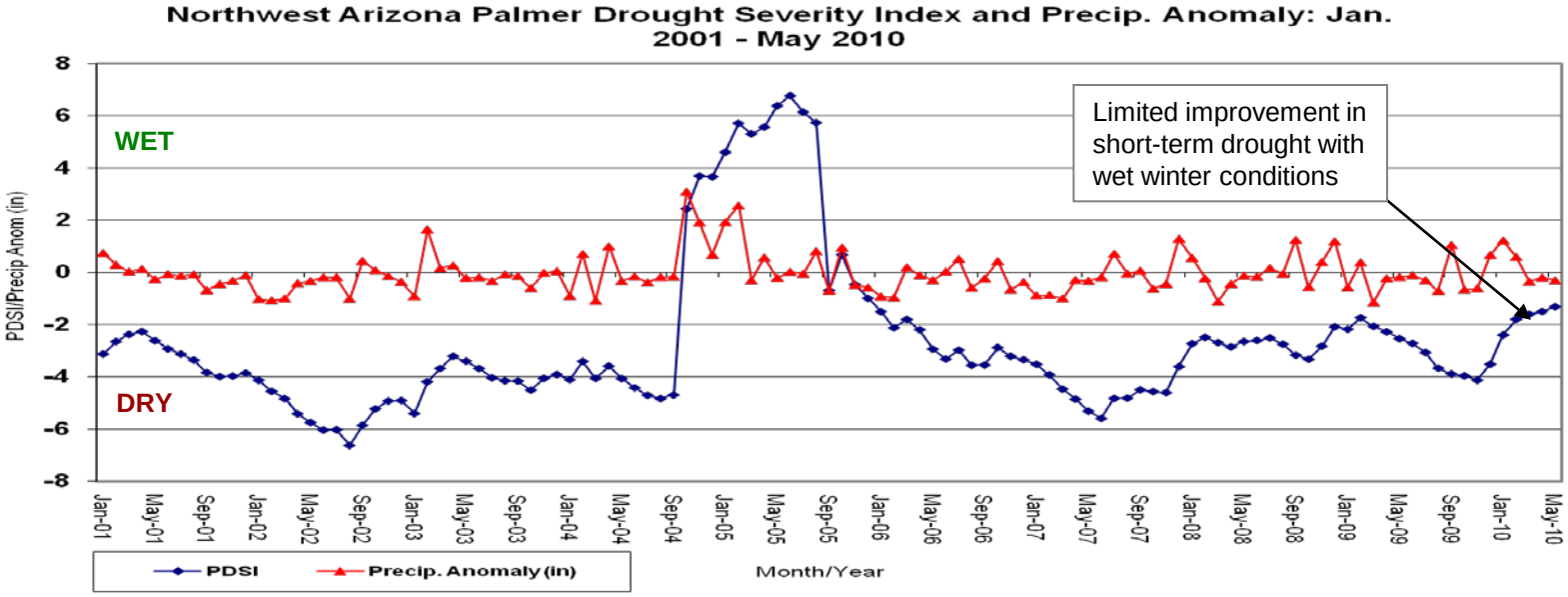
Northwest Arizona Climate Summary
Summer 2010

July 2, 2010 – Wet conditions this past winter helped provide some relief from the severe drought conditions that gripped northwest Arizona last fall. An El Niño event formed in the Pacific Ocean last fall gaining strength through the winter season. It began impacting the weather of the western U.S. in January in a big way, steering a parade of exceptionally strong winter storms through the Southwest. Several of these storms dumped 1 to 2 inches of precipitation across Mohave County during the month of January. Many Rainloggers (http://www.rainlog.org) in the Kingman area reported total January precipitation amounts in excess of three inches or 200% of average for the month. The parade of storms slowed in February, but enough precipitation fell across the area to meet the expected monthly average. Rainloggers again reported decent amounts of precipitation ranging from 1 to 2 inches for the month of February. Conditions turned much drier for the remainder of the winter and through the spring season to May. Late winter storms continued to move across northern Arizona, but with limited moisture to work with brought mostly wind rather than precipitation. This return to below-average precipitation levels through the spring slowed and ultimately limited the improvements in short-term drought conditions spurred on by the above-average winter precipitation. By June, Arizona's normal hot and dry conditions had returned, leaving northwest Arizona with areas of continued short-term drought conditions.

Last winter's El Niño event quickly subsided in April, yielding to the return of neutral conditions or near-average sea surface temperatures along the equatorial Pacific Ocean. Since May, though, cooler-than-average sea surface temperature patterns have been emerging in the eastern Pacific Ocean indicating the possible rapid switch to a La Niña event as early as this summer. This has led to the NOAA Climate Prediction Center in issuing a 'La Niña Watch' meaning that the conditions are right for an event to start in the next three months. A flip towards La Niña conditions could help enhance the transport of monsoon moisture into Arizona, but can be easily complicated by other factors. A stronger La Niña based forecast can be made for later this fall and the upcoming winter season. La Niña events have a strong tendency to promote a winter storm track through the Pacific Northwest, leaving the southwest with drier-than-average conditions. Stay tuned to forecast updates at http://www.cpc.noaa.gov.



Above-average precipitation in the December-February period of last winter help short-term drought conditions as reflected in the Palmer Drought Severity Index improve slightly. The improvement was limited because of the return to dry conditions in the spring. Precipitation was below-average in the March-May period which slowed the rebound in PDSI values indicating that short-term drought conditions continue to persist across northwest Arizona as reflected in recent updates to the U.S. Drought Monitor (http://www.drought.unl.edu/dm/monitor.html)

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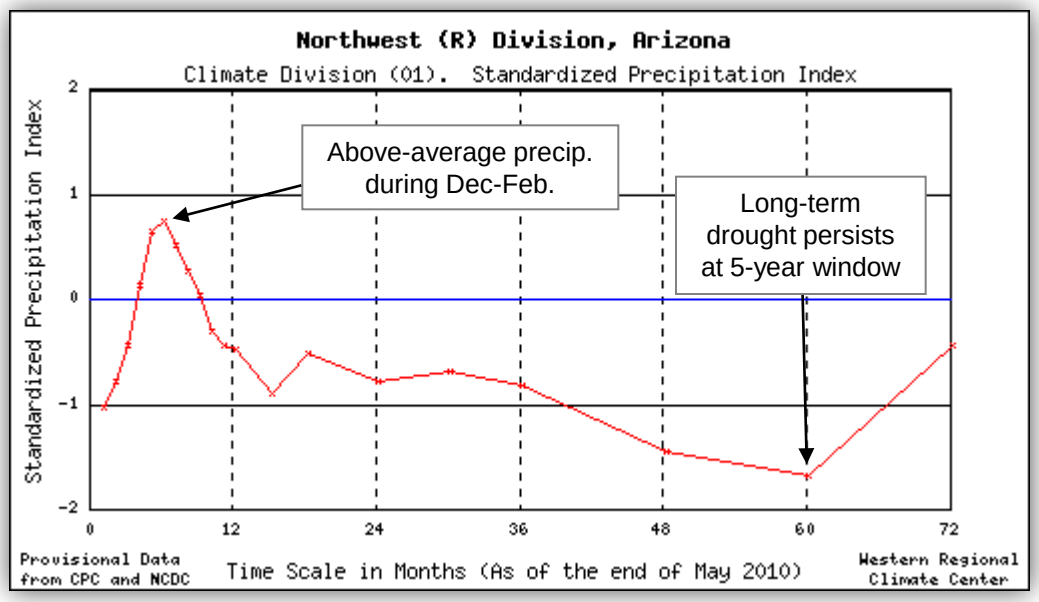
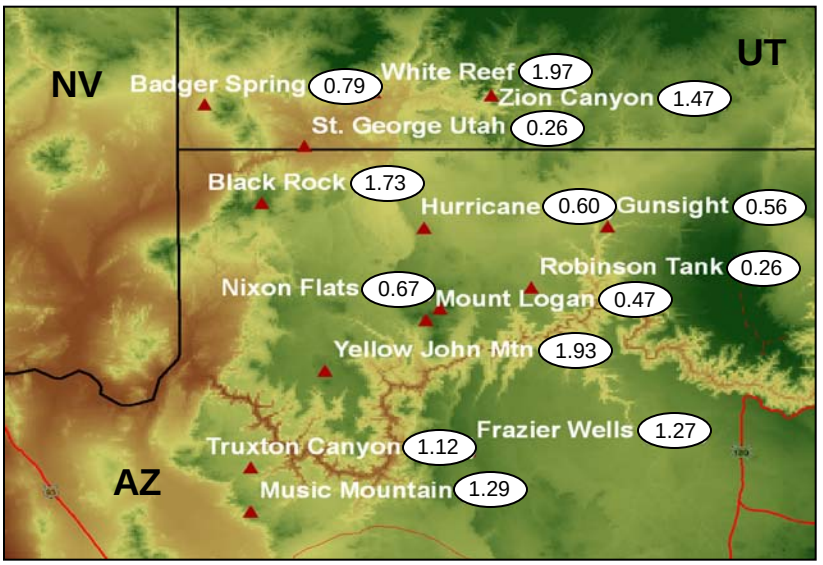


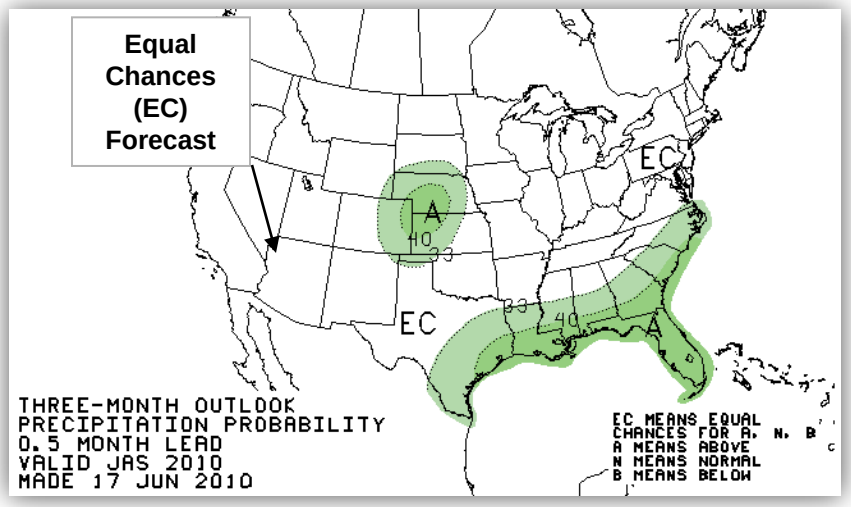
The SPI represents precipitation levels over different time-scales in standard deviation units. The time scales represent individual comparison periods (for example, 12-month time-scale represents total precip. over last 12 months compared to historical record of same period). SPI values climbed above zero in the 4-6 month window with the wet conditions this past winter and have since fallen below zero indicating below-average precipitation this past spring.

Precipitation totals collected at Remote Automated Weather Sites (RAWS) across northwest Arizona and southwest Utah for the period of April through June ranged from a quarter of an inch to almost 2 inches. St. George and Robinson Tank recorded the lowest values at 0.26" while the White Reef station in Utah recorded the highest precipitation amount at 1.97". Precipitation appears to have been spotty across the region with the several late winter storms that crossed the region. These values should be interpreted with caution since some of this precipitation most likely fell as snow. Precipitation gauges at RAWS sites do not accurately measure precipitation in the form of snow. (Find more information and data at http://raws.dri.edu).



Total precipitation from April–June 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 an equal chances of above, below or average precipitation for all of Arizona. This indicates that there is not a strong and clear forecast signal to use in shifting the odds towards either a wet or dry summer across the region. This is not an uncommon forecast situation during the summer as the impact of the El Niño-Southern Oscillation is relatively weak on the North American Monsoon System that bring moisture into Arizona. A La Niña event is forming in the Pacific Ocean at this time which may impact the upcoming fall and winter seasons, possibly bringing drier-than-average conditions.Stay tuned to forecast updates each month at http://www.cpc.noaa.gov.



http://www.cpc.noaa.gov/products/predictions/long_range/lead01/off01_prcp.gif