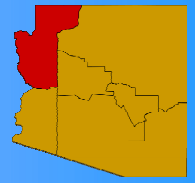




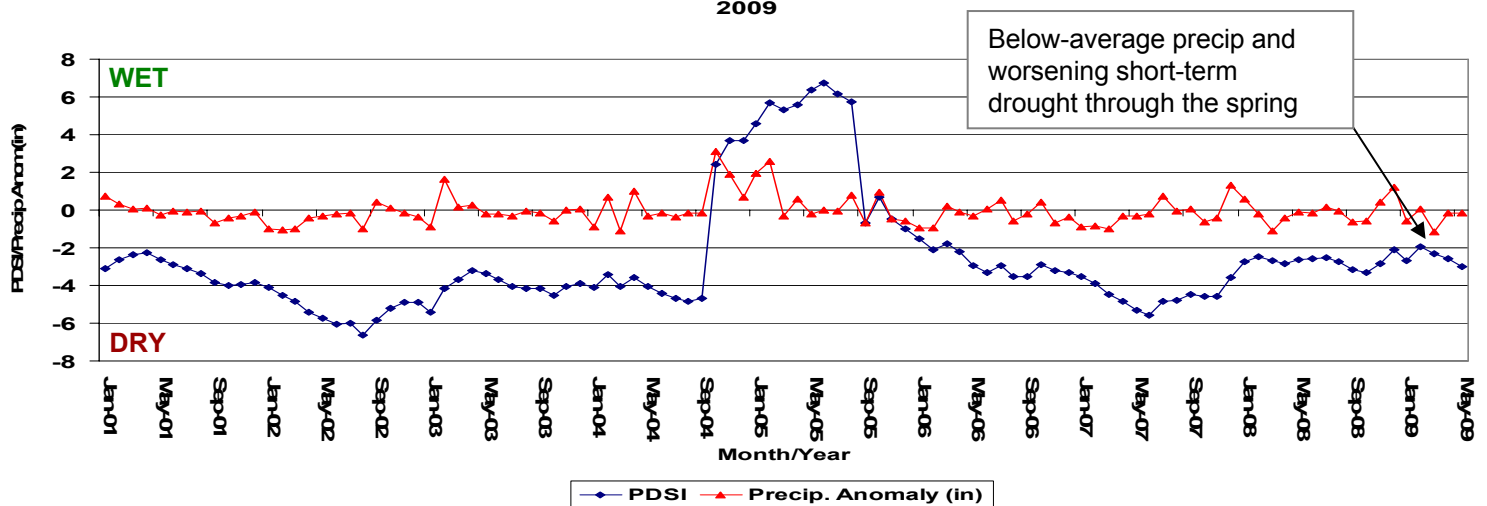
Northwest Arizona Climate Summary Summer 2009



July 1, 2009 – Northwest Arizona saw near-average precipitation this past winter with most of it falling early in the season in December. Since then, through the late winter and spring seasons, warm, dry and windy conditions have dominated the region. Northern Arizona was caught between a persistent trough of low pressure that set up over the western U.S. early this spring and a strong ridge of high pressure trying to push north from Mexico. This pattern limited the availability of moisture for passing storm systems, but created a tight barometric pressure gradient from north to south across Arizona. This pressure gradient produced the exceptionally windy conditions throughout the spring. Dry and warm conditions were also the result of this circulation pattern through March, April and May. March and April were especially dry with much of the region recording less than 25% of normal precipitation and many locations observing no precipitation at all. The ridge of high pressure to the south of Arizona made a big push north in May bringing record temperatures to the region. May 2009 was the warmest on record for many locations with temperatures 6 to 8 °F above-average for the month. This rapid advancement of the subtropical high pressure ridge helped pull some early monsoon moisture into Arizona in late May and again later in June supporting an early start to the monsoon season.

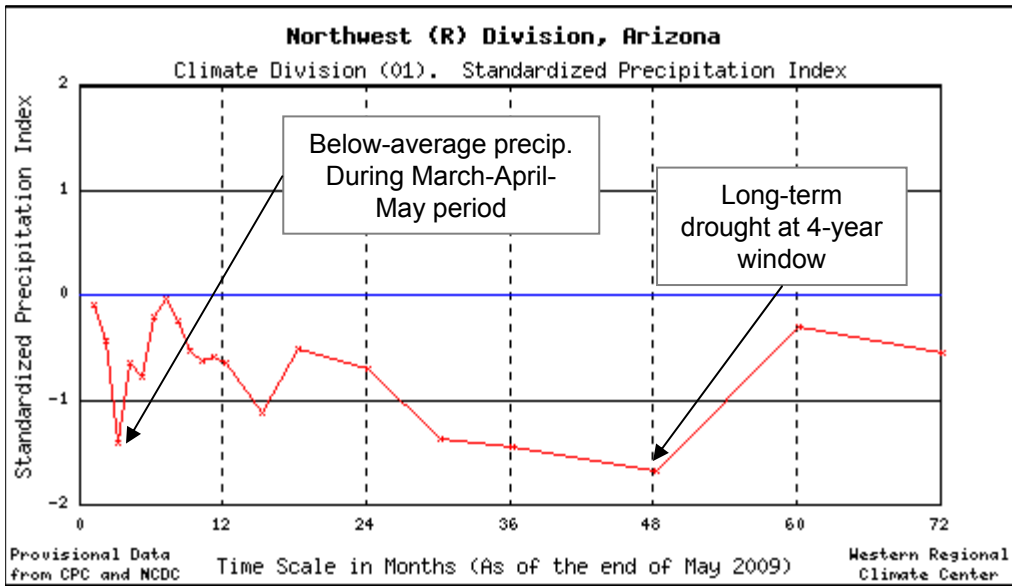
Summer (July-August-September) precipitation forecasts issued by the NOAA Climate Prediction Center continue to indicate an increased chance of above-average precipitation across much of Arizona. This is due to a combination of sea-surface temperature patterns in the eastern Pacific and severe drought conditions in western Texas and eastern New Mexico, both of which have supported a strong and early advancement of the subtropical high pressure ridge ('Monsoon High') into the southwest U.S. This pattern is expected to persist through much of the summer helping to pull abundant subtropical moisture into the region and supporting summer thunderstorm activity. A developing El Niño event in the Pacific Ocean could rapidly change this forecast for later this summer. El Niño events typically weaken the 'Monsoon High' and could lead to a rapid retreat of summer rains from northwestern Arizona in August and September. On the positive side, this developing El Niño could enhance precipitation across the region later in the fall and for this upcoming winter. Stay tuned to forecast updates at <http://www.cpc.noaa.gov>.

Northwest Arizona Palmer Drought Severity Index and Precip. Anomaly: Jan. 2001 - May 2009



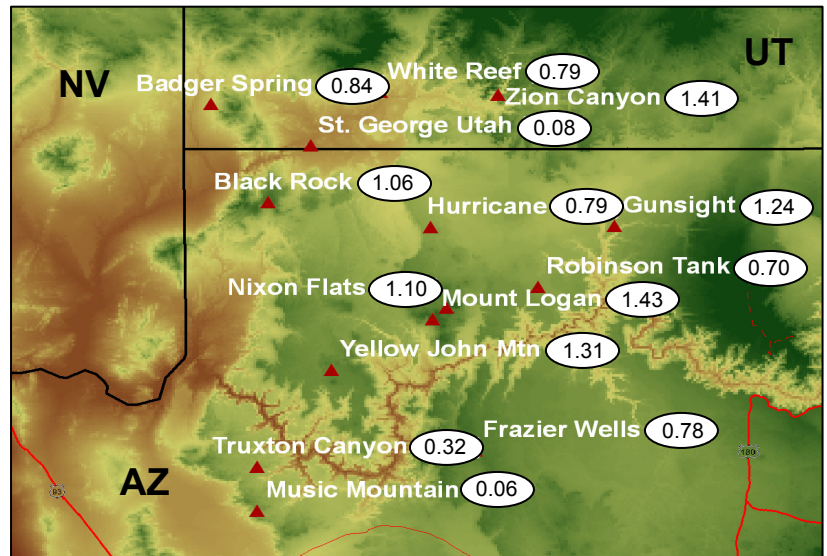
Near-average winter precipitation gave way to a relatively warm and dry spring across northwest Arizona. March was especially dry with much of region receiving less than 25% of normal precipitation for the month. Below-average precipitation and above-average temperatures since March has led to worsening short-term drought conditions as reflected in the decreasing PDSI values. The latest update of the National Drought Monitor Map (<http://www.drought.unl.edu/dm/monitor.html>) has much of northwest Arizona characterized as observing 'abnormally dry' conditions for this time of the year.

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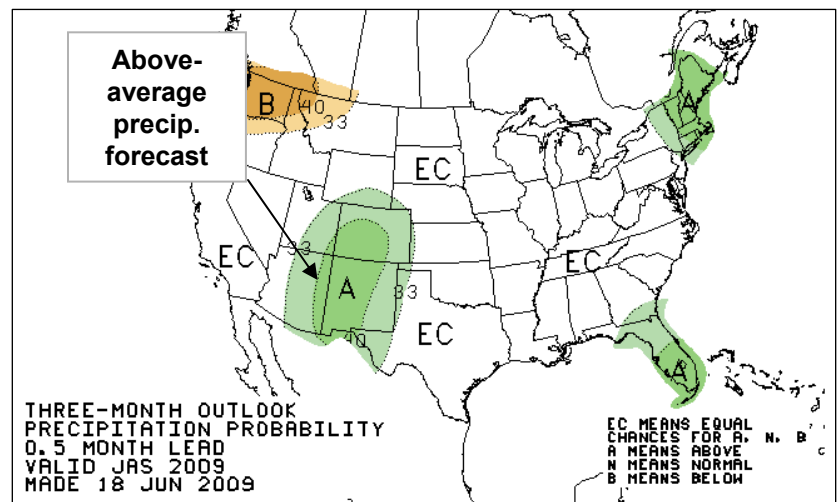
The SPI represents precipitation levels over different time-scales in standard deviation units. The time scales represent individual comparison periods (for example, 12-month time-scale represents total precip. over last 12 months compared to historical record of same period). The -1.5 SPI value at 3-months indicates dry conditions over this past spring (March-April-May) and the emergence of short-term drought conditions. Long-term drought conditions are also reflected in the negative SPI values out to 48-months.

Precipitation totals collected at Remote Automated Weather Sites (RAWS) across northwest Arizona and southwest Utah for the period of April through June were less than 1.5 inches with higher elevation and sites farther east observing the most rainfall. May was the driest month with most locations recording less than 0.5 inches. Badger Springs and St. George observed no May precipitation at all. Mt. Logan was the wettest location at 1.43 inches of rainfall with most falling in the month of June (0.92 inches). Music Mountain and St. George were the driest locations observing only 0.06 and 0.08 inches respectively during the spring of 2009 (April-June). Find more information and data at <http://raws.dri.edu>.



Total precipitation from April 1st – June 28th from RAWS sites. Precipitation listed in inches at each location. Data from <http://raws.dri.edu>

The July-August-September seasonal precipitation forecast from the NOAA Climate Prediction Center indicates a slightly increased chance (>33% relative to chances of average and above average precipitation) of above average precipitation across much of the Southwest U.S. Sea surface temperature patterns in the eastern Pacific and drought conditions in Texas and eastern New Mexico have supported the rapid development of a strong monsoon high pressure system that is expected to bring abundant moisture to the Southwest U.S. This may change through the summer with a developing El Niño event. Stay tuned to forecast updates each month at <http://www.cpc.noaa.gov>.



http://www.cpc.noaa.gov/products/predictions/long_range/lead01/off01_prpc.gif