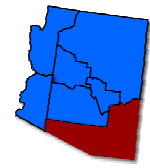


# Southeast Arizona Climate Summary

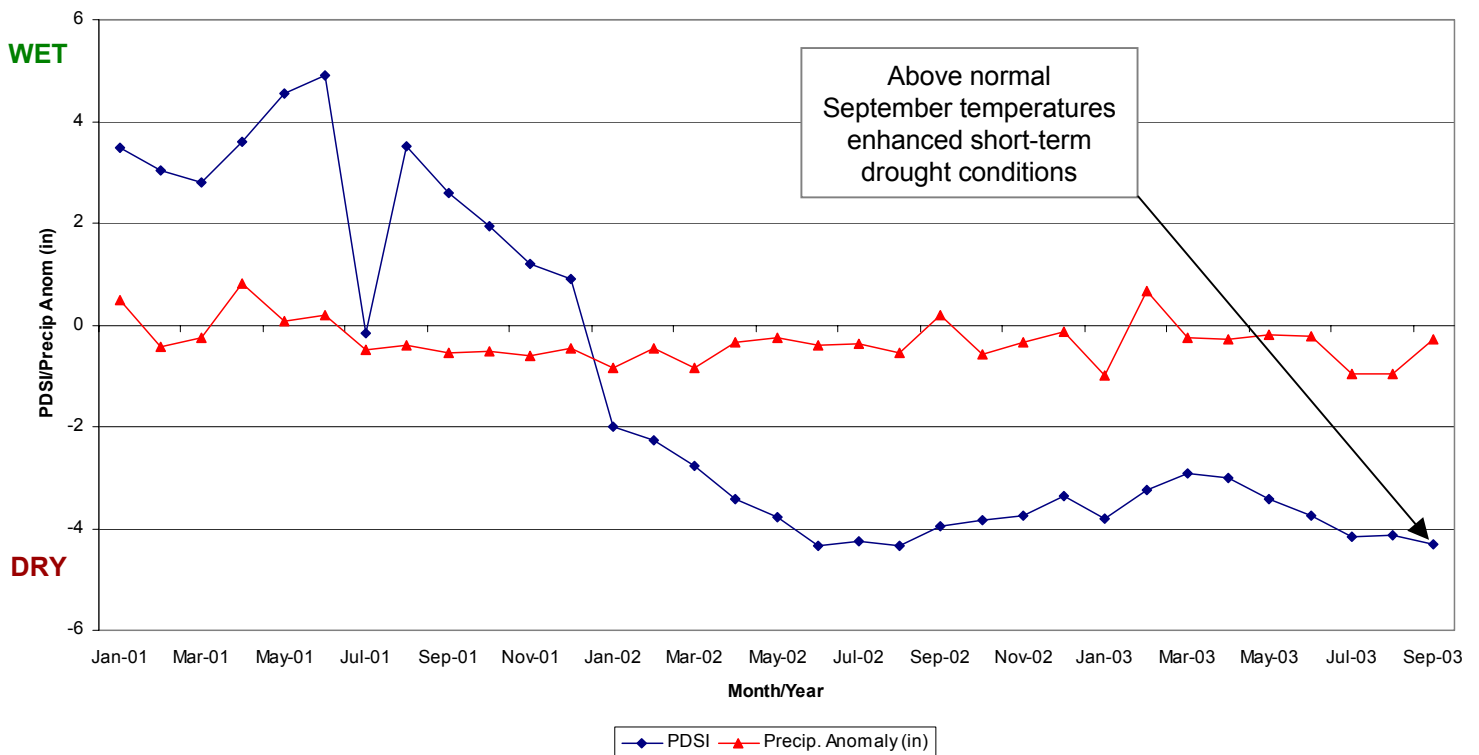
## Late Summer-Fall 2003



October 25, 2003 – The summer monsoon rains did little to alleviate ongoing drought conditions across southeast Arizona. Most areas received below average precipitation during July and August while experiencing record above normal temperatures. July 11<sup>th</sup> was the official monsoon start date in Tucson which was also the 5<sup>th</sup> latest start on record. Temperatures were above normal and precipitation totals were normal to slightly above normal during September. Decaying tropical storm Marty brought widespread rains to southern Arizona on September 24<sup>th</sup> that helped push monthly precipitation amounts to normal/above normal levels for areas primarily west of Tucson.

Sea surface temperatures in the equatorial Pacific are near normal at this time indicating ENSO-neutral conditions. La Nina conditions never developed as forecasted earlier this summer causing significant changes to the winter 2003-2004 forecasts for the southwest United States. Winter forecasts originally made earlier this summer suggested a higher probability of drier conditions with the impending La Nina. The lack of strong El Nino or La Nina conditions causes more uncertainty in the precipitation forecast for the southwest U.S. The current forecast is for near normal precipitation and above normal temperatures for the period of December 2003-February 2004. (More information at <http://www.noaanews.noaa.gov/stories2003/s2100.htm>)

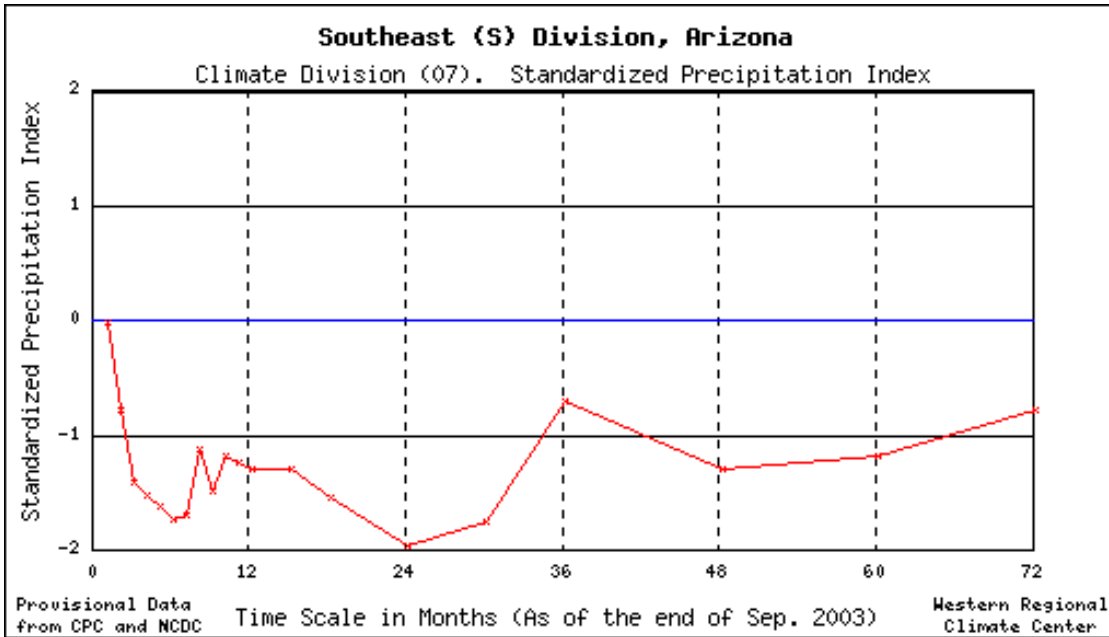
**Southeast Arizona Palmer Drought Severity Index and Precip. Anomaly: 2001-2003**



Below normal monsoon rainfall coupled with above normal temperatures has exacerbated drought conditions slightly according to PDSI values for southeast Arizona.



# Southeast Arizona Climate Summary – Spring/Summer 2003



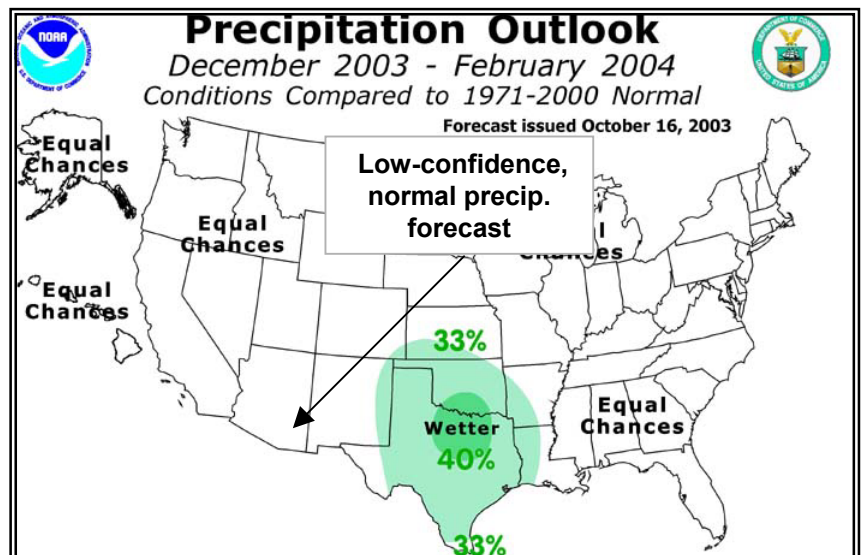
Rain from tropical storm Marty helped boost precipitation levels to near normal (SPI=0) for September. Precipitation deficits are still large at longer lags. The one-year precipitation deficit is more than one standard deviation below normal while the 2-year deficit is close to two standard deviations below normal depicting the long-term persistence of drought conditions.

August temperatures above normal at most locations across southeast AZ. The monsoon is typically very active during August, but most locations received below normal rainfall. Eastern locations were particularly hard hit with below normal rainfall. Safford and Chiricahua N.M. only received 20-30% of their normal August rainfall. Locations further west (Tucson) received close to normal August precipitation amounts.

Location	Aug. 2003 Avg. Temp (F)	Aug. Long-term Avg. Temp (F)	Aug. 2003 Total Precip(in.)	Aug. Long-term Avg. Precip (in)
Willcox	79.8	76.4	1.18"	2.61"
Safford	83.9	80.8	0.36"	1.65"
Chiricahua N.M.	75.7	72.5	1.36"	4.13"
Douglas	80.5	77.1	1.89"	3.20"
Tucson	86.3	84.7	2.04"	2.25"

(data from <http://www.wrh.noaa.gov/tucson> and <http://wrcc.dri.edu>)

The winter 03-04 forecast for the southwest United States calls for near normal precipitation and above normal temperatures. The confidence in this forecast is especially low for the precipitation forecast given the lack of strong El Nino or La Nina conditions in the equatorial Pacific. Confidence is higher for the temperature forecast given the strong trend in above normal temperatures over the past five years for all seasons over the southwest.



From: <http://www.noaanews.noaa.gov/stories2003/s2100.htm>