



Arizona Climate Summary

April 2012

Summary of conditions for March 2012

March 2012 Temperature and Precipitation Summary

March 1st – 17th: March began with another low pressure system sweeping across Wyoming, Utah and Colorado, just brushing by northern Arizona with some cold air, but virtually no precipitation, except Navajo National Monument received 0.21", and Window Rock had 0.02" on the 2nd. High pressure returned the 4th through the 6th, but another low moved south through Nevada and California and by the 8th, the system became cut-off from the main flow as it moved into Arizona. On the 8th. On the 8th, 9th, and 10th, this system dropped 0.04" of rain each at Window Rock, St. Johns, and Bowie. The next 10 days remained clear, dry and warmer as a weak high pressure system moved in and the storm systems remained well north of the state. Temperatures climbed into the mid to upper 80s in the southwest deserts and along the lower Colorado River valley.

March 18th – 31st: By the 18th, a major winter storm had moved down the Pacific Coast bringing arctic air and significant precipitation to the Pacific Northwest, California and Nevada. The system moved across Utah and Arizona on the 18th and 19th, with precipitation statewide, and relatively low snow levels. Snowfall totals included 28.4" at Bellemont, 15" at the north rim of the Grand Canyon, 7.1" at Navajo National Monument, 11.3" at Payson, 12.5" at Seligman, 11" at Show Low, and there were reports of 53" at Sunrise. Rainfall totals included 0.63" at Pinnacle Peak, 0.96" at Lost Dutchman State Park in Apache Junction, over 0.63" at Litchfield Park, 0.55" at Eloy, 2.49" at Coronado National Monument, 1.02" at Carefree, Casa Grande and Kingman, over 0.21" at Bisbee, 0.35" at Tucson, 0.25" at Phoenix, 0.39" in Scottsdale, 0.68" at Deer Valley, and 0.41" at Nogales. Temperatures during the passage of the cold front dropped 20°F from the warm conditions ahead of the storm. During this time, the Midwest and east coast were enjoying abnormally warm conditions in the 80s and warmer, while Arizona had daytime highs in the 60s. By the 21st, the storm had moved on into New Mexico and then headed northeast across the Great Plains, causing tornados and severe weather in the Midwest. High pressure returned to the southwest along with warmer than normal temperatures, making ideal conditions for the baseball spring training games across central Arizona. Clear skies and warm temperatures continued through the end of the month as high pressure dominated the circulation pattern in the southwest. The exceptionally strong ridge of high pressure forced several storms to remain well north, crossing into Canada, and bringing unseasonably warm temperatures to the northern tier of states.

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

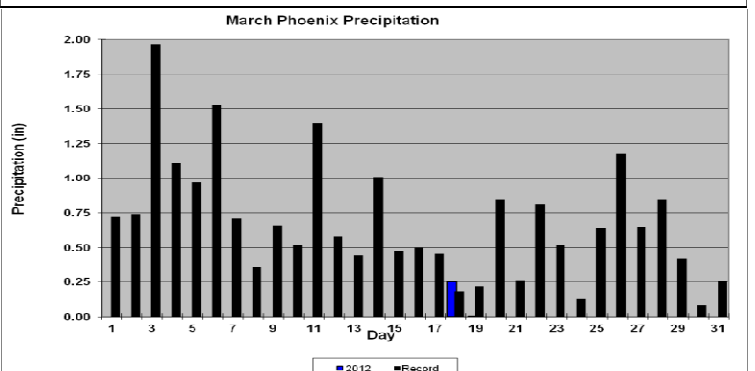
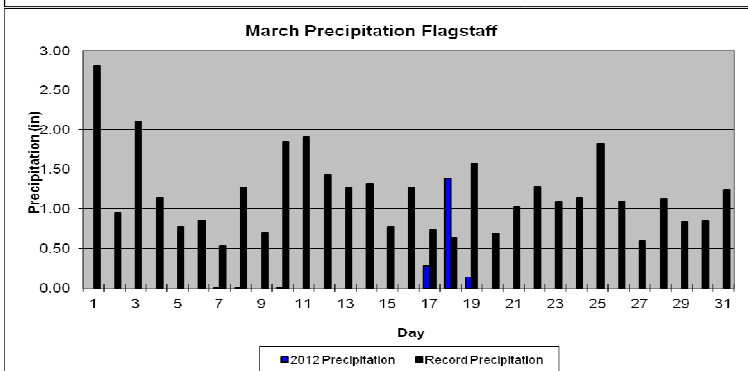
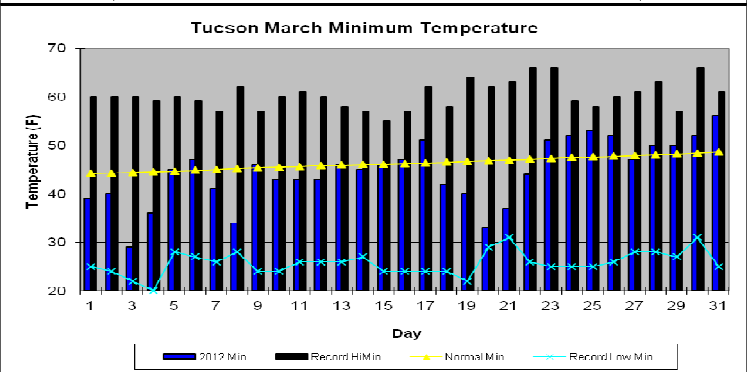
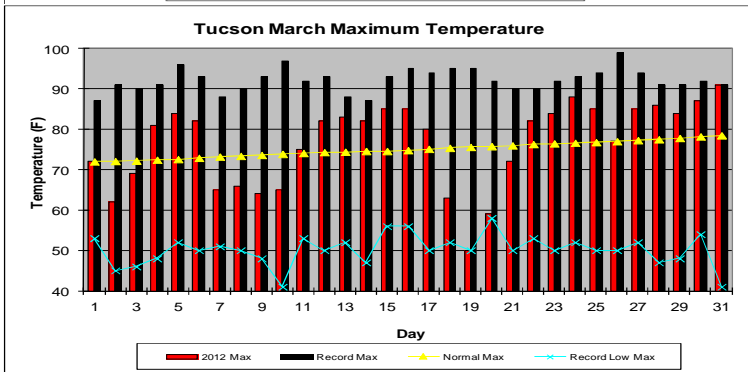
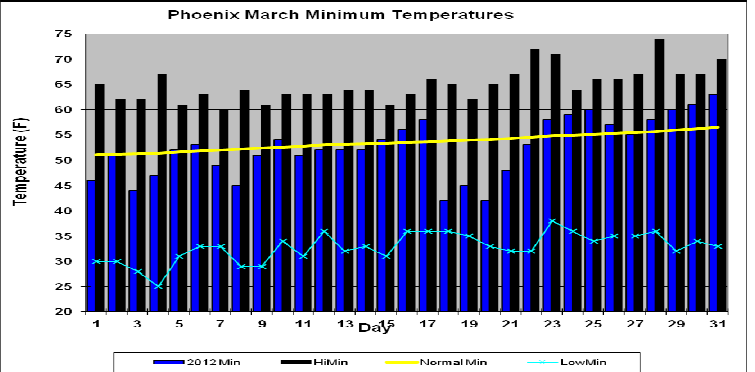
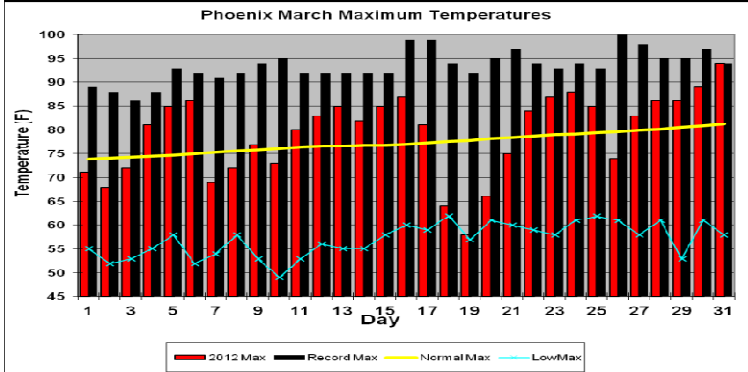
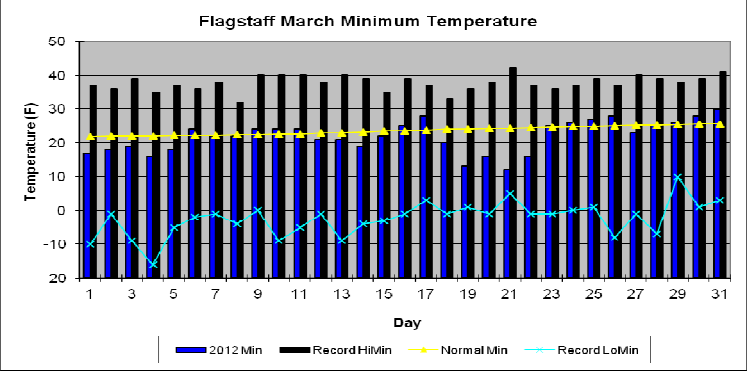
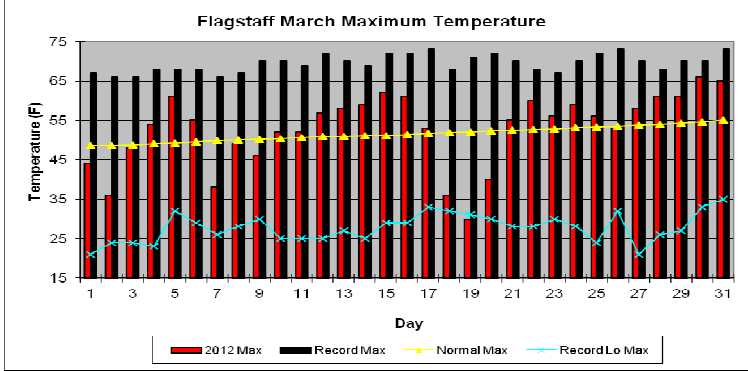
****Note:** The discrepancy between the Statewide Temperature and Precipitation values for Phoenix, Flagstaff and Tucson and the daily values in their graphs are due to the reporting times. Statewide Temperature and Precipitation values are taken at 5pm, while official daily records at the airports are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

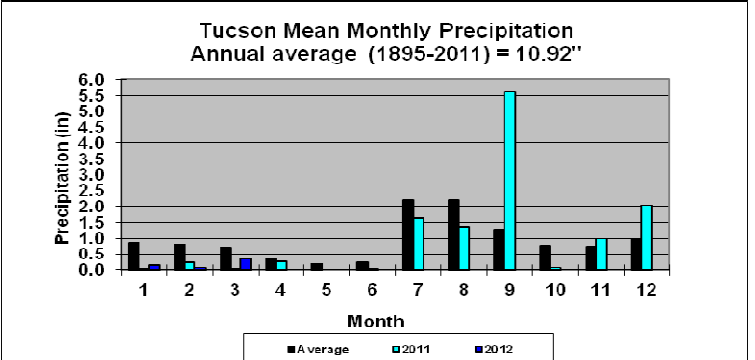
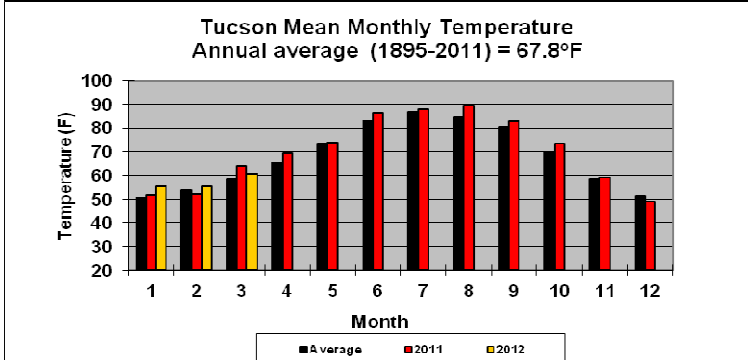
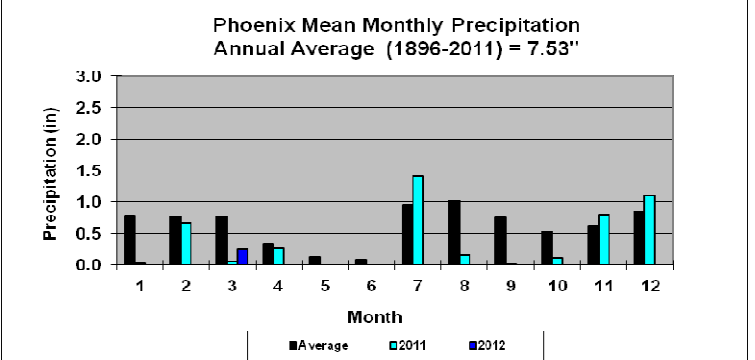
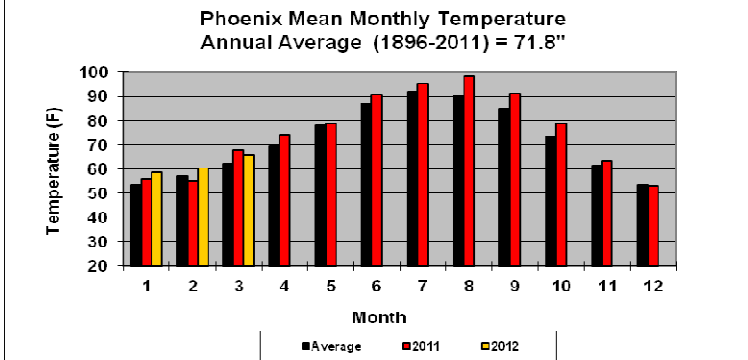
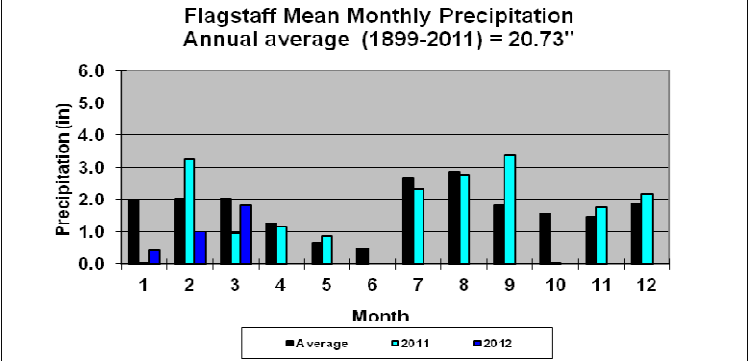
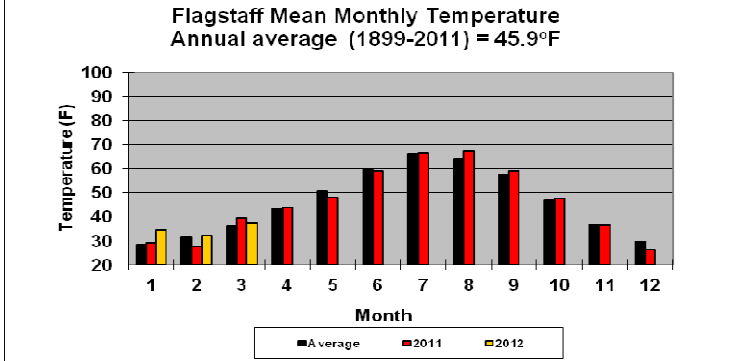
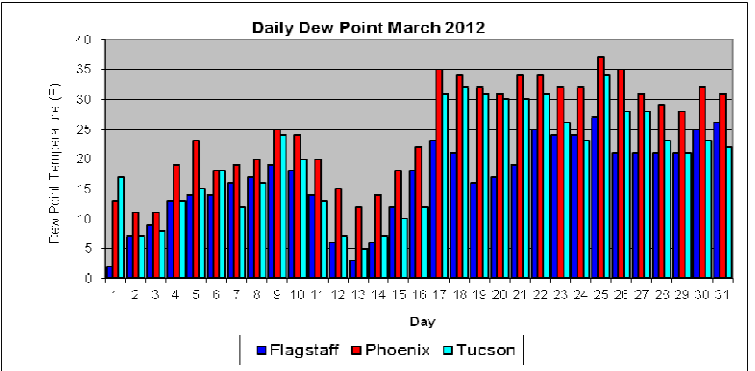
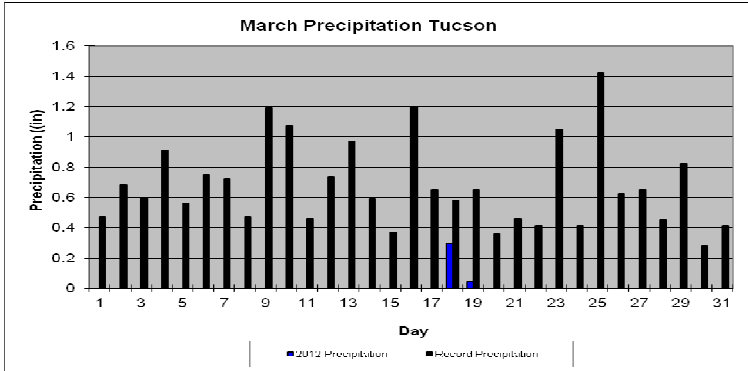
State Climate Office
Dr. Nancy J. Selover, State Climatologist
<http://azclimate.asu.edu> Tel: 480-965-6265
© 2012 Arizona State Climate Office



School of Geographical Sciences & Urban Planning
Arizona State University
Tempe, AZ 85287-1508
Edited by Nancy J. Selover & Matt Salerno

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





FLAGSTAFF CLIMATE STATISTICS
March 2012

March had no significant ranking for temperature or precipitation.

Avg Max Temp (F) 52.9 Normal 50.4
Avg Min Temp (F) 21.9 Normal 23.6
Avg Mean Temp (F) 37.4 Normal 37.0
Departure from Normal (F) +0.4

Highest Monthly Avg Temp (F) 44.9 in 1934
Lowest Monthly Avg Temp (F) 26.8 in 1973

Highest Temp this month (F): 66 on 30th
Lowest Temp this month (F): 12 on 21st

Record High (F): 73 on 3/17/2007
3/26/1988
3/31/1966

Record Low (F): -16 on 3/04/1966

Temperature or precipitation records this month:
18th – Precip 1.39” set, previous record 0.64” 1982
18th – Snow 19.5” set, previous record 8.7” 1982
19th – LoMax 30 set, previous record 31 1982

Flagstaff Number of Days of:

Minimum Temp 20° or lower 11
Minimum Temp 30° or higher 1
Maximum Temp 40° or lower 5
Maximum Temp 60° or higher 7

Heating Degree Days 847 Normal 869
Cooling Degree Days 0 Normal 0
Degree base 65°F

Total March Precipitation 1.81”
Normal March Precipitation 2.12”
Departure from normal -0.31”
Greatest 24-Hr Precipitation 1.60 on 3/17-18
Total Precipitation Year-to-Date 3.22”
Departure from Normal -3.16”

Number of Days:

Clear 27
Partly Cloudy 3
Cloudy 1

Greatest March Precipitation 6.75” in 1970
Least March Precipitation 0.00” in 1972

Average Wind Speed 8.4 mph
Highest Peak Gust 54 mph from 220° on 6th

PHOENIX CLIMATE STATISTICS
March 2012

March had no significant ranking for temperature and was the 14th driest on record

Avg Max Temp(F) 79.2 Normal 76.9
Avg Min Temp(F) 52.5 Normal 53.5
Avg Mean Temp (F) 65.9 Normal 65.2
Departure from Normal (F) +0.7

Highest Monthly Avg Temp (F) 72.3 in 2004
Lowest Monthly Avg Temp (F) 54.3 in 1897

Highest Temp this month (F): 94 on 31st
Lowest Temp this month (F): 42 on 18th, 20th

Record High (F): 100 on 3/26/1988
Record Low (F): 25 on 3/04/1966

Temperature or precipitation records set this month:
18th – Precip 0.25” set previous record 0.18” 1983
31st HiMax 94 tied, first set in 2004

Phoenix Number of Days of:

Minimum Temp 50° or lower 9
Minimum Temp 60° or higher 4
Maximum Temp 70° or lower 5
Maximum Temp 80° or higher 19

Heating Degree Days 72 Normal 81

Cooling Degree Days 109 Normal 87
 Degree base 65°F

Partly Cloudy 9
 Cloudy 1

Total March Precipitation 0.25"
 Normal March Precipitation 0.99"
 Departure from normal -0.74"
 Greatest 24-Hr Precipitation 0.25" on 3/18
 Total Precipitation Year-to-Date 0.25"
 Departure from Normal -2.57"

Greatest March Precipitation 4.82" in 1941
 Least March Precipitation 0.00" in 1899,
 1933, 1940, 1947, 1951, 1955, 1956, 1959, 1971,
 1972, 1984, 2008

Average Wind Speed 6.2 mph
 Highest Peak Gust 59 mph from 270° on 18th

Number of Days:

Clear 21

TUCSON CLIMATE STATISTICS

March 2012

March had no significant ranking for temperature or precipitation

Heating Degree Days 165 Normal 179
 Cooling Degree Days 35 Normal 29
 Degree base 65°F

Avg Max Temp(F) 76.6 Normal 74.1
 Avg Min Temp(F) 44.5 Normal 46.2
 Avg Mean Temp(F) 60.6 Normal 60.1
 Departure from Normal (F) +0.5

Total March Precipitation 0.34"
 Normal March Precipitation 0.73"
 Departure from normal -0.39"
 Greatest 24-Hr Precipitation 0.30" on 3/18
 Total Precipitation Year-to-Date 0.56"
 Departure from Normal -1.97"

Highest Monthly Avg Temp (F) 66.6 in 2004
 Lowest Monthly Avg Temp (F) 51.5 in 1973

Greatest March Precipitation 3.88" in 1905
 Least March Precipitation 0.00" in 1895,
 1928, 1933, 1935, 1956, 1959, 1971, 1984,

Highest Temp this month (F): 91 on 31st
 Lowest Temp this month (F): 29 on 3rd

Record High (F): 99 on 3/26/1988
 Record Low (F): 20 on 3/04/1965

Number of Days:

Clear 27
 Partly Cloudy 2
 Cloudy 2

Temperature or precipitation records set this month:

19th – LoMax 50 tied, first set in 2006
 31st -- HiMax 91 tied, first set in 1989

Tucson Number of Days of:

Minimum Temp 40° or lower 8
 Minimum Temp 50° or higher 9
 Maximum Temp 60° or lower 2
 Maximum Temp 80° or higher 18

Average Wind Speed 7.1 mph
 Highest Peak Gust 41 mph from 190° on 18th

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

Winds for March:

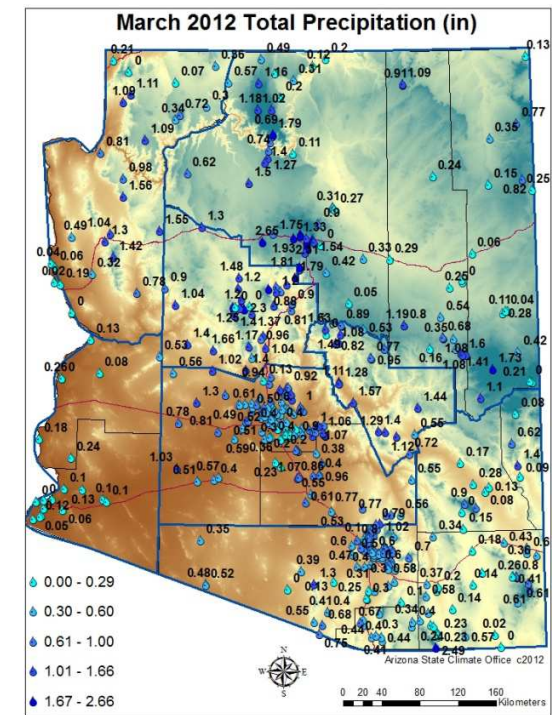
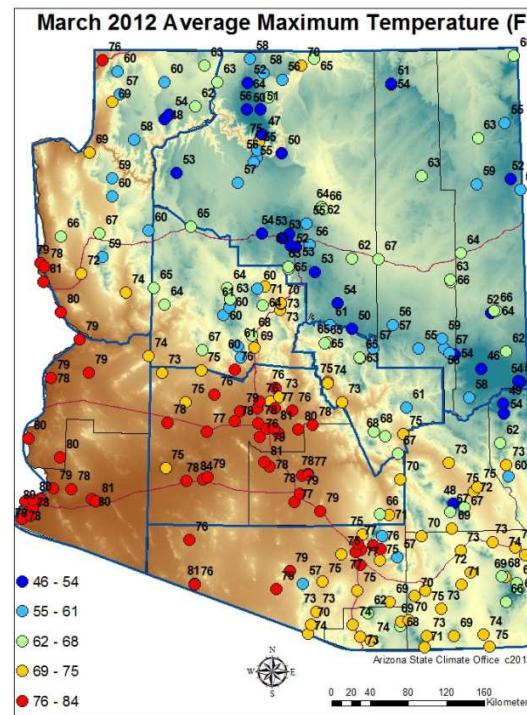
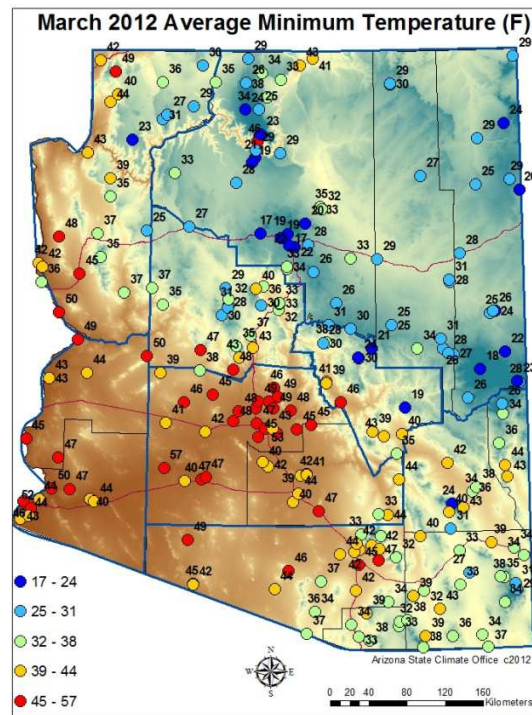
Day	Phoenix		Flagstaff		Tucson	
	Avg	Max	Avg	Max	Avg	Max
1	5.9	20	11.8	38	7.1	29
2	10.4	37	11.8	39	6.7	32
3	4.4	17	5.1	25	5.3	17
4	2.3	15	4.7	23	5.1	15
5	3.2	15	4.4	21	5.7	20
6	10.5	35	20.5	54	12.3	35
7	12.5	30	9.9	33	13.3	36
8	5.2	18	13.4	41	5.1	21
9	6.8	23	9.6	32	9.2	35
10	7.6	20	7.9	26	7.9	25
11	5.8	15	10.4	33	6.8	20
12	4.36	15	6.2	26	5.8	21
13	5.8	17	8.2	32	7.1	23
14	4.8	15	5.8	26	5.7	17
15	3.6	16	3.7	22	5.8	21
16	4.3	15	8.2	31	6.2	22
17	12.7	33	16.2	53	11.1	35
18	12.4	59	13.4	48	13.4	41
19	6.5	22	7.8	23	7.2	32
20	4	23	5.4	28	5.9	22
21	4.5	21	2.3	20	5.3	17
22	5.1	16	3	18	5	22
23	5.8	22	6.4	25	6.1	21
24	4.7	17	4.3	24	6.9	22
25	8.3	30	13	39	8.9	31
26	4.3	21	12.8	39	5.2	35
27	4.8	18	5.2	28	5.4	22
28	4.8	20	6.9	26	5.7	21
29	4.5	23	5.2	26	6.4	24
30	4.3	16	5.8	26	5.9	18
31	8.3	26	11.6	39	7.4	31

Dew Points for March:

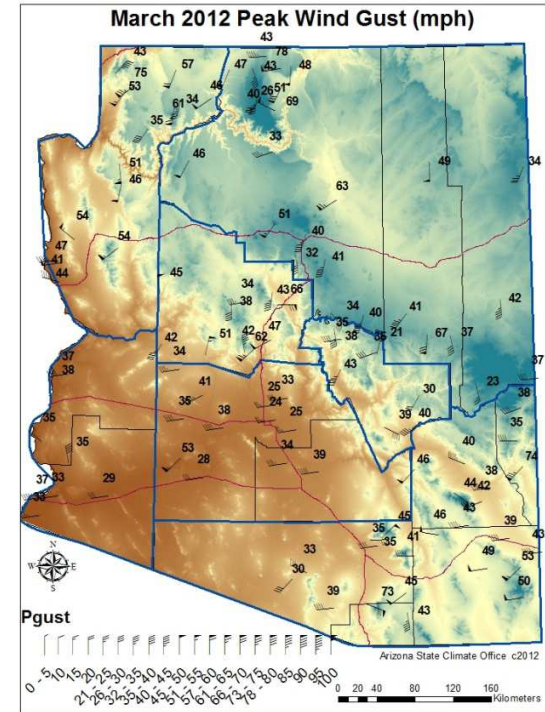
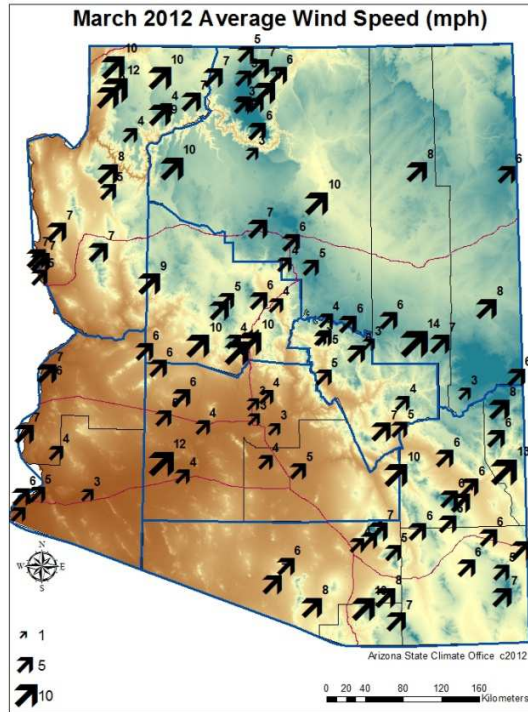
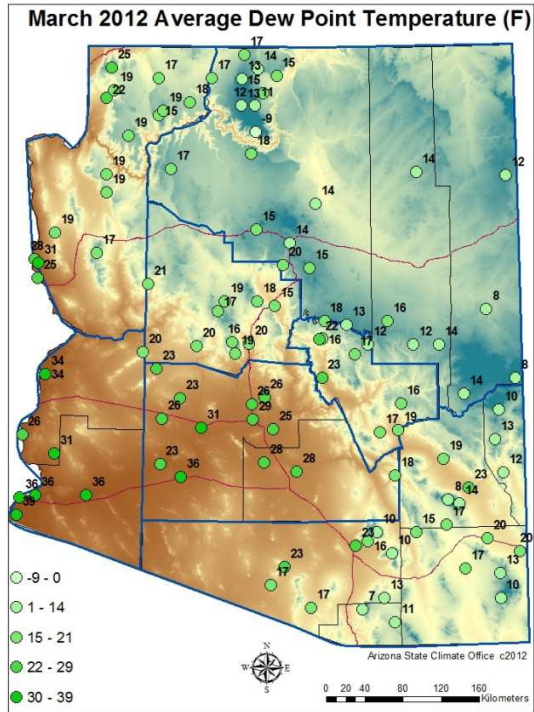
Daily Average Dew Point (°F):

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

March 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.

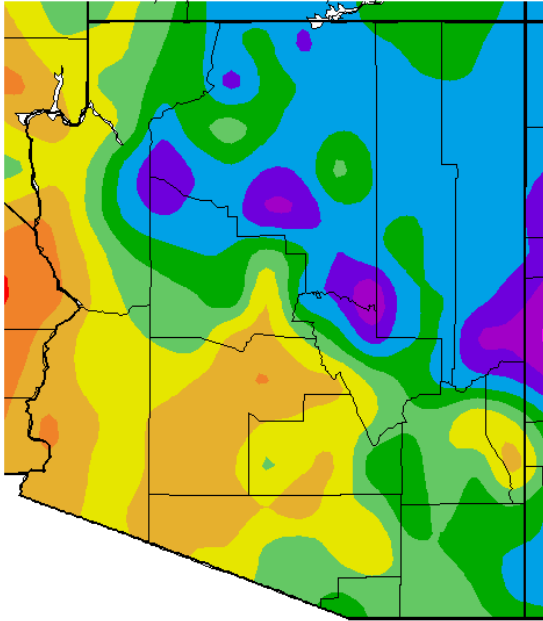


Average nighttime temperatures ranged from 17°F at Flagstaff to 57°F at Oatman in west central Arizona. Average daytime temperatures ranged from 46°F at Sunrise Mountain to 84°F at Gila Bend in the central Arizona. Precipitation values ranged from 0” in many places in the several locations in the southwest deserts and the lower Colorado River to 2.66” at Prescott and 2.65” at Williams. Most of the precipitation fell between the 17th and 19th when our biggest winter storm passed through.



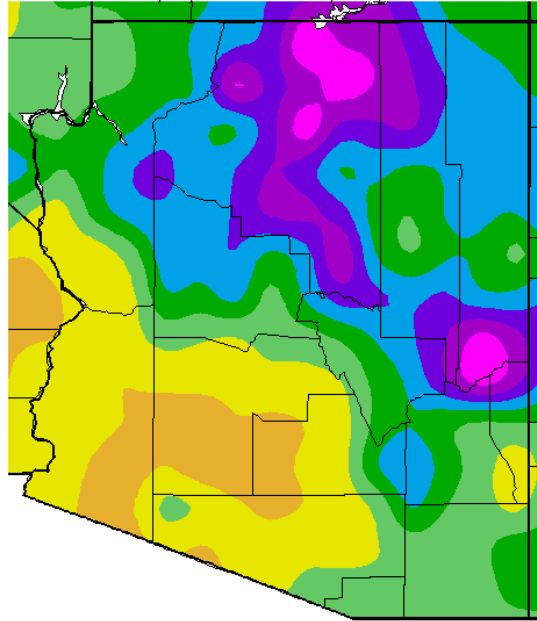
Average monthly dew points ranged from -9°F at Bright Angel in the Grand Canyon, to 39°F at Yuma. Average winds were light, with 14 mph as the highest average at Limestone Canyon in east central Arizona. The highest peak wind gust was 78 mph at Four Springs in northern Arizona. This month we have wind barbs to represent the peak winds. The barbs are like arrows with feathers at the end to show the wind speed. The end with the feathers is pointing in the direction the winds blow from, as they blow into the station. One half barb is 5 mph, a full barb is 10 mph, and a pennant is 50 mph. So Four Springs will have one pennant and two full and one half barbs.

Av. Min. Temperature (deg. F)
3/1/2012 - 3/31/2012



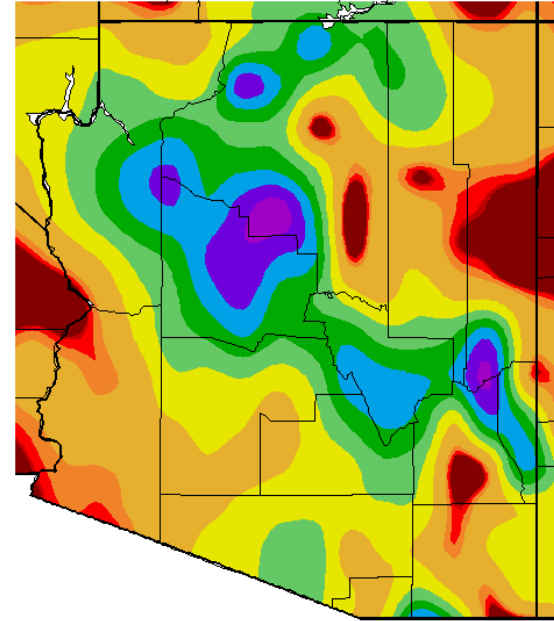
15 20 25 30 35 40 45 50 55 60 65
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature (deg. F)
3/1/2012 - 3/31/2012



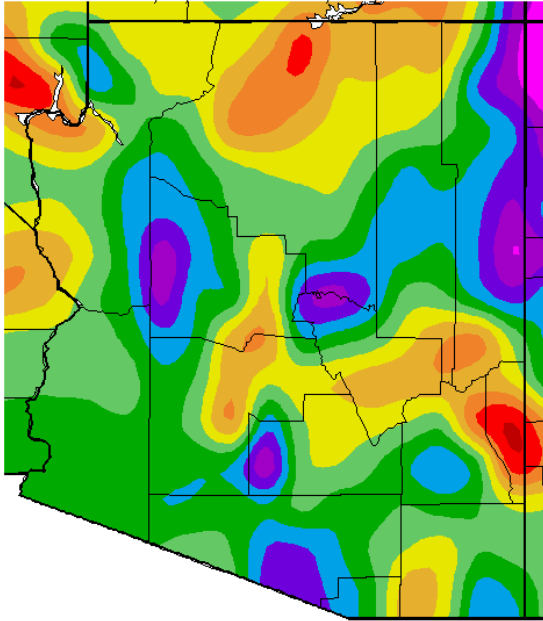
50 55 60 65 70 75 80 85 90 95 100
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Total Precipitation (in.)
3/1/2012 - 3/31/2012



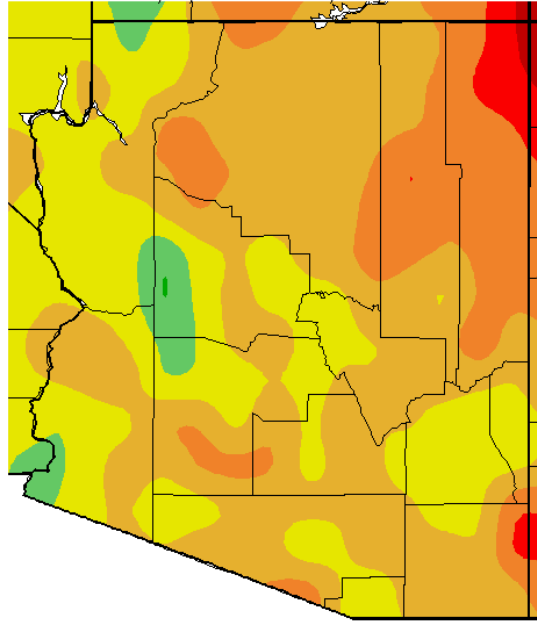
0.01 0.02 0.05 0.1 0.4 0.7 1 1.3 1.6 1.9 2.2
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Min. Temperature dep from Ave (deg. F)
3/1/2012 – 3/31/2012



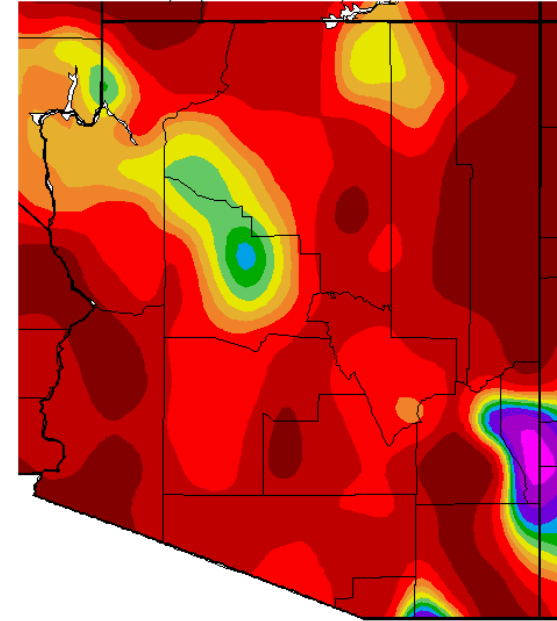
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)
3/1/2012 – 3/31/2012



Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

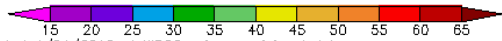
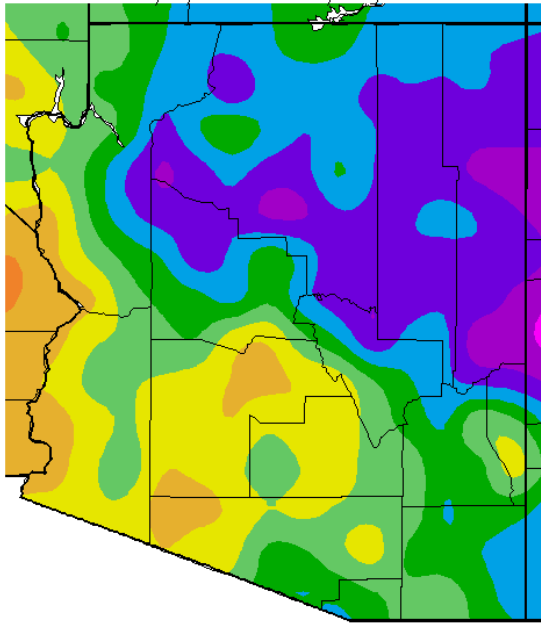
Percent of Average Precipitation (%)
3/1/2012 – 3/31/2012



Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

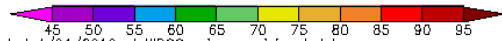
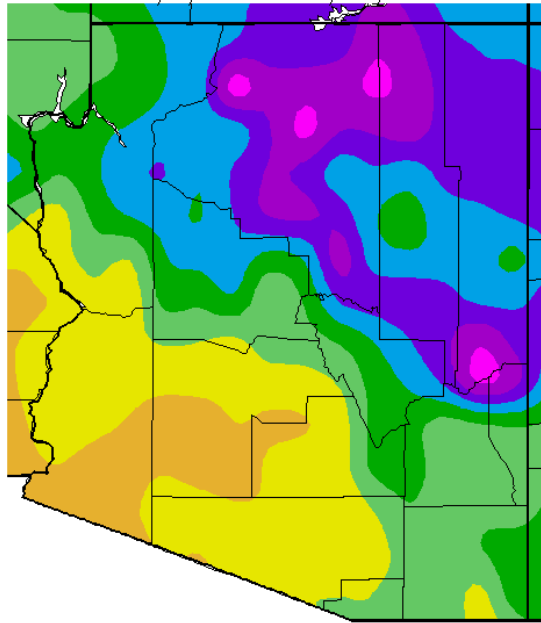
March minimum temperatures were generally 0-4°F colder than average across most of the state, with some warmer pockets in Gila, northern Coconino, central Maricopa, Greenlee, and southern Apache counties. In contrast, daytime temperatures were 0-6°F warmer than normal statewide, with the eastern half of the state a bit warmer than the western half. Warm daytime and cold nighttime temperatures are typical of clear sky conditions, and March was generally clear. Only two storm systems moved through the state this month. Precipitation was well below normal everywhere except Yavapai County and the southern White Mountains. March is generally our last wet month until the monsoon, so the April map is not likely to show much improvement.

Av. Min. Temperature (deg. F)
1/1/2012 - 3/31/2012



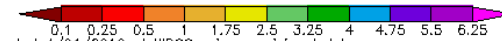
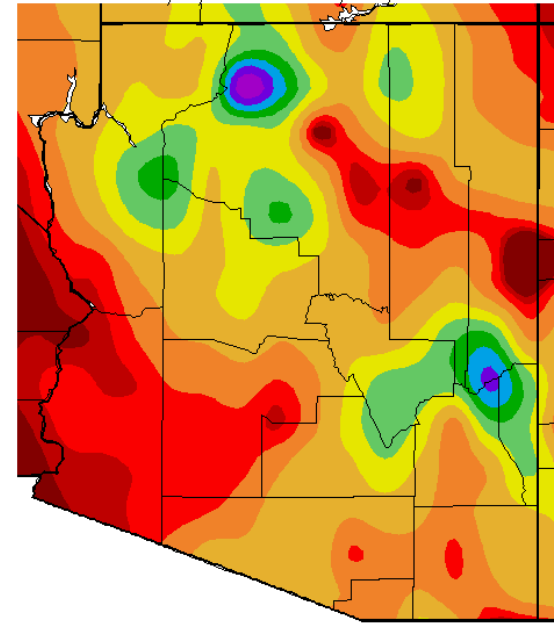
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature (deg. F)
1/1/2012 - 3/31/2012



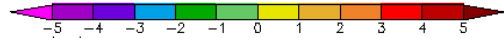
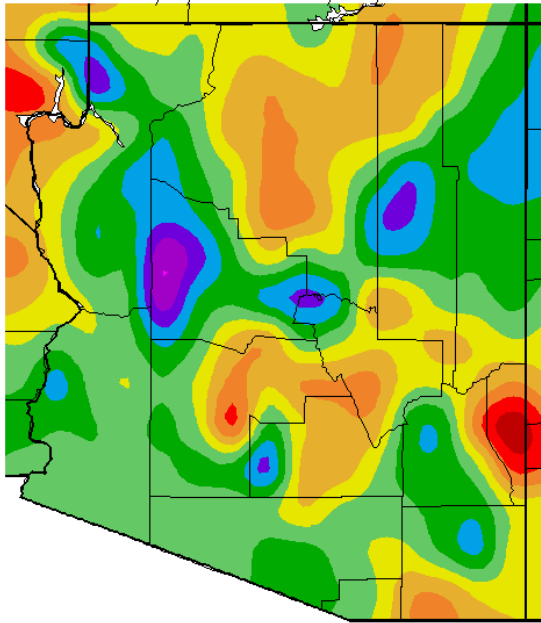
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Total Precipitation (in.)
1/1/2012 - 3/31/2012



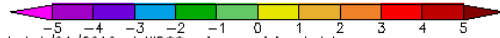
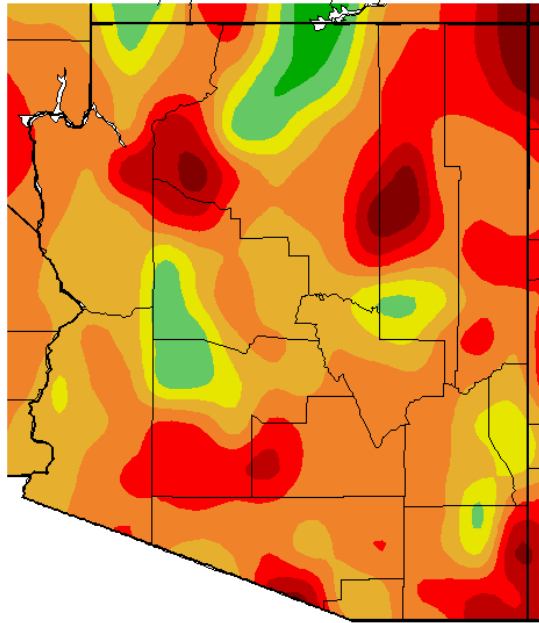
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Min. Temperature dep from Ave (deg. F)
1/1/2012 – 3/31/2012



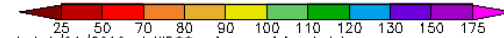
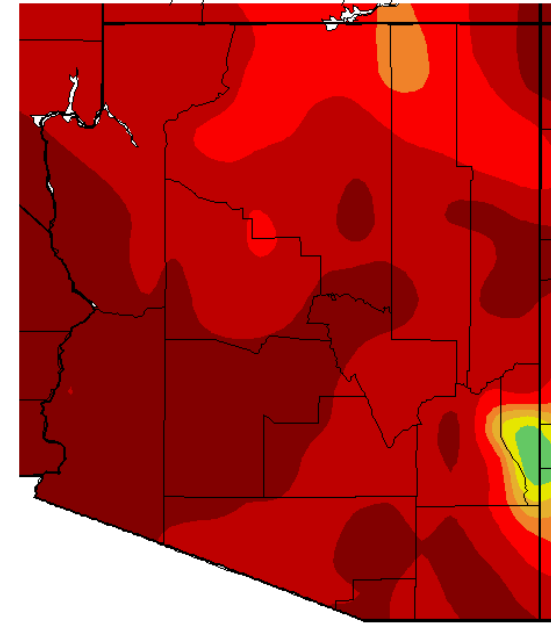
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)
1/1/2012 – 3/31/2012



Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Percent of Average Precipitation (%)
1/1/2012 – 3/31/2012

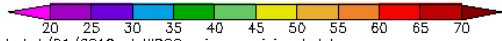
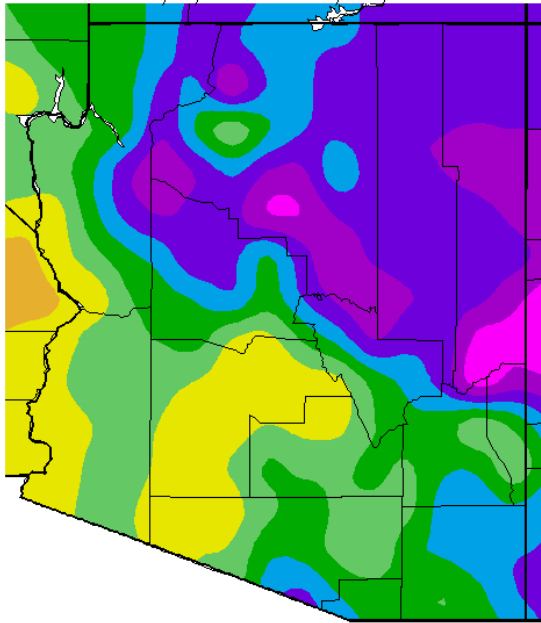


Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Calendar Year 2012

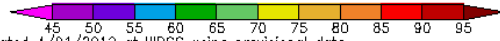
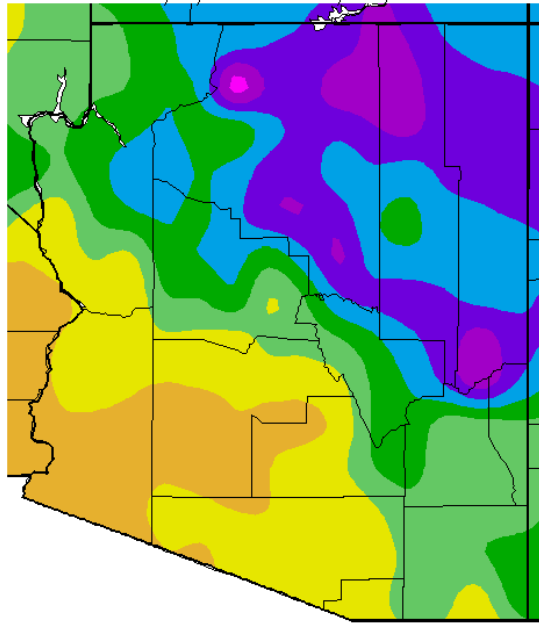
Since January, nighttime temperatures have ranged from colder than normal along the western third of the state and in the northeast, to warmer than normal in Coconino County, the White Mountains, and eastern Maricopa and central Pinal counties. Daytime temperatures have been 1 to 6°F warmer than normal across most of the state with the warmest spots in central Navajo, western Coconino and northeastern Apache counties. Northern Coconino County – along the north rim of the Grand Canyon - has been as much as 2 degrees colder than normal. The warm conditions across the north are a bit unusual as the northern counties have had more frequent cold fronts passing through, though not much precipitation has resulted from those storms. Precipitation since the first of the year has been virtually non-existent. Only the southern White Mountains have had near average precipitation. Most of the state has had less than 50% of normal and the southwest deserts have received less than 25% of normal precipitation.

Av. Min. Temperature (deg. F)
10/1/2011 - 3/31/2012



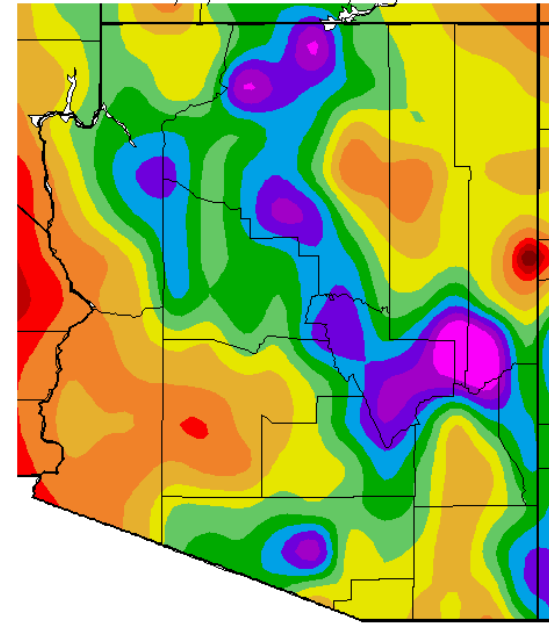
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature (deg. F)
10/1/2011 - 3/31/2012



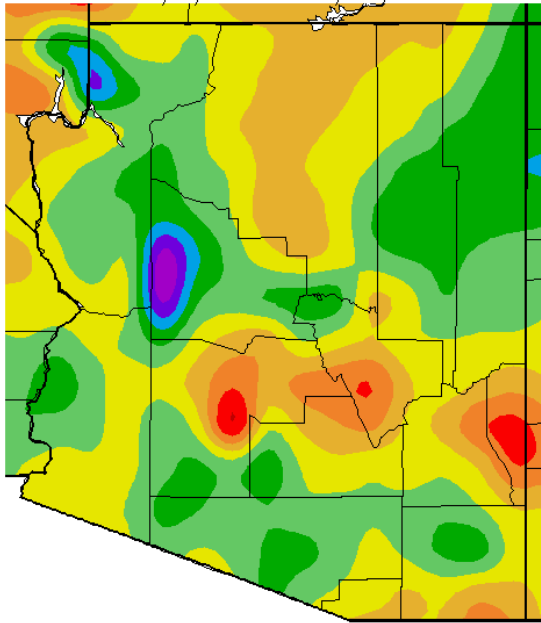
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Total Precipitation (in.)
10/1/2011 - 3/31/2012



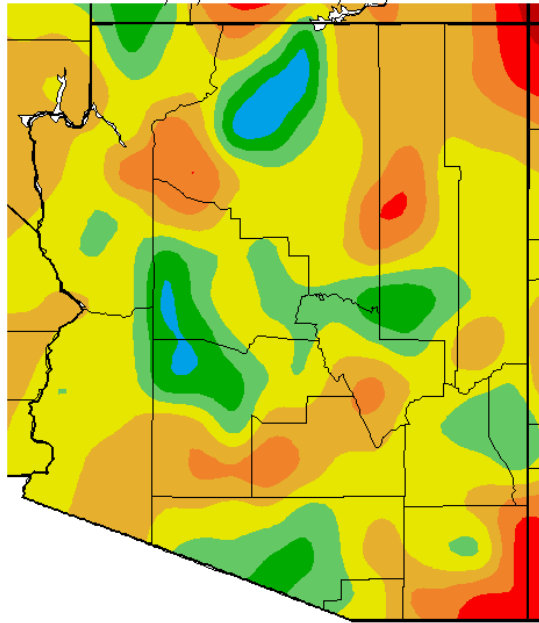
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Min. Temperature dep from Ave (deg. F)
10/1/2011 – 3/31/2012



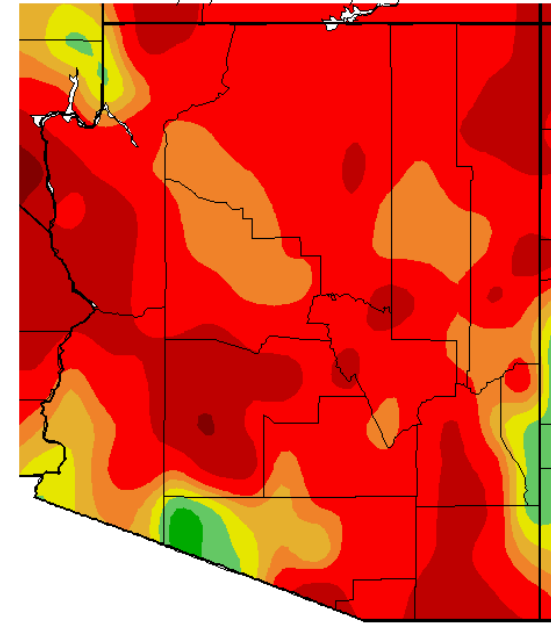
Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)
10/1/2011 – 3/31/2012



Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

Percent of Average Precipitation (%)
10/1/2011 – 3/31/2012

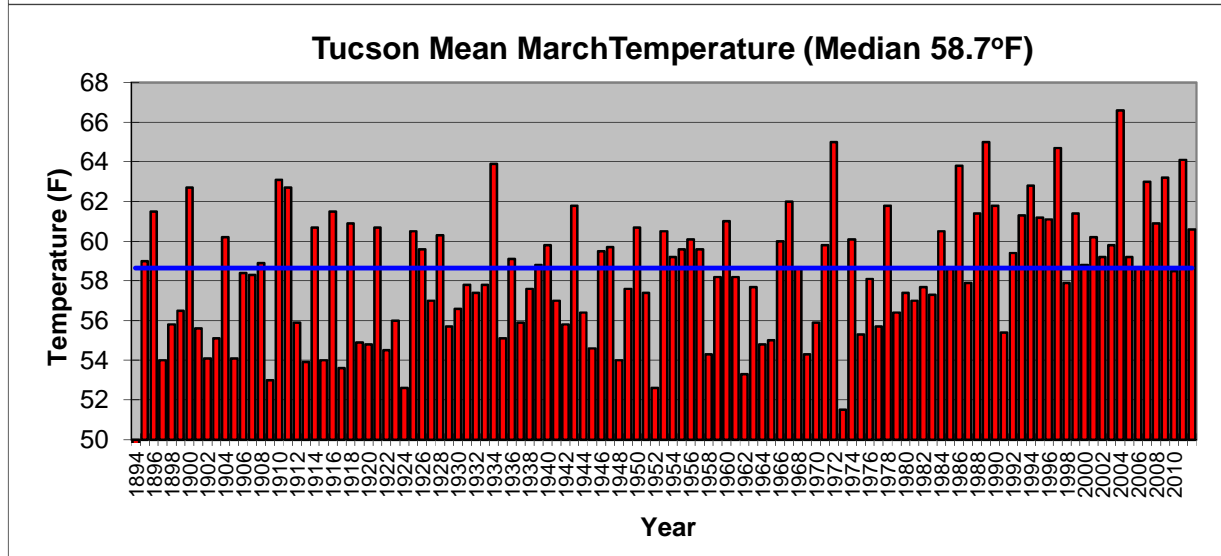
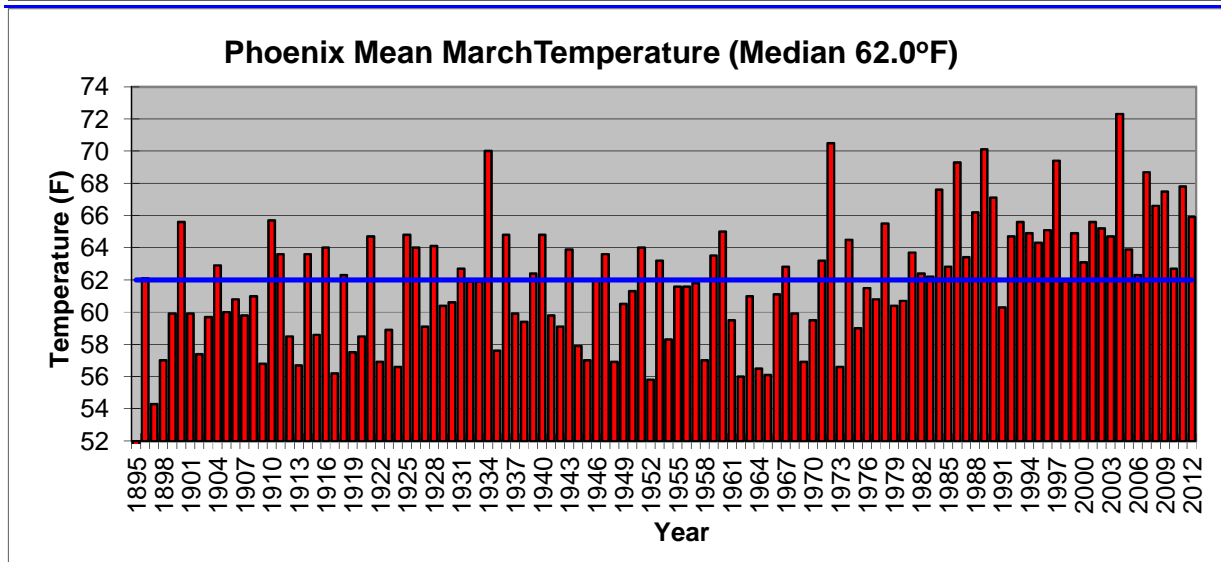
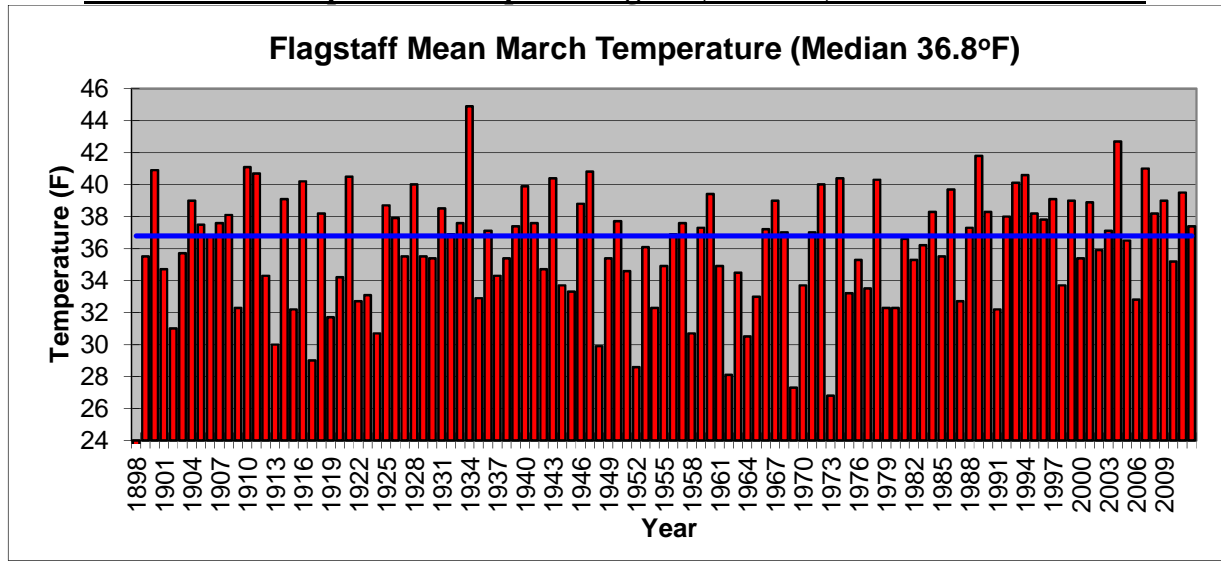


Generated 4/01/2012 at WRCC using provisional data.
NOAA Regional Climate Centers

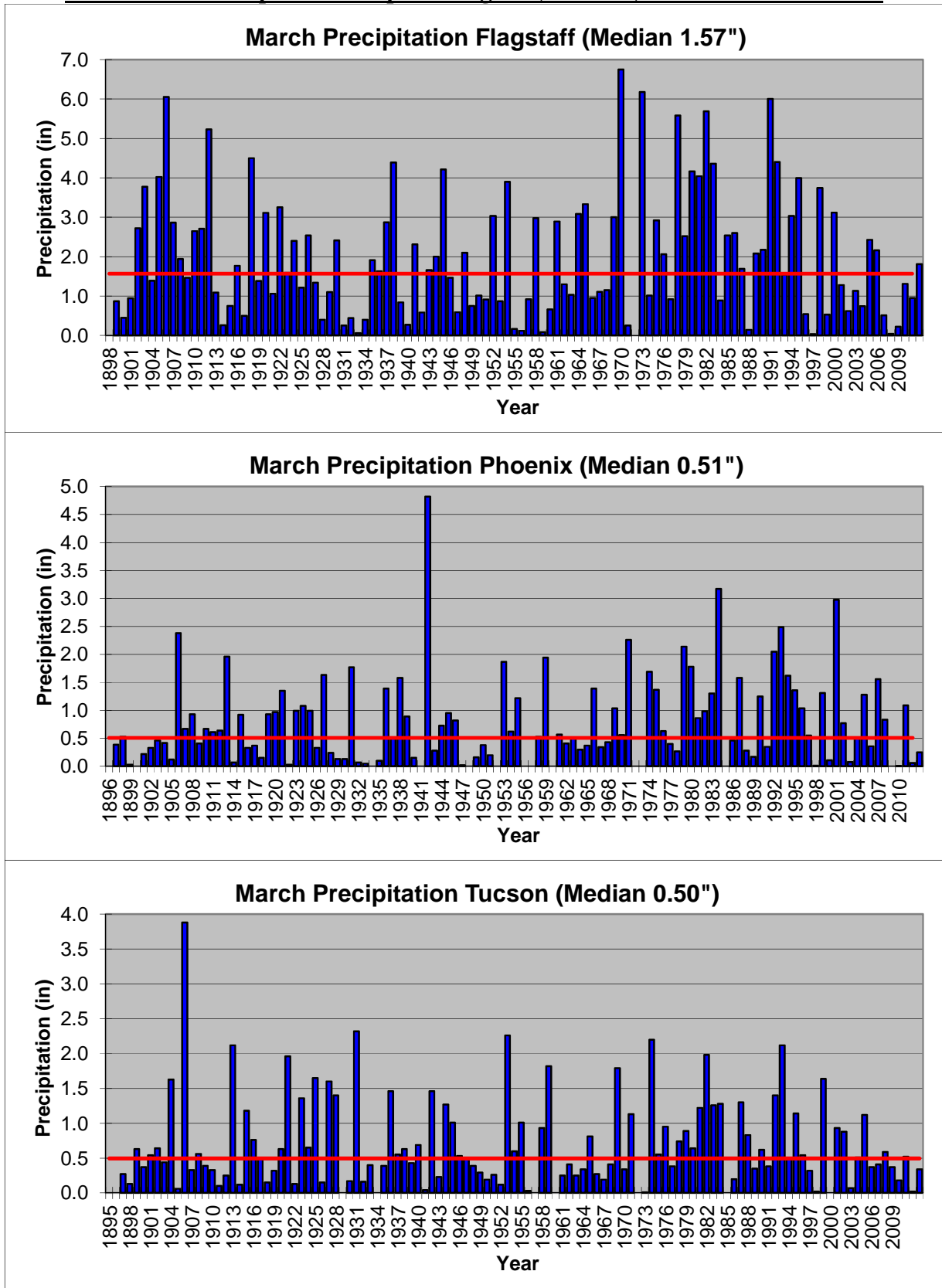
Water Year 2012 (Oct 1 2011 – Sep 30 2012)

While the early part of the water year was cold and wet, conditions since January have been warm and dry, resulting in patches of colder than average temperatures as well as warmer than average temperatures. Most of Coconino, Maricopa, Gila, Pinal, Graham and Greenlee counties have had nighttime temperatures 1 to 4 degrees warmer than normal, while Mohave, Yavapai, Pima, Navajo and Apache counties have been 0 to 2 degrees colder than normal. Daytime highs have also been quite variable around the state, 0 to 3 degrees colder than normal or 0 to 4 degrees warmer than normal. Precipitation has been scarce for the water year, with most of the state at less than 70% of average. Maricopa, southern Mohave, Cochise, and northern Apache counties have received less than 50% of average precipitation since October. These dry conditions could result in an active wildfire season as we enter the normal dry spring season from April through June.

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

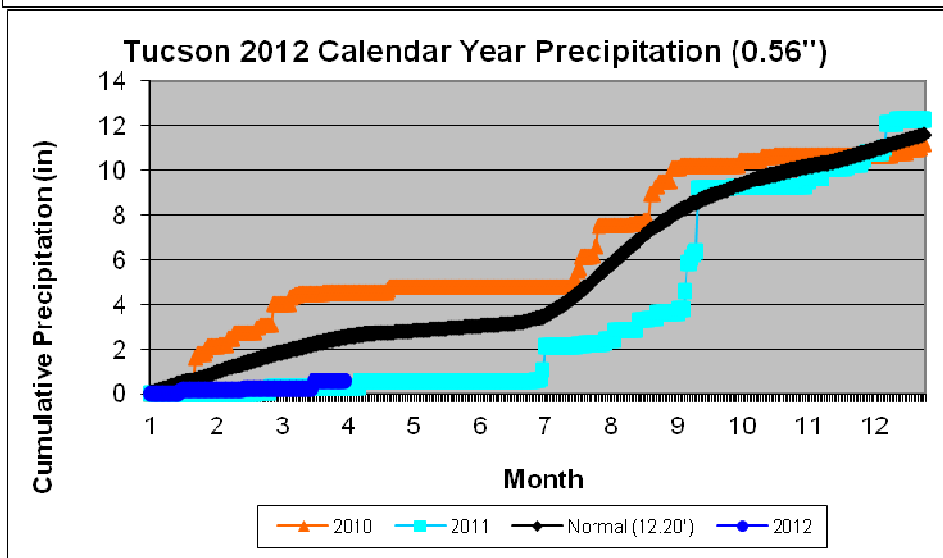
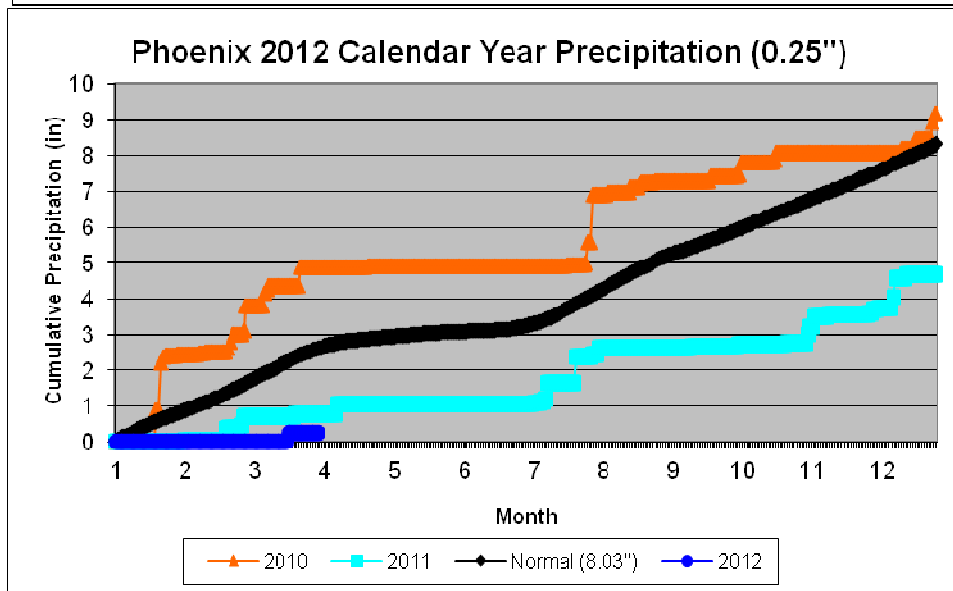
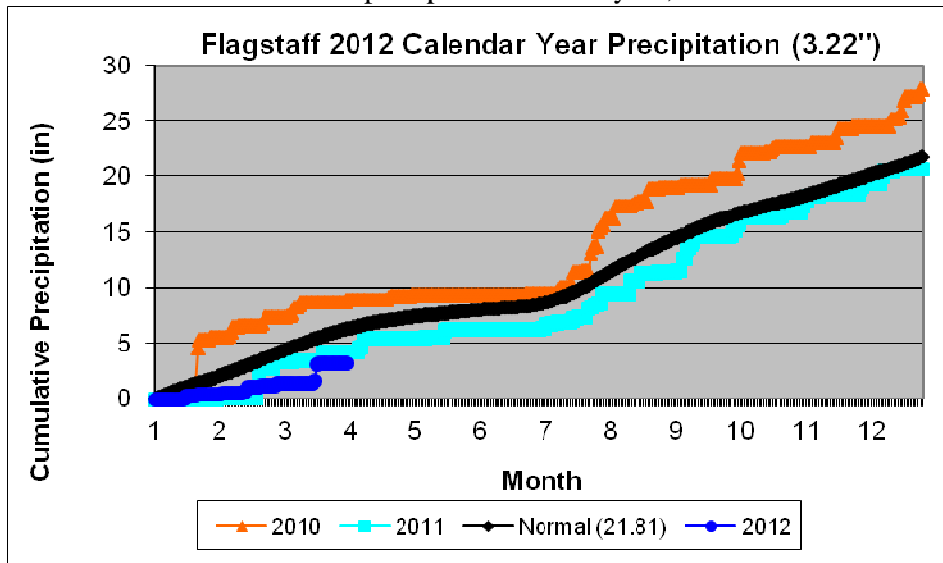


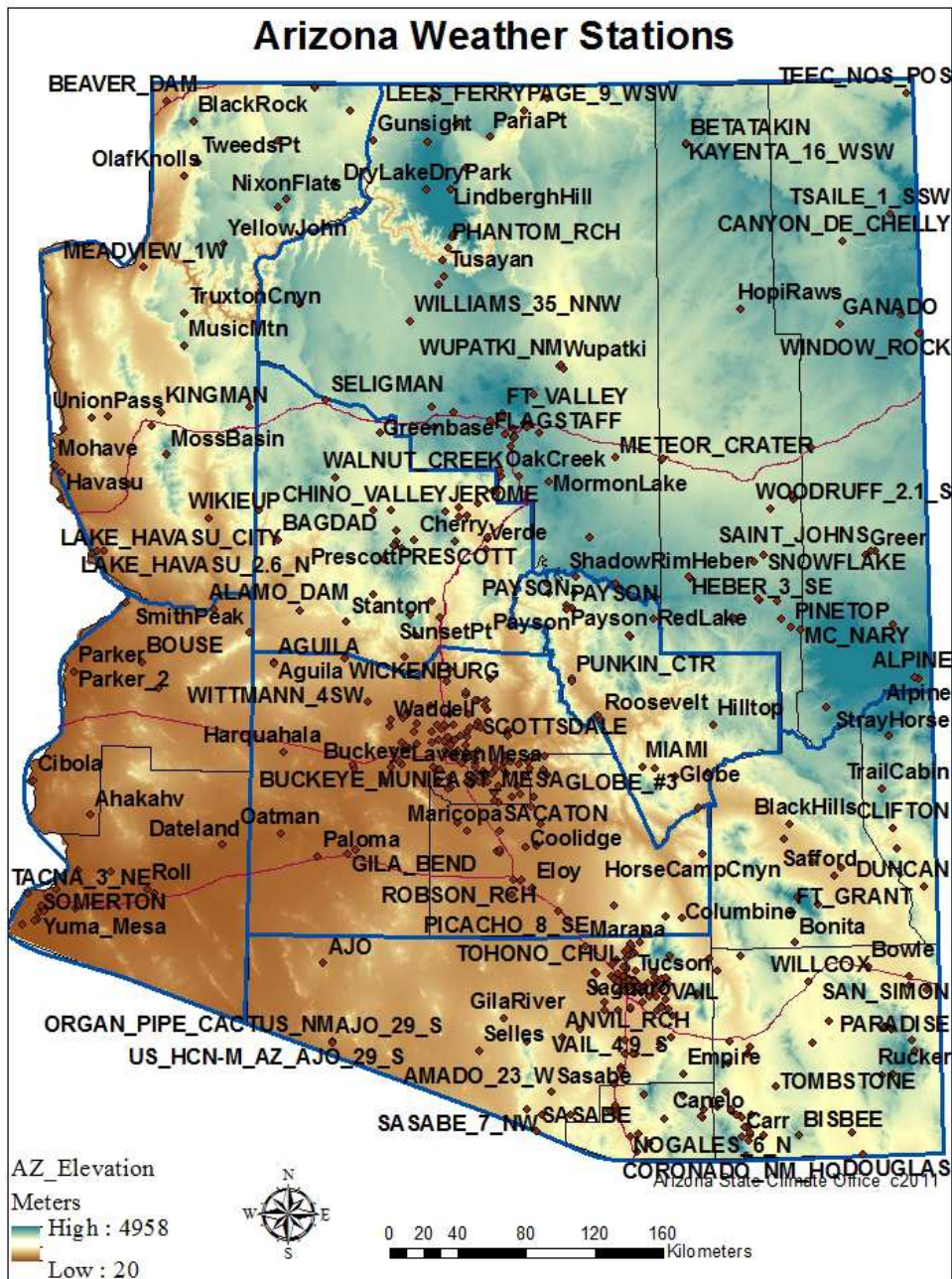
March Mean Precipitation Graphs – Flagstaff, Phoenix, and Tucson 1895-2012:



2012 Cumulative Precipitation Graphs – Flagstaff, Phoenix and Tucson:

Flagstaff and Tucson have similar cumulative precipitation to last year, while Phoenix is much drier than 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)