	25	14	8





The lowest minimum temperature was  $-5^{\circ}\text{F}$  at Snowslide Canyon and the highest minimum was  $46^{\circ}\text{F}$  at Bartlett Dam. The lowest maximum temperature of  $47^{\circ}\text{F}$  was recorded at Bright Angel, while the highest maximum temperature of  $87^{\circ}\text{F}$  was reported at Yuma. The lowest rainfall amount was  $0.09''$  at Bullhead City and the highest was  $9.31''$  at Natural Bridge south of Payson. The lowest dew point was  $23^{\circ}\text{F}$  at Show Low and the highest was  $44^{\circ}\text{F}$  at Yuma. The highest average wind speed was 11 mph at Show Low and Laughlin. The highest peak wind gust was 41 mph at Mohave Airport.

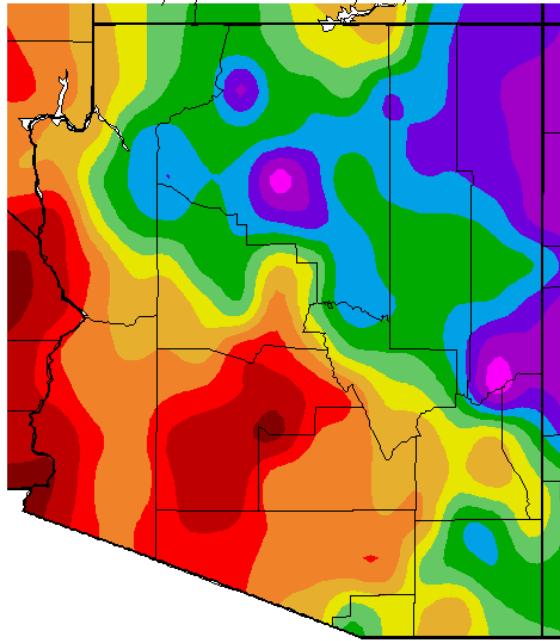




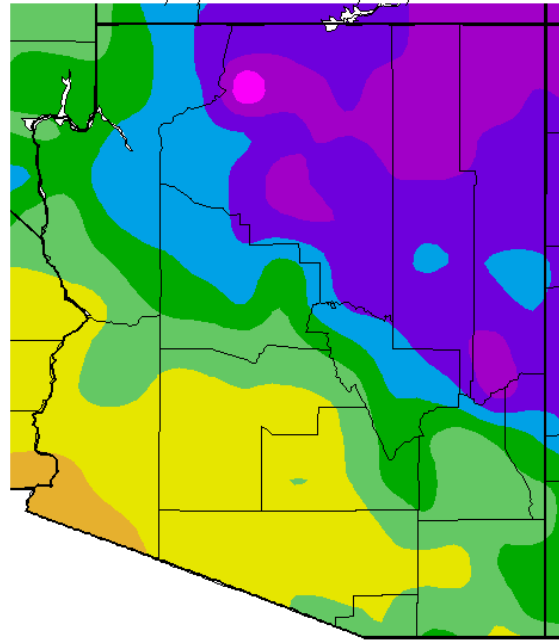
December 2014

The highest average minimum temperature was 53°F at Bartlett Dam and the lowest average minimum temperature was 16°F at Sunrise. The highest average maximum temperature was 75°F at Bartlett Dam and lowest average maximum temperature was 36°F at Bright Angel.

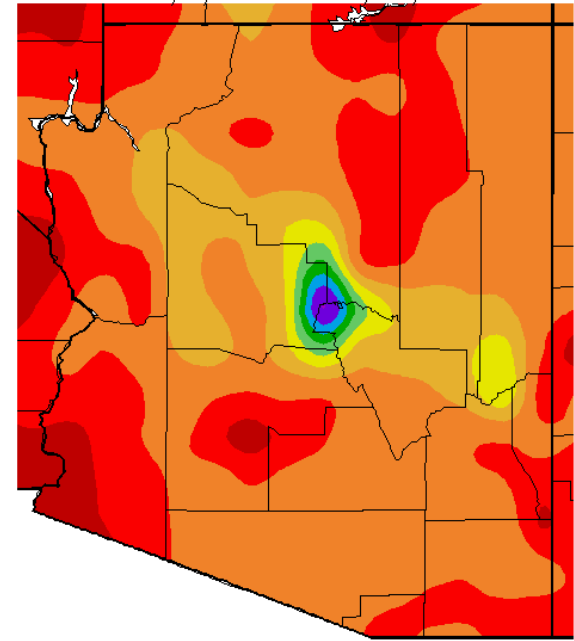
Av. Min. Temperature (deg. F)  
12/1/2014 – 12/31/2014



Av. Max. Temperature (deg. F)  
12/1/2014 – 12/31/2014



Total Precipitation (in.)  
12/1/2014 – 12/31/2014

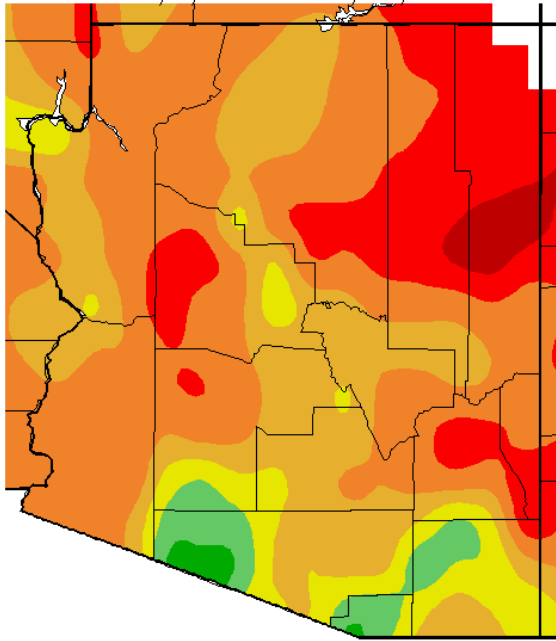


18 21 24 27 30 33 36 39 42 45 48  
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NOAA Regional Climate Centers

40 45 50 55 60 65 70 75 80 85 90  
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NOAA Regional Climate Centers

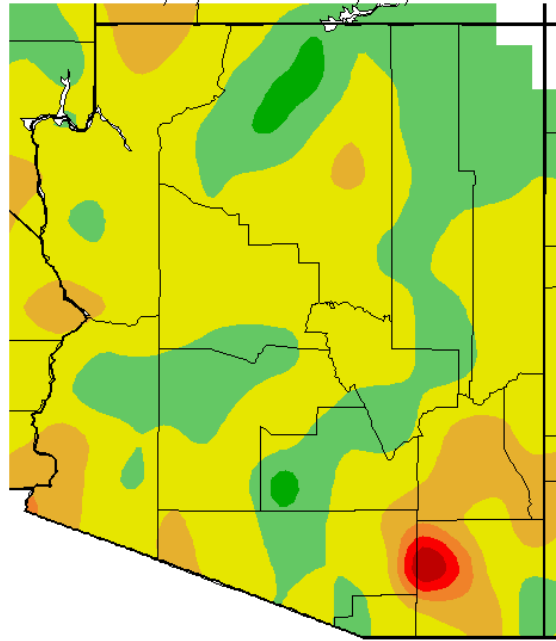
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NOAA Regional Climate Centers

Av. Min. Temperature dep from Ave (deg. F)  
12/1/2014 – 12/31/2014



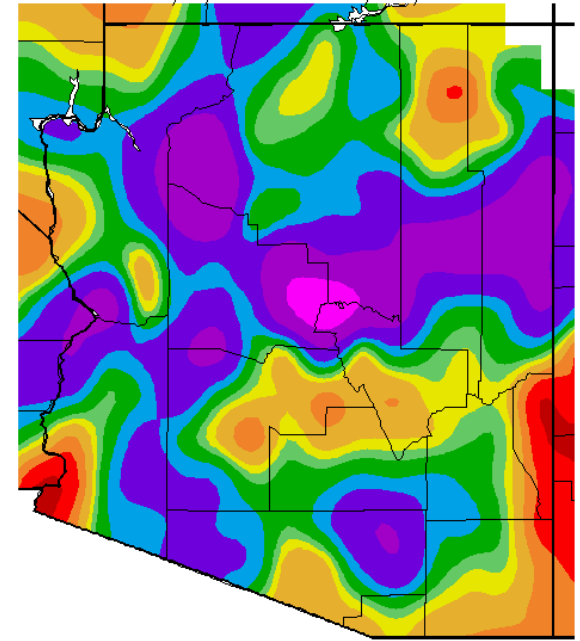
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Av. Max. Temperature dep from Ave (deg F)  
12/1/2014 – 12/31/2014



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NOAA Regional Climate Centers

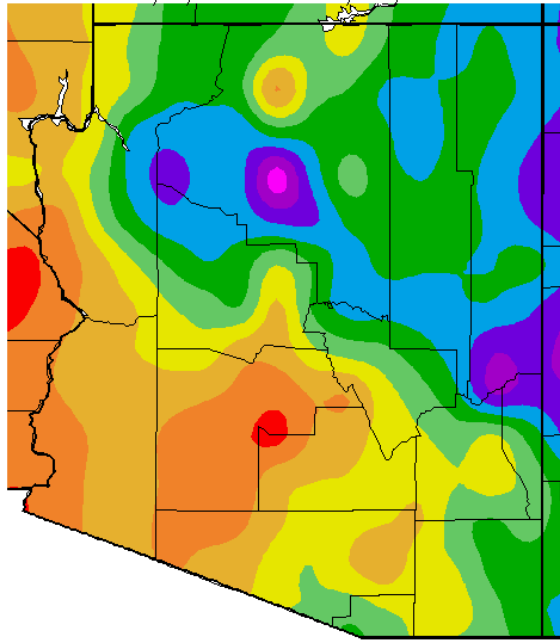
Percent of Average Precipitation (%)  
12/1/2014 – 12/31/2014



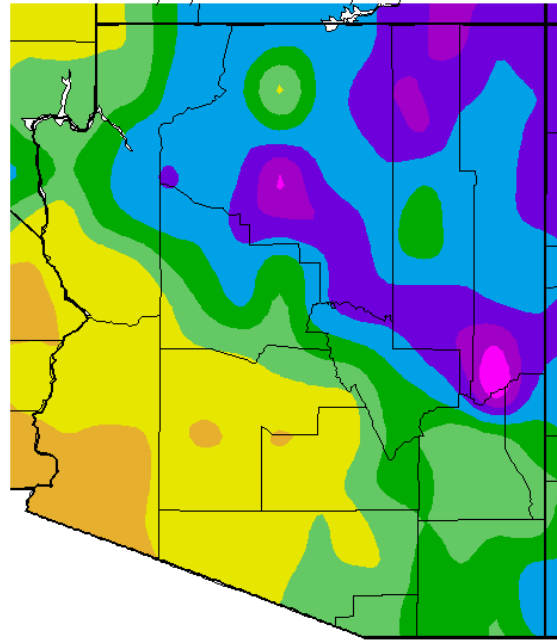
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NOAA Regional Climate Centers

December minimum temperatures ranged from 8 degrees warmer to 2 degrees colder than normal across the state. Exceptions were central Apache County which was 10 degrees warmer than normal and western Pima County which was 4 degrees colder than normal. Daytime temperatures were within 2 degrees of normal statewide, except northwest Cochise County which was as much as 8 degrees warmer than normal. December precipitation ranged from 50% of normal along the southeast border and in southern Gila, eastern Maricopa and northern Navajo counties, to over 300% or normal across the southern Colorado Plateau and much of western Arizona.

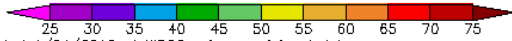
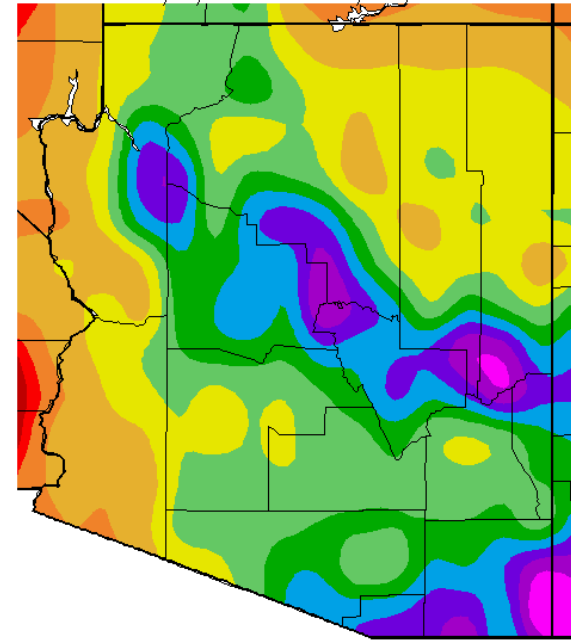
Av. Min. Temperature (deg. F)  
1/1/2014 - 12/31/2014



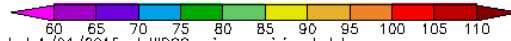
Av. Max. Temperature (deg. F)  
1/1/2014 - 12/31/2014



Total Precipitation (in.)  
1/1/2014 - 12/31/2014



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NOAA Regional Climate Centers



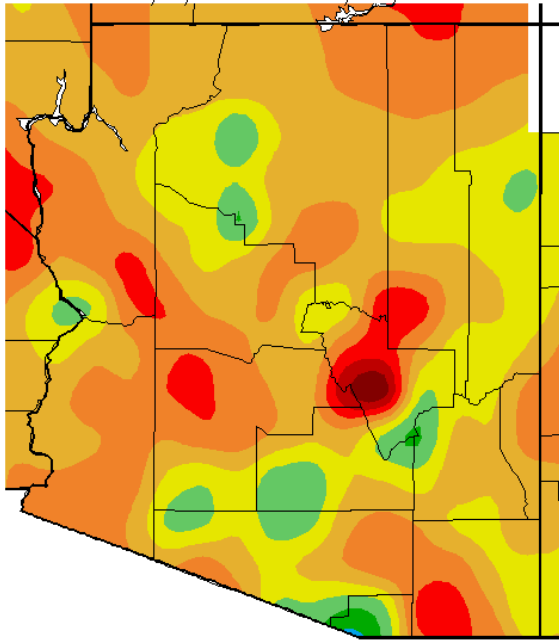
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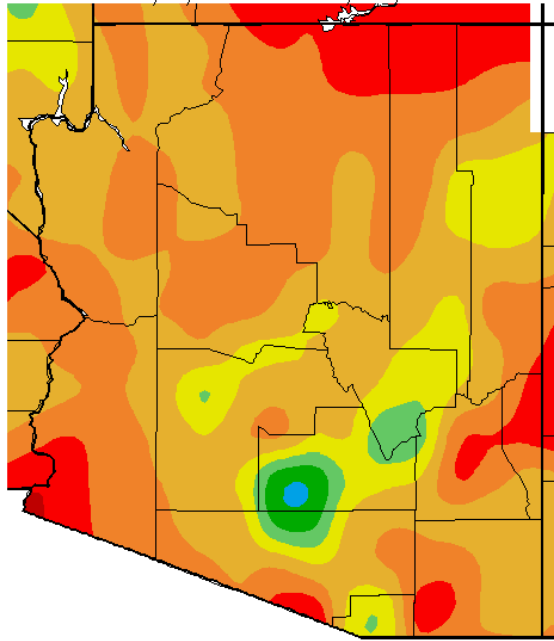


Av. Min. Temperature dep from Ave (deg. F)  
1/1/2014 - 12/31/2014



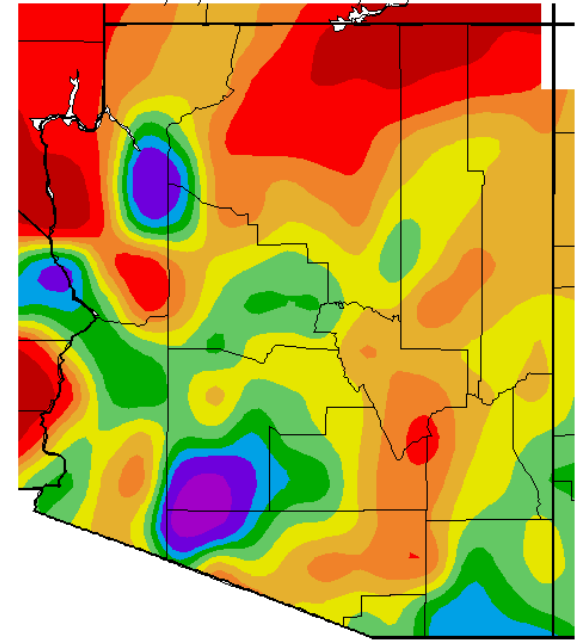
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Av. Max. Temperature dep from Ave (deg F)  
1/1/2014 - 12/31/2014



Generated 1/01/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers

Percent of Average Precipitation (%)  
1/1/2014 - 12/31/2014

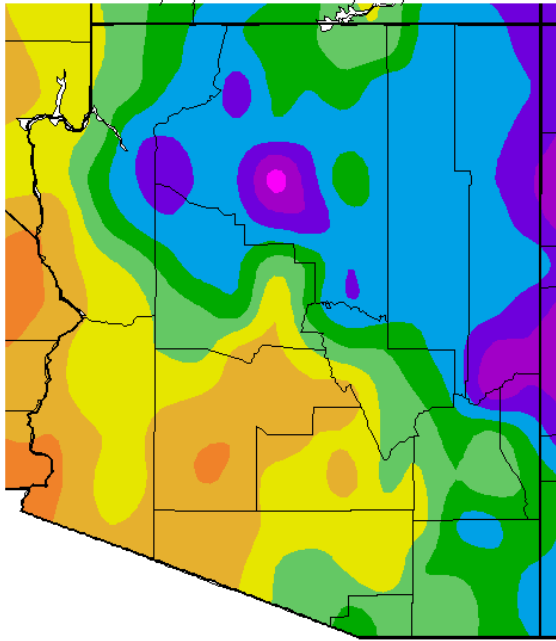


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NOAA Regional Climate Centers

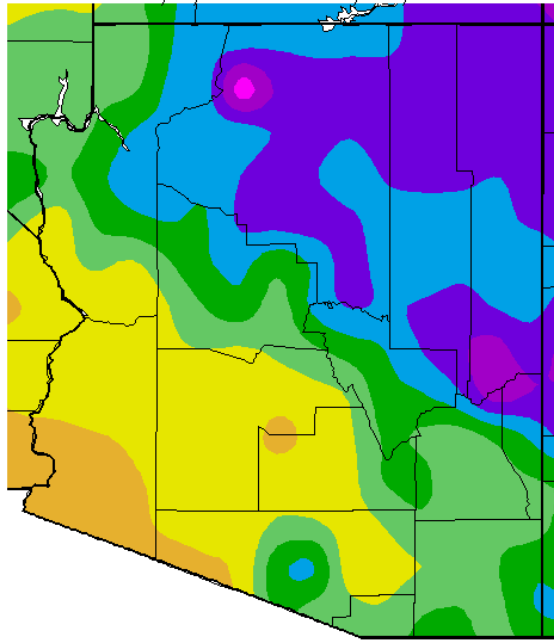
### Calendar Year 2014

Calendar year minimum temperatures have been 0-3°F warmer than normal statewide with a much warmer pocket in central Gila County. Daytime highs have also been 1 to 3°F warmer than normal statewide, though western Pinal County was 1-3 degrees cooler than normal. Precipitation this year finally reached 100% of normal or more in much of southern Arizona, with over 130% of normal in southern Maricopa and central Mohave counties.

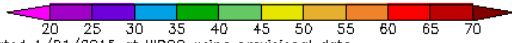
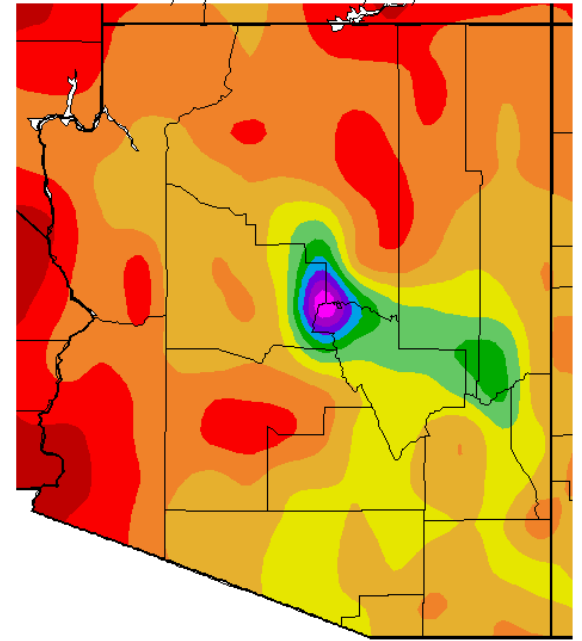
Av. Min. Temperature (deg. F)  
10/1/2014 – 12/31/2014



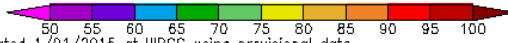
Av. Max. Temperature (deg. F)  
10/1/2014 – 12/31/2014



Total Precipitation (in.)  
10/1/2014 – 12/31/2014



Generated 1/01/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers

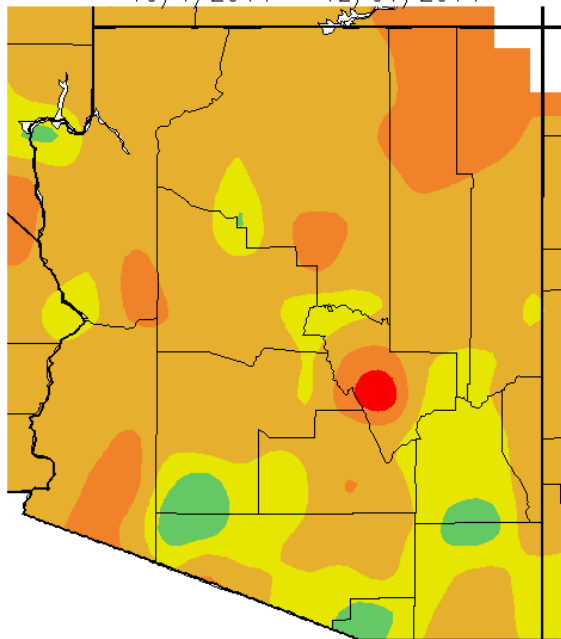


Generated 1/01/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers



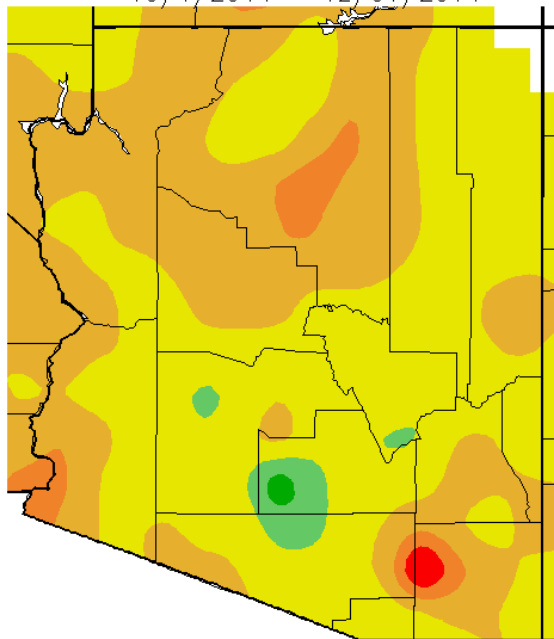
Generated 1/01/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Min. Temperature dep from Ave (deg. F)  
10/1/2014 – 12/31/2014



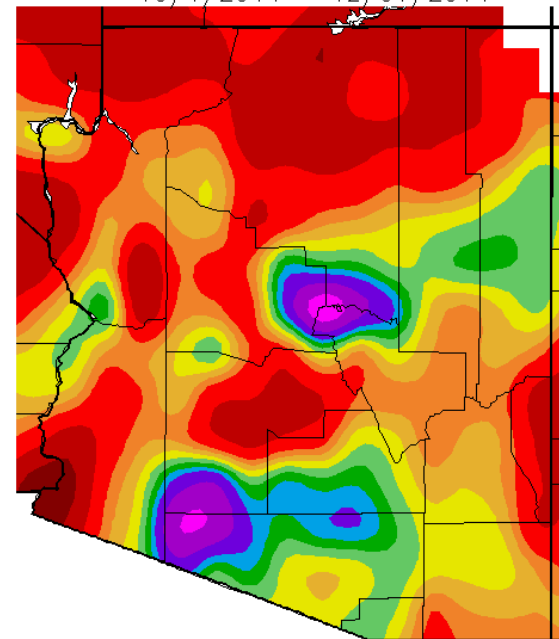
-10 -8 -6 -4 -2 0 2 4 6 8 10  
Generated 1/01/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)  
10/1/2014 – 12/31/2014



-10 -8 -6 -4 -2 0 2 4 6 8 10  
Generated 1/01/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers

Percent of Average Precipitation (%)  
10/1/2014 – 12/31/2014

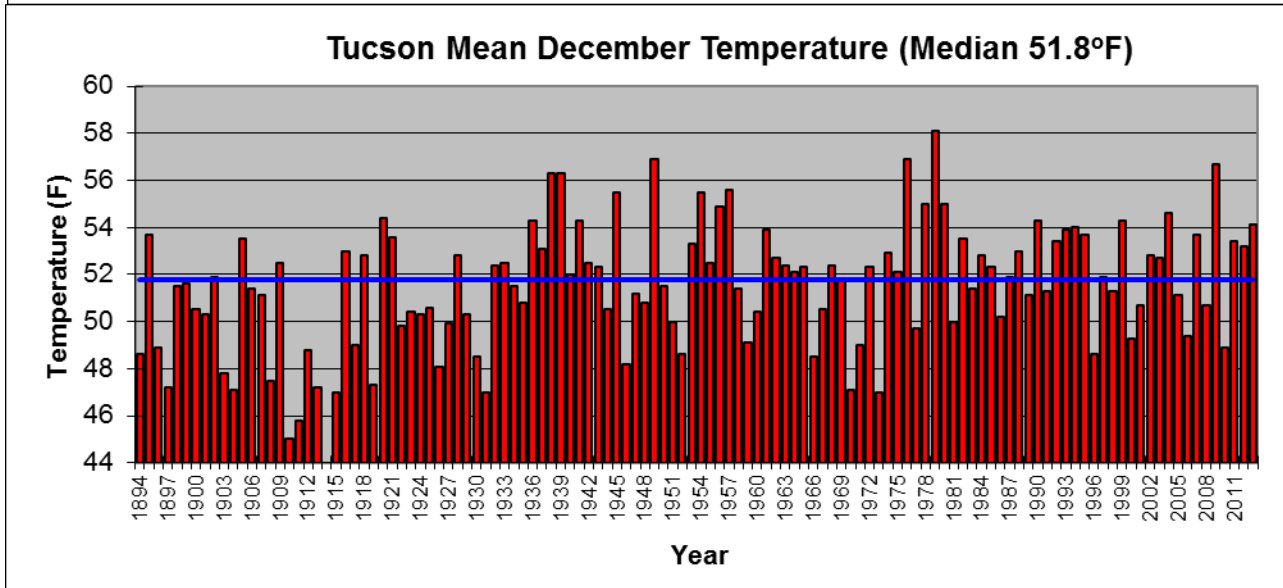
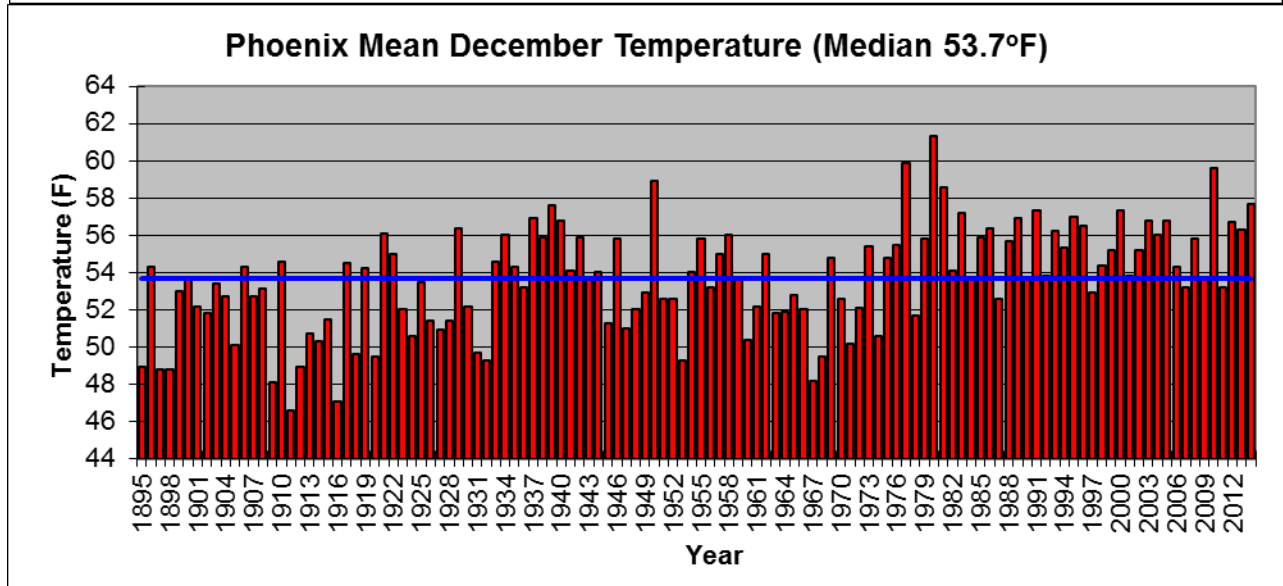
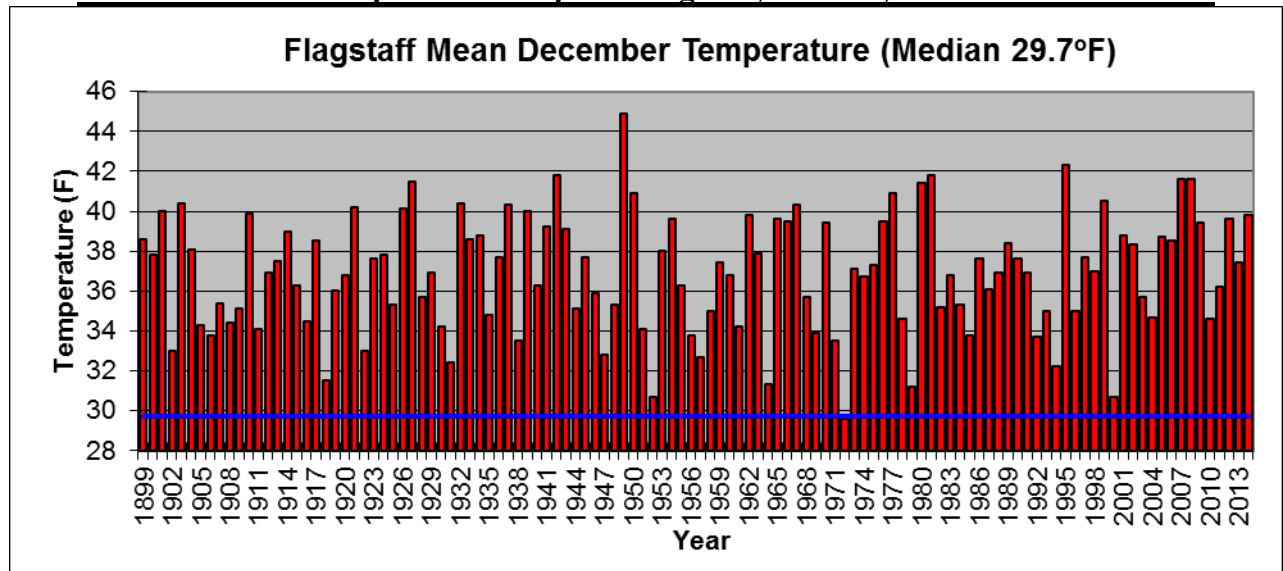


25 50 70 80 90 100 110 120 130 150 175  
Generated 1/01/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers

### 2015 Water Year

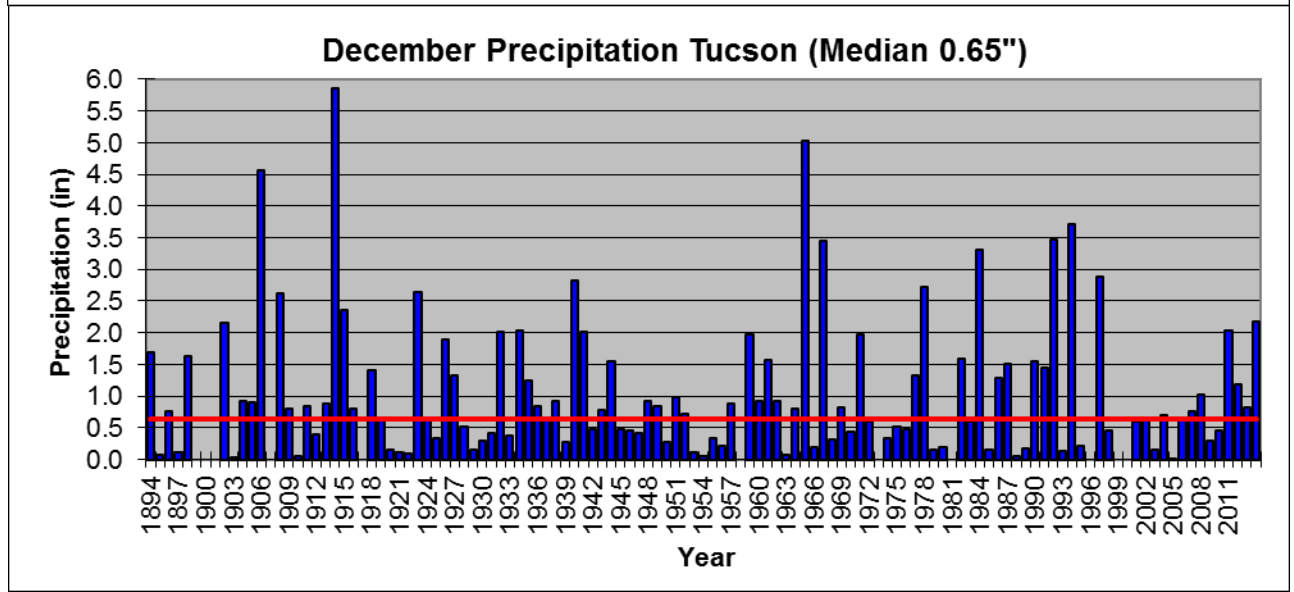
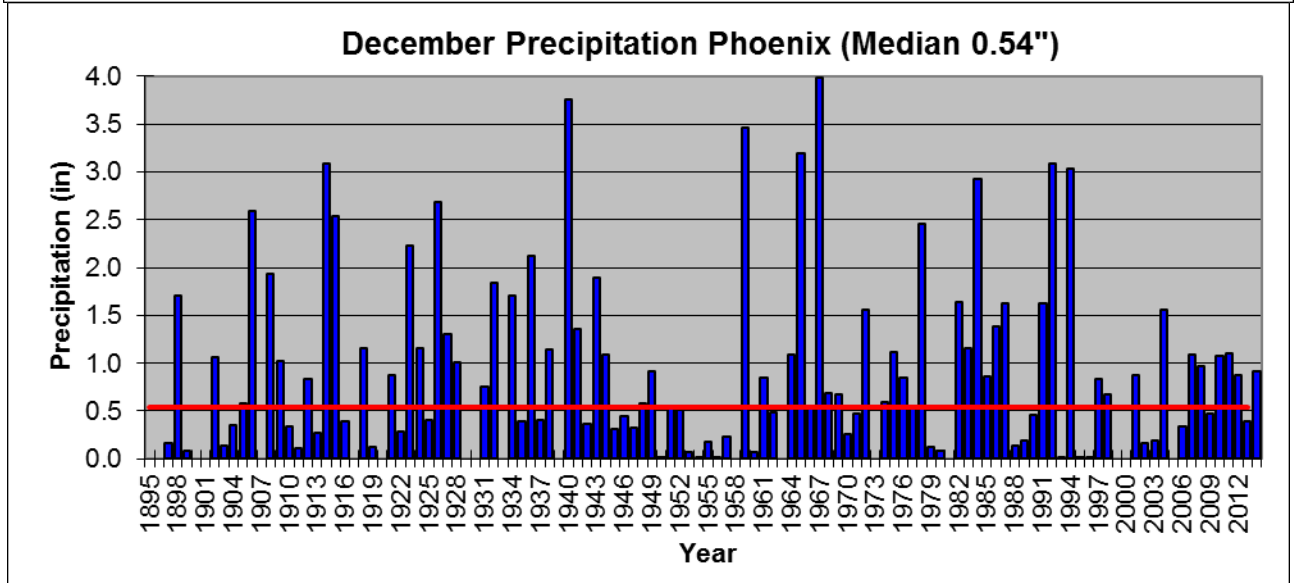
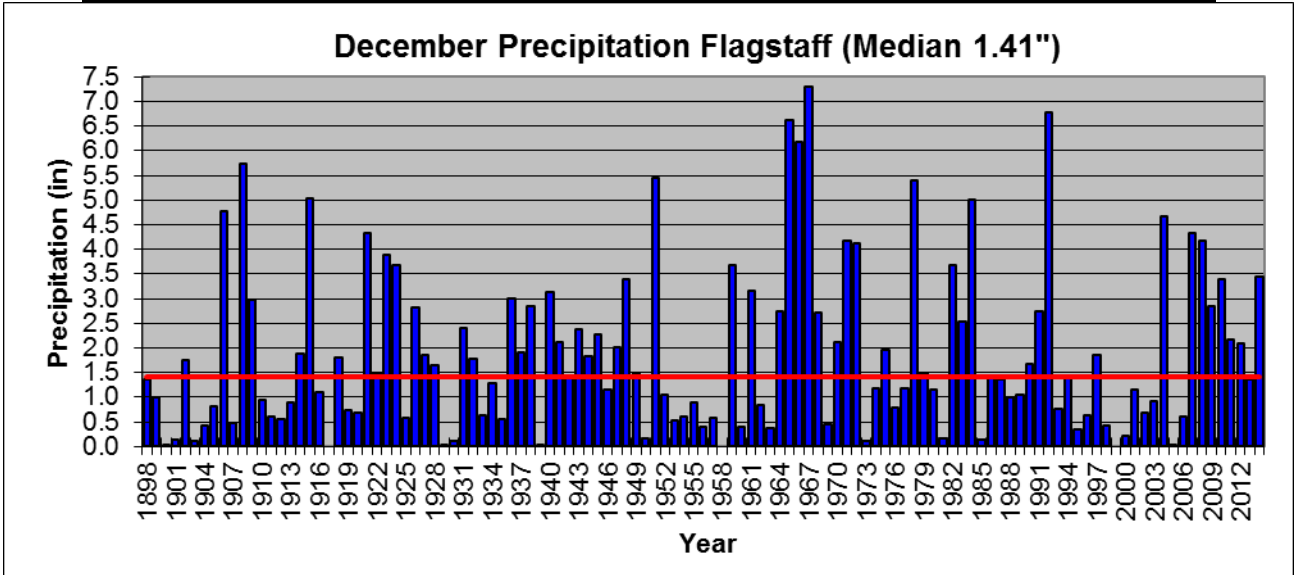
The water year minimum temperatures have continued 0-4°F warmer than normal statewide. Only isolated spots have been cooler than normal. Daytime temperatures have been 0-2°F warmer than normal across most of the state, with slightly warmer conditions in much of Coconino, Yavapai and Cochise counties. Northern and western Arizona and most of Maricopa and Greenlee counties are still below 70% of average precipitation. Southern Coconino, eastern Yavapai, northern Gila, southwestern Maricopa, and western Pima counties have received as much as 175% of normal precipitation, mostly due to the December rain and snow.

**December Mean Temperature Graphs – Flagstaff, Phoenix, and Tucson 1895-2014:**



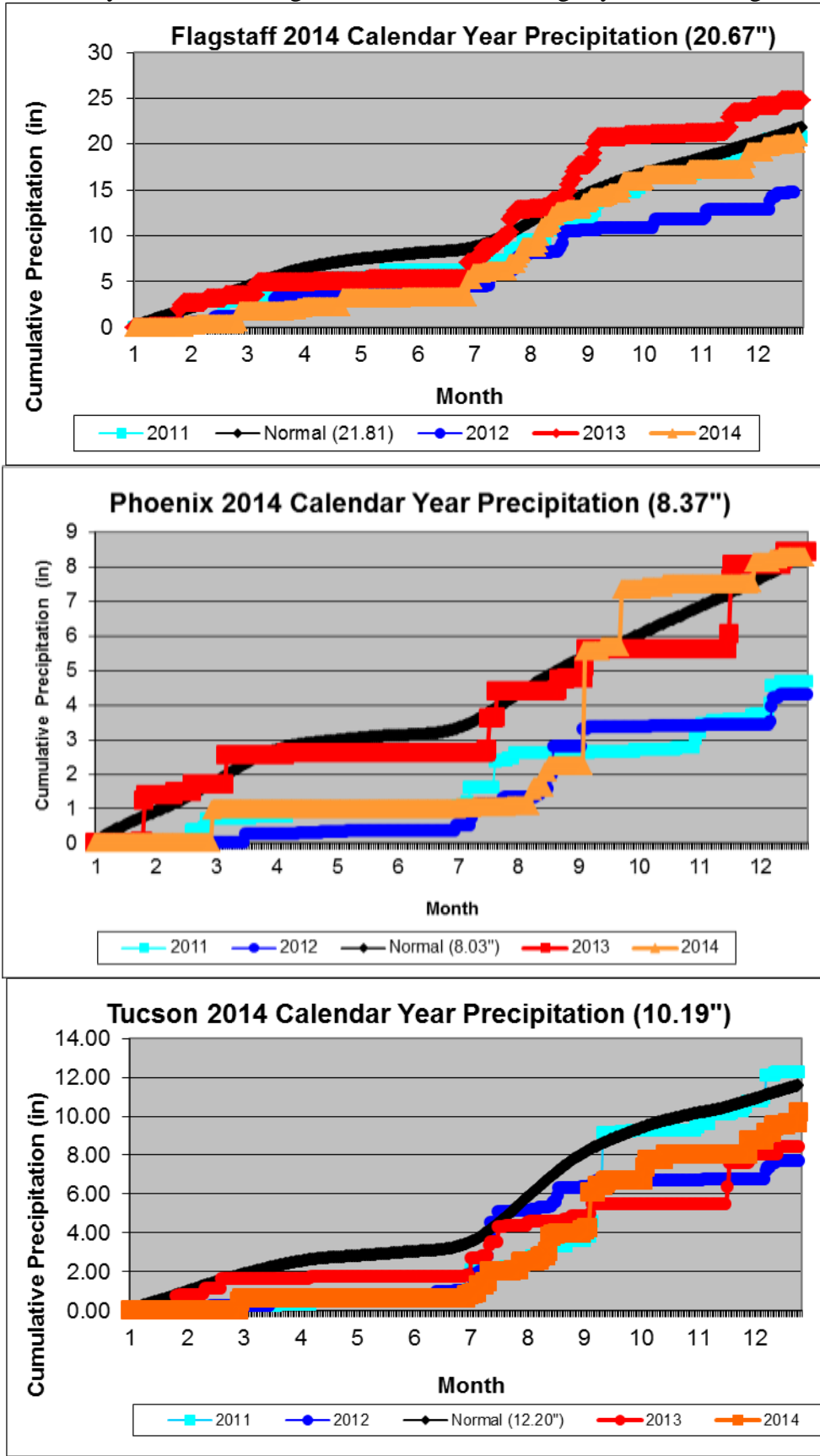


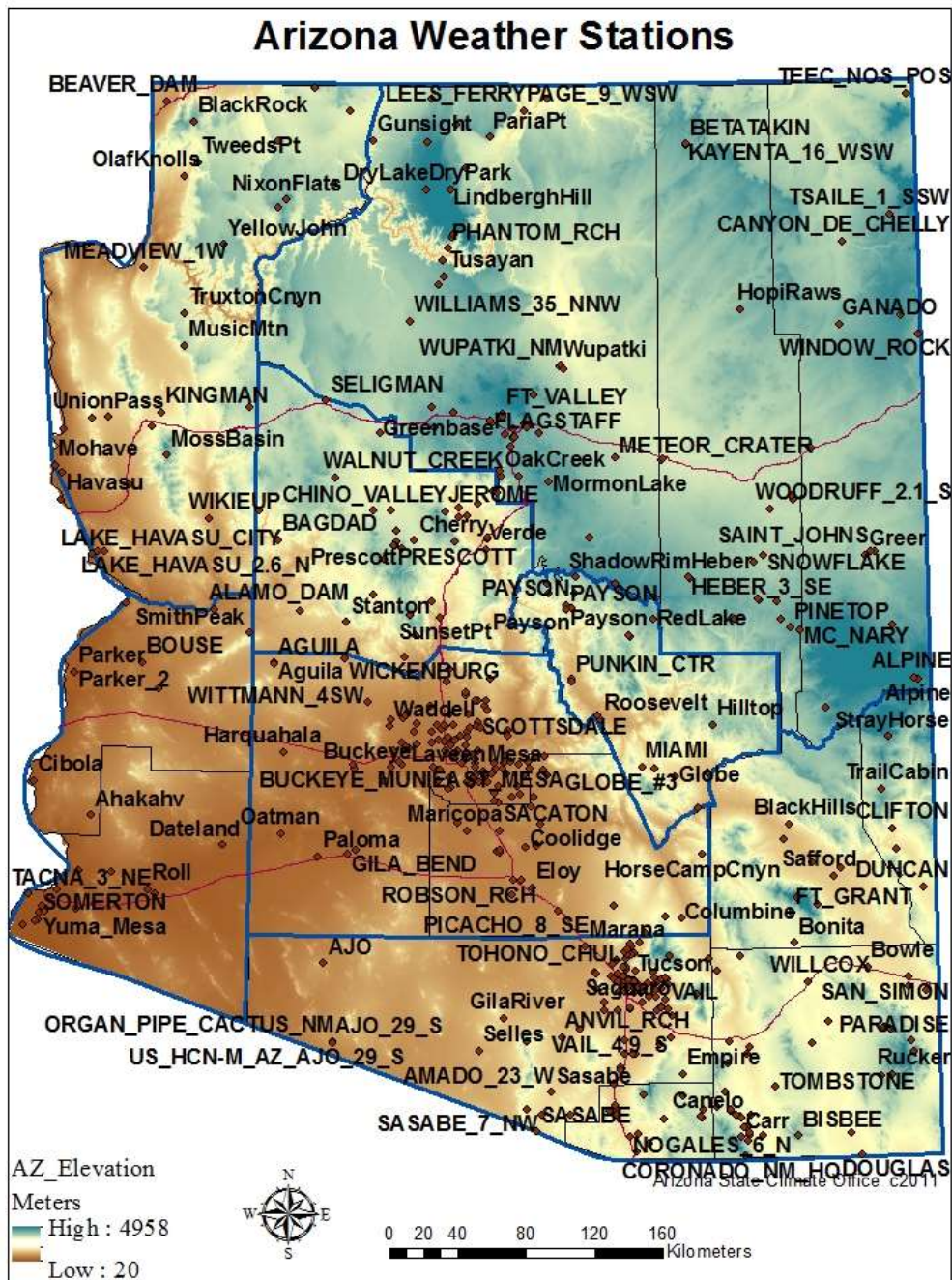
**December Mean Precipitation Graphs – Flagstaff, Phoenix, and Tucson 1895-2014:**



**2014 Cumulative Precipitation Graphs – Flagstaff, Phoenix and Tucson:**

Flagstaff and Tucson ended the year below average while Phoenix was slightly above average for precipitation.





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)