

Report on 90-day Weather Projection for the Northern Half of New Mexico

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Introduction:

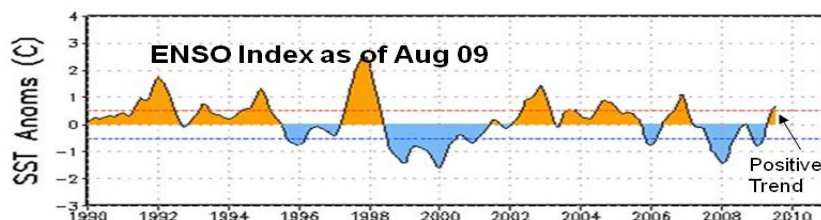
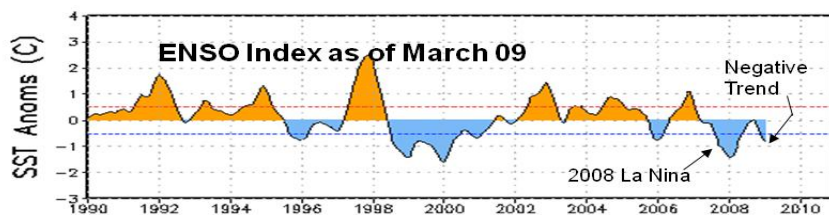
This 90-day weather forecast is for the northern half of New Mexico. The forecast area is bounded by the state borders on the north, west, and east, and Interstate 40 on the south.

The report contains a summary weather outlook for September through November (directly below), a review of the current El Nino Southern Oscillation (ENSO) condition, which is rapidly becoming an official El Nino, and an overview of current weather trends along with outlook maps for the next 90 days.

Summary, Ninety-day weather outlook for forecast area:

- *Atmospheric measures now indicate an El Nino condition has developed.* Climate models predict an official El Nino will be declared earlier than expected, perhaps by late fall.
- Long-range computer models are in reasonable agreement that an El Nino condition will persist throughout the winter and that precipitation in the forecast area will be above normal over the next six months.
- Precipitation throughout the forecast area during the past four weeks has been below average. Temperatures have been above normal in the same period. And the pros at the National Climatic Prediction Center are unsure of the underlying reason for it.
- The normal monsoon pattern was thwarted most of the summer by an abnormal high pressure center that institutionalized itself in the Four Corners region. It was an unexpected development because most climate models were predicting a wetter than normal summer due to the El Nino. Wrong!. And there is confusion among the pros as to exactly how or why the computer models were incorrect.

Review of Current El Nino Southern Oscillation Situation and Discussion:



The Historic Oceanic Nino Index, which is the official metric from which a La Nina or El Nino is declared, is at +0.7C, more positive than last month. Related climatic indicators reflect El Nino conditions throughout the

Pacific Ocean area. Based on current trends, it is developing into a moderate to strong event.

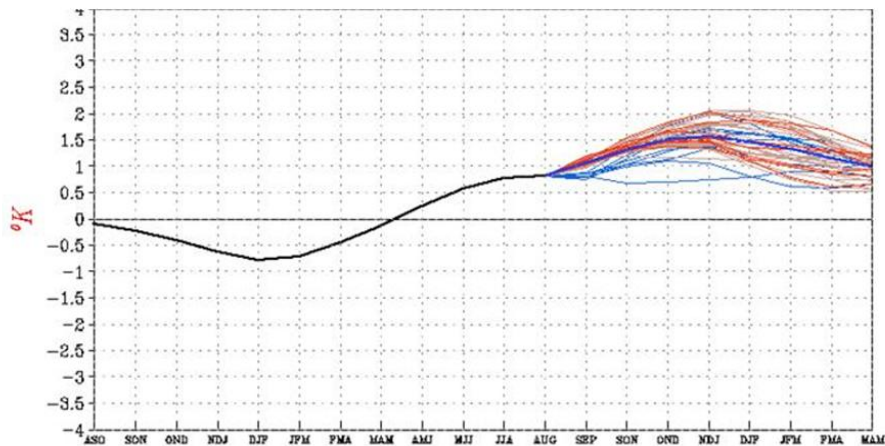
The graphic above shows how significantly the Nino Index has changed over the past six months. The change was about as dramatic as it ever gets.

All of the international ENSO models are now predicting that the El Nino event will last through next winter.

The National Climatic Prediction Center's Climate Forecast System model is one of the models used to predict ENSO and is included in the group of international models discussed above. It is one of the most optimistic in terms of the El Nino development. The graphic below (courtesy of NCEP) shows the predictions from the CFS model.

The CFS mode is run multiple times for the same time period with each run using different set of input assumptions. These multiple runs cover the range of expected variance in input conditions. Thus, there are a number of prediction lines instead of a single one. However, the solid line shows the average prediction of all the runs, which is what is used for the official prediction. Using the average or ensemble line, the predicted date of an official declaration of El Nino is noted (around November).

The Climate Forecasting Model's Prediction of El Nino Sea Surface Temperature Departures Through the Winter of 2010
(Heavy blue line shows the ensemble of predictions of various input scenarios)

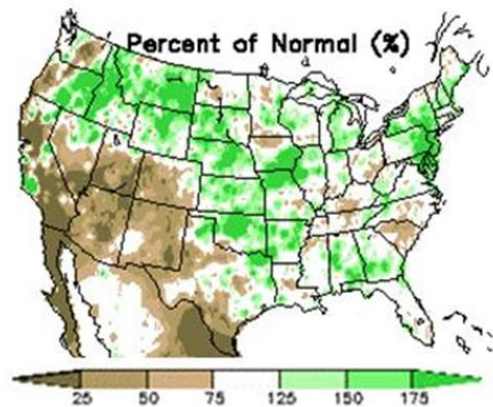


Last 30 days.

Generally precipitation in the forecast area has been well below normal. As I noted in the past few reports, a very abnormal high-pressure system developed over the Four Corners and it succeeded in truncating most of the normal monsoon flow of moisture into the state.

The forecast area was able to get some of the moisture that slid up and over NM into Colorado and was then ushered into the state from the north. But this moisture is not as rich as the direct one from the south. Thus precipitation during most of the summer was disappointingly

30-day (ending 1 Sep 2009) % of average precipitation



low. The map above shows the result. It is quite ugly for NM, but even worse for the southern parts of California, Nevada and Texas. Temperatures have been above normal because it gets hotter when there are no clouds to block the sun.

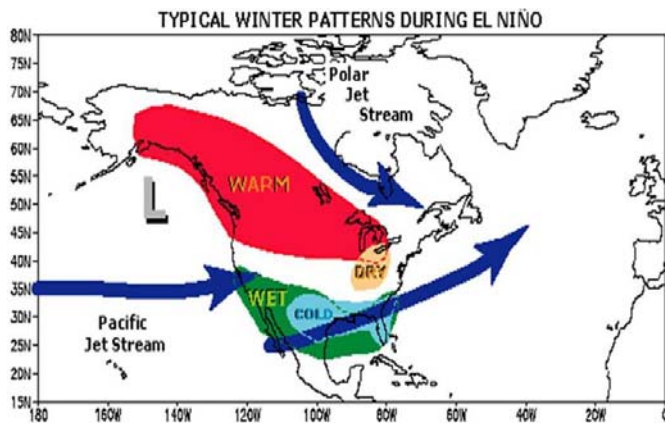
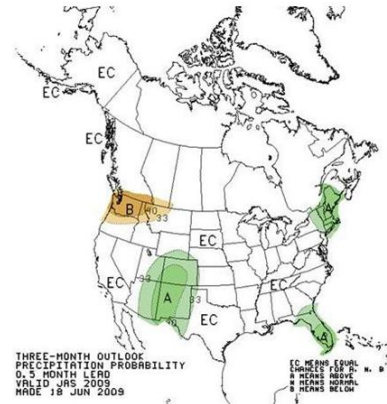
Predictive Trends

The predictions for NM for the summer of 2009 were completely wrong. To give you an idea of how badly the forecast was blown, look at the prediction map at the right and compare it to what actually happened in the map on the previous page. Back in late June, the models were predicting a very wet July through September. I will say no more; the graphics clearly speak for themselves.

Next 90 days.

Upcoming long-range precipitation/temperature projections should begin to reflect the expected impact of the El Nino.

National Climatic Prediction Center's 90-day Precipitation Outlook Issued in Late June, 09



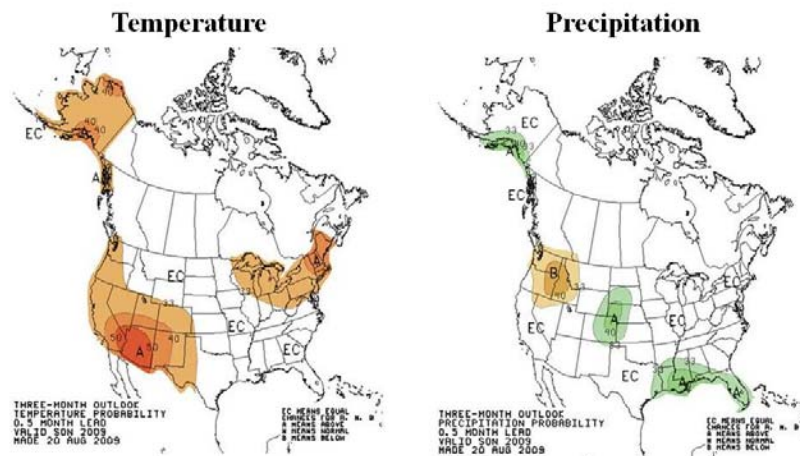
The graphic at left shows the typical winter weather patterns during El Nino conditions (from the National Climate Prediction Center).

As can be seen, NM is right in the middle of the area that would be expected to be wetter and colder than normal.

However, I want to remind my audience of the last official La Nina, in late 2007/early 2008, in

which there was supposed to be very dry conditions in the state. Instead, there was record snowfall in the forecast area. Climatologists are still puzzled over that one. With the backdrop of a blown forecast this summer, I need not sound warnings about taking these forecasts with healthy amounts

Outlook for Sep Through Nov 09



of skepticism and caution.

Given that, the pair of maps above show the forecast for the next 90 days. Normal precipitation is expected and temperatures will probably be above normal.

Based on historic El Nino trends, one would expect that the precipitation would be predicted to be above normal. But these maps signify that the forecast models are indicating something different. (A number of different models are run in order to develop these maps.) Some climatologists believe that it is still too early to expect the impact of a fully developed El Nino weather pattern to be realized in wet weather in the forecast area, especially given how persistent that blocking high was this summer. I will continually check for updates.

Recent Weather Trends

We have recently been receiving some beneficial rains in the forecast area. This is due to a combination of monsoon moisture advected from the south (the normal monsoon flow) and east and some increased cold front and storm activity, wintertime conditions that begin developing at this time of year. It is also a good sign for wet-weather fans that the blocking high pressure center is weakening. This, in my opinion, is a harbinger of a wetter than normal fall and perhaps a wet winter. We shall see.

If after reading some of the material above you have concluded that long-range modeling of weather is not too accurate, then you might surmise that my opinion, based on four decades of weather watching in NM, is probably as good as any of the official ones.

Next Report: Early October, 2009.