

Seasonal Outlook through September 2006

Klaus Wolter

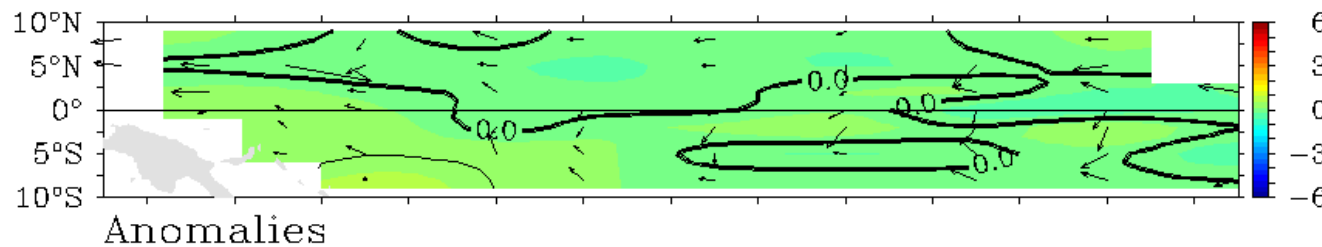
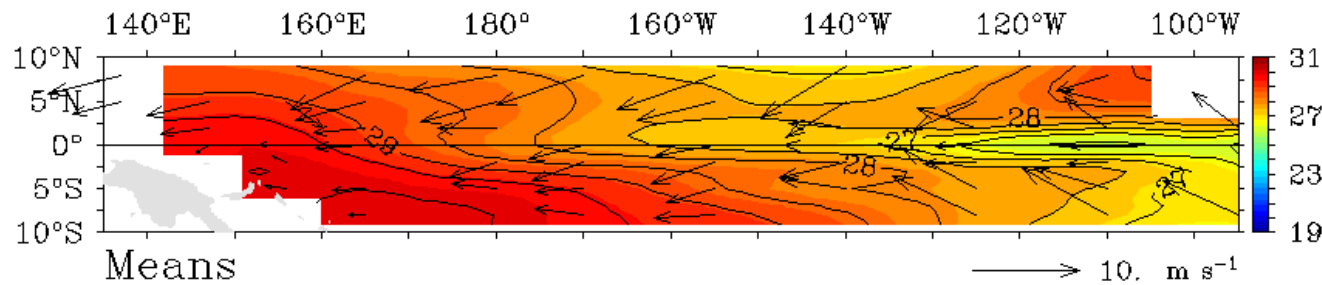
NOAA-ESRL Climate Diagnostics Branch

klaus.wolter@noaa.gov

<http://www.cdc.noaa.gov/~kew/SWcasts/>

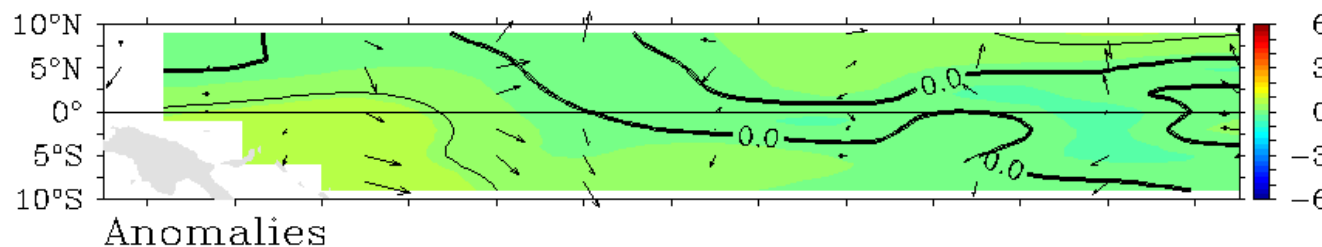
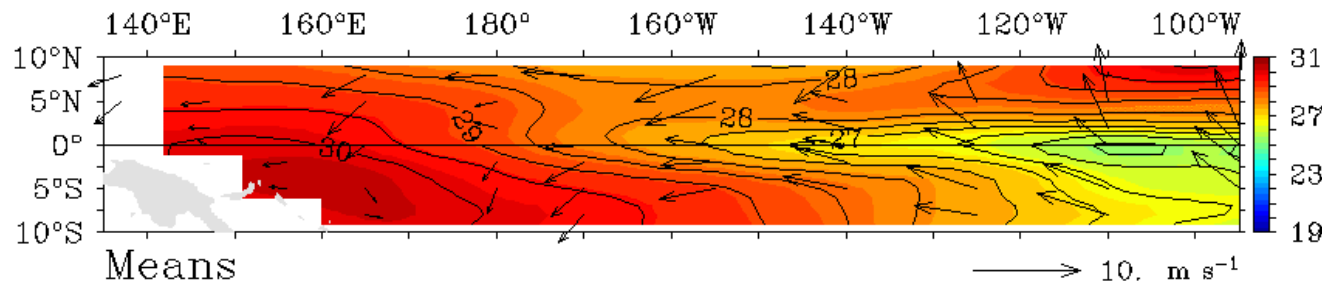
- **ENSO: La Niña down for the count?**
- **After a poor performance over last month, any hope for the (near) future?**
- **CPC forecasts for May-July/July-September 2006**
- **Experimental forecast guidance**

TAO/TRITON SST ($^{\circ}\text{C}$) and Winds (m s^{-1})



Five-Day Mean Ending on April 20 2006

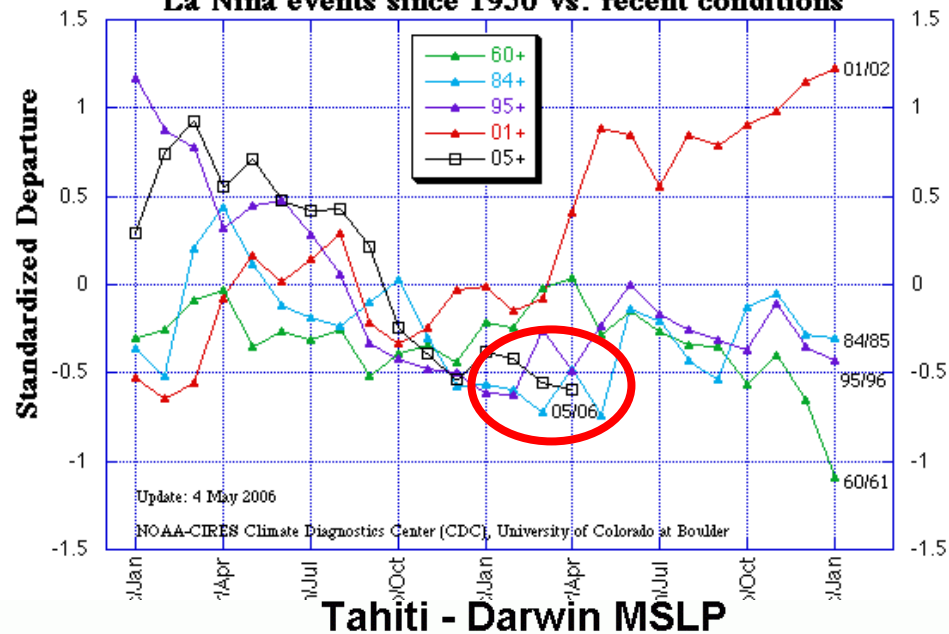
TAO/TRITON SST ($^{\circ}\text{C}$) and Winds (m s^{-1})



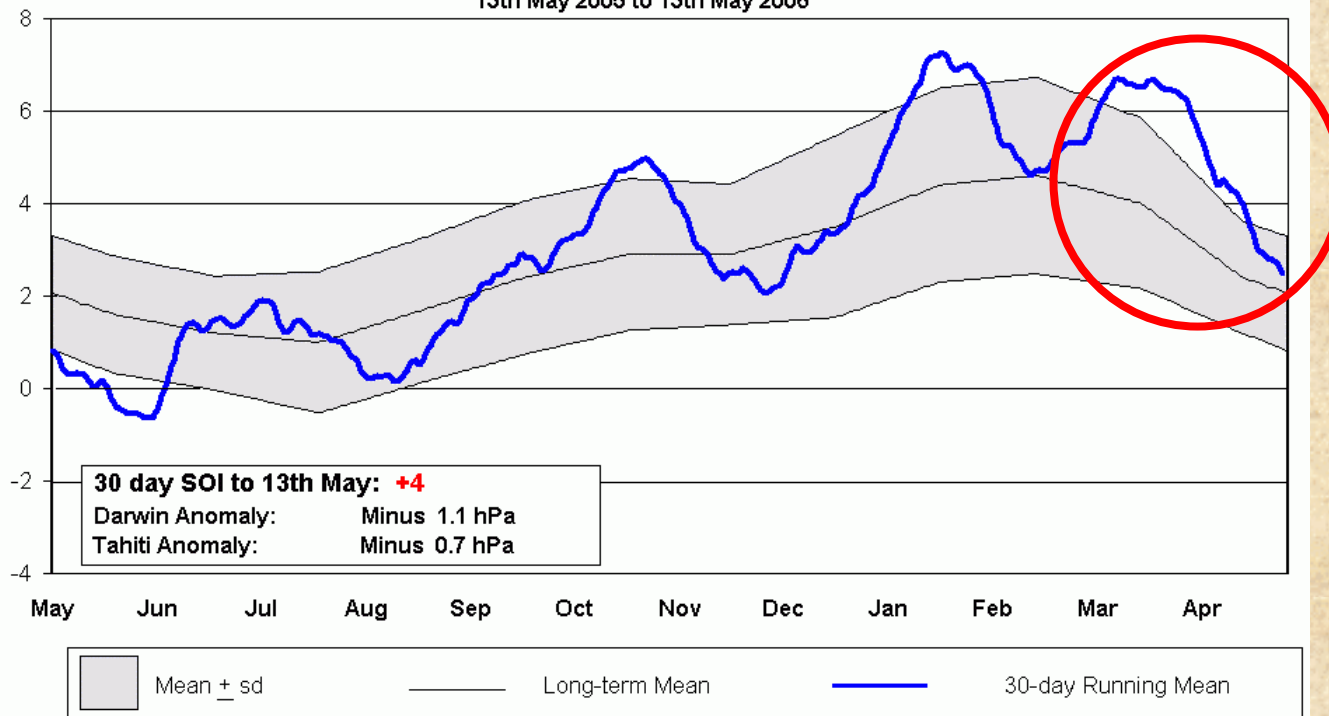
Five-Day Mean Ending on May 15 2006

Current state
of ENSO
(bottom)
compared to
April - based on
sea surface
temperatures
alone, this La
Niña is gone.
Even the trade
winds are
showing signs
of weakening,
finally.

Multivariate ENSO Index (MEI) for 4 weak-moderate La Niña events since 1950 vs. recent conditions

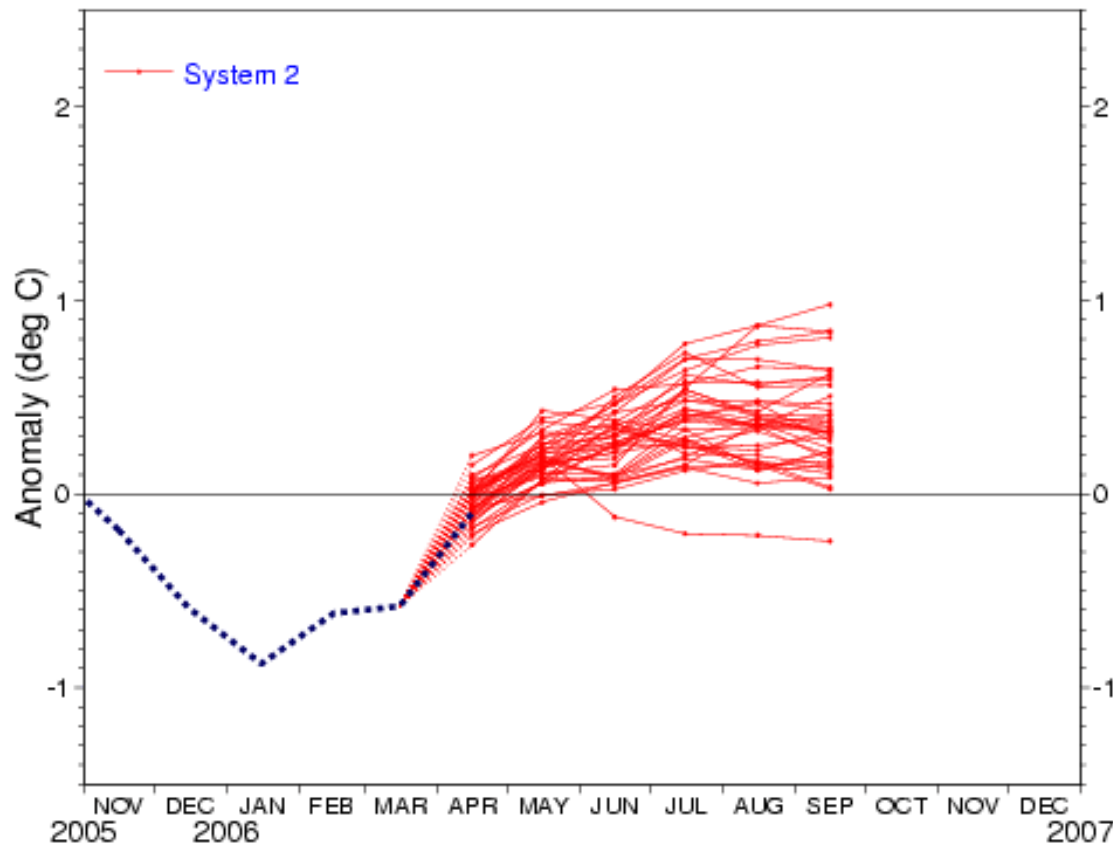


13th May 2005 to 13th May 2006



However, the most recent MEI values (March-April) are still trending down (top), mostly due to persistent atmospheric conditions (ref. Southern Oscillation Index, below) that seem to indicate that the atmosphere is taking its time to ‘forget’ our recent La Niña event.

NINO3.4 SST anomaly plume
ECMWF forecast from 1 Apr 2006
Monthly means plotted using NCEP adjusted OIv2 1971-2000 climatology

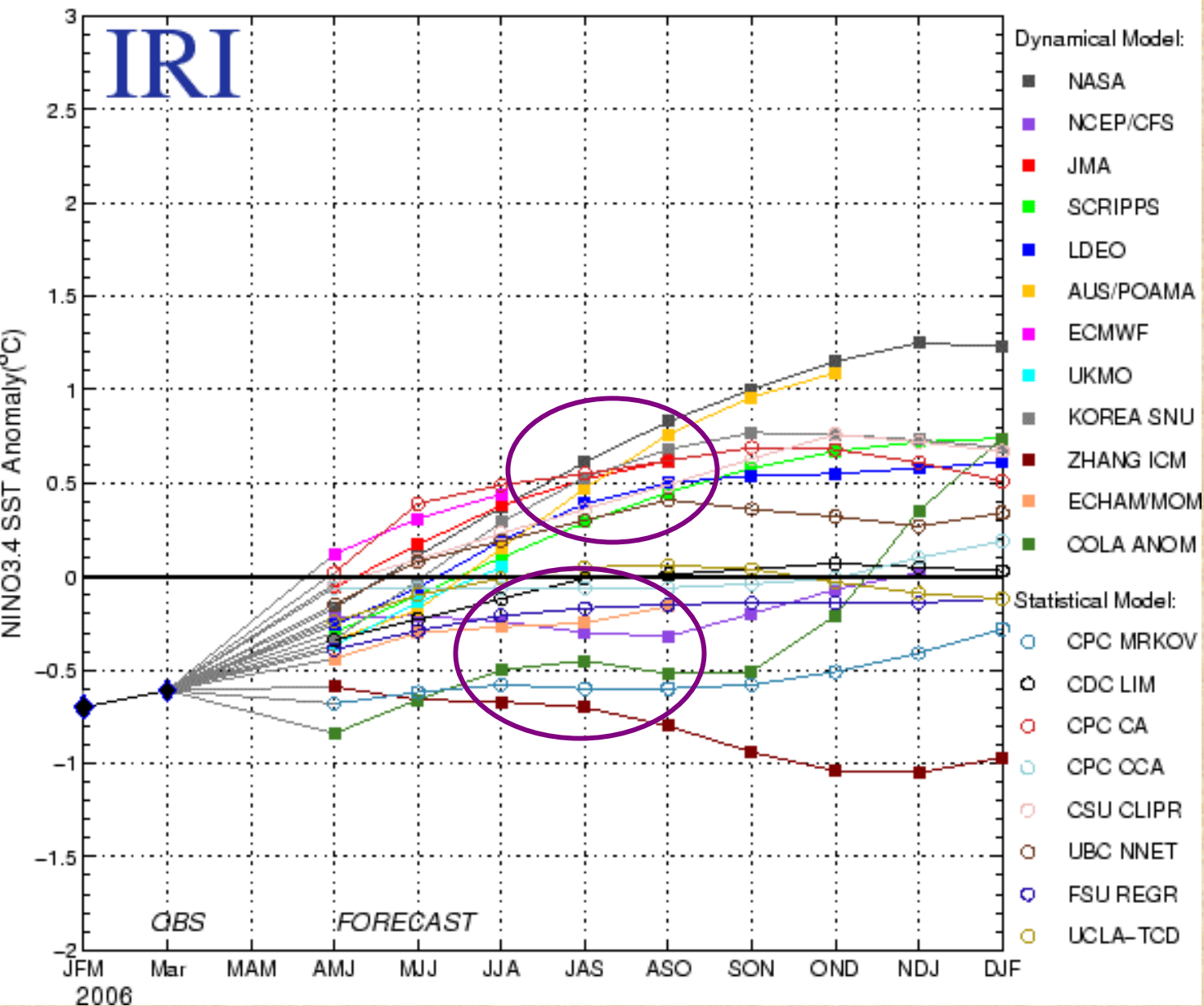


Forecast production date: 14 Apr 2006



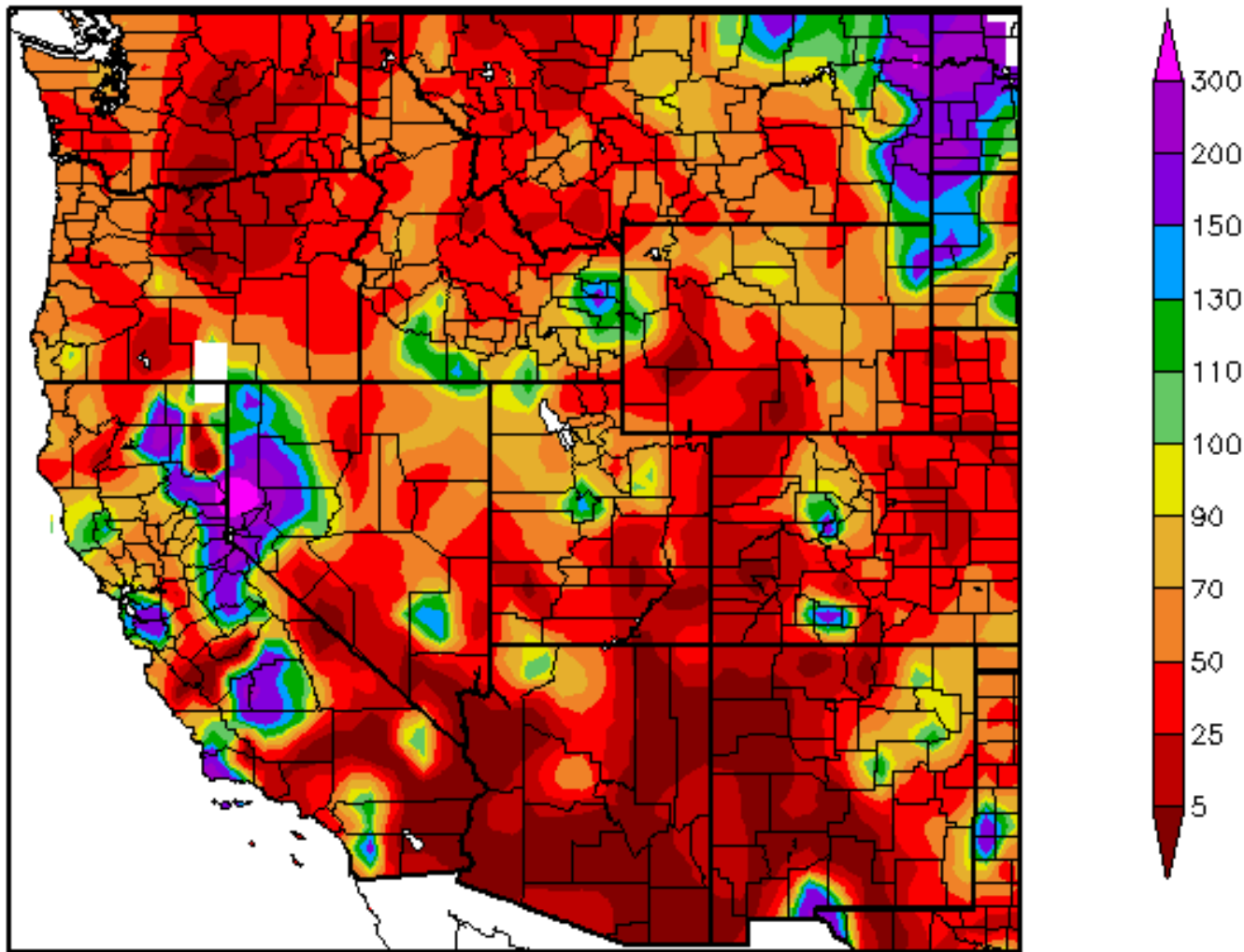
The European model's most recent forecast is adamant about a continued rebound into above-normal conditions (only one out of 50 'spaghetti scenarios' stays below normal). Since this time of year is known as the 'spring predictability barrier', we should remain cautious. Nevertheless, the increase in April SST was well anticipated.

Model Forecasts of ENSO from Apr 2006



ENSO forecasts from 12 numerical & 8 statistical forecast models: about half of the models push for a rapid transition towards El Niño conditions, while the other half slowly drift towards 'normal'.

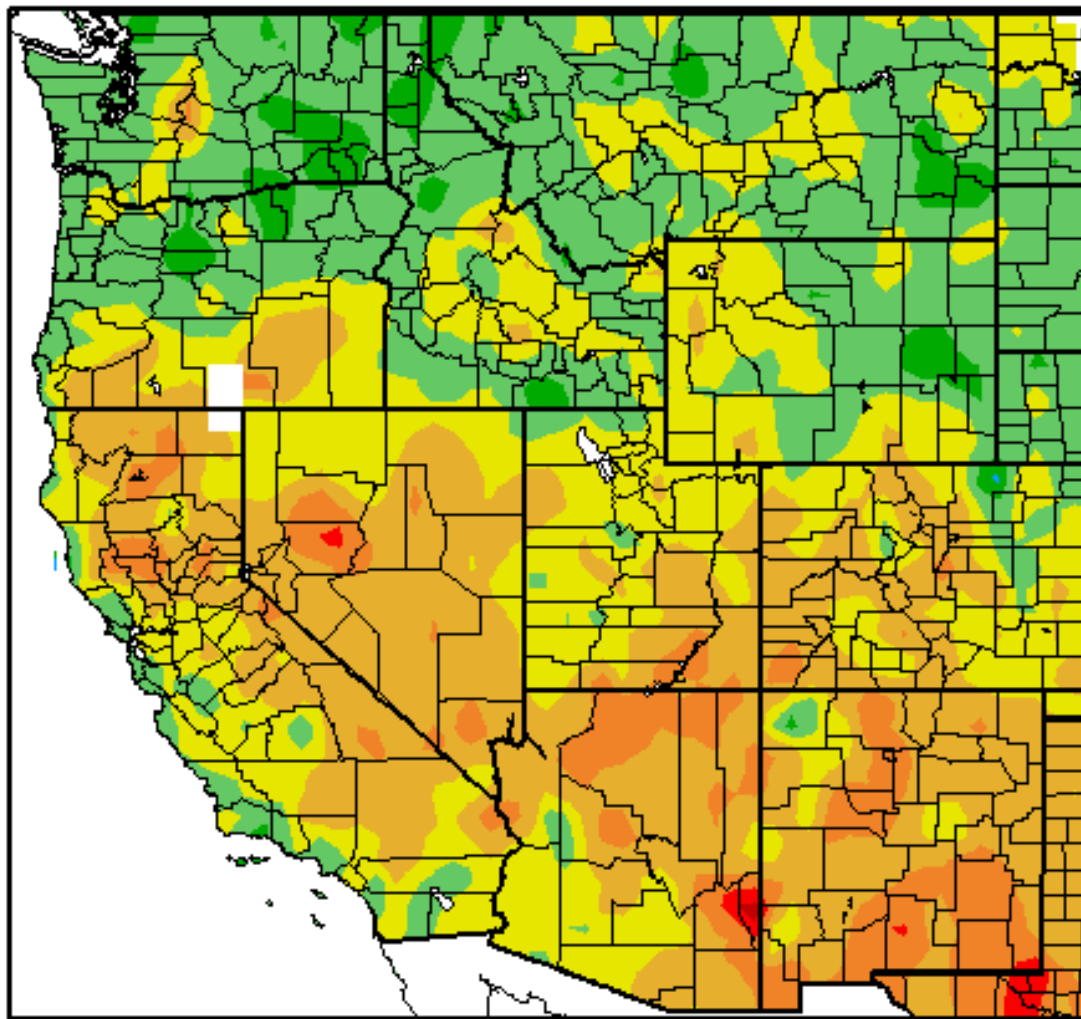
Percent of Normal Precipitation (%)
4/15/2006 – 5/14/2006



For the month since our last meeting, the storms that did come through in the last three weeks have not been delivering the moisture that is typical for spring, resulting in widespread shortfalls on both sides of the Divide.

Departure from Normal Temperature (F)

4/15/2006 – 5/14/2006

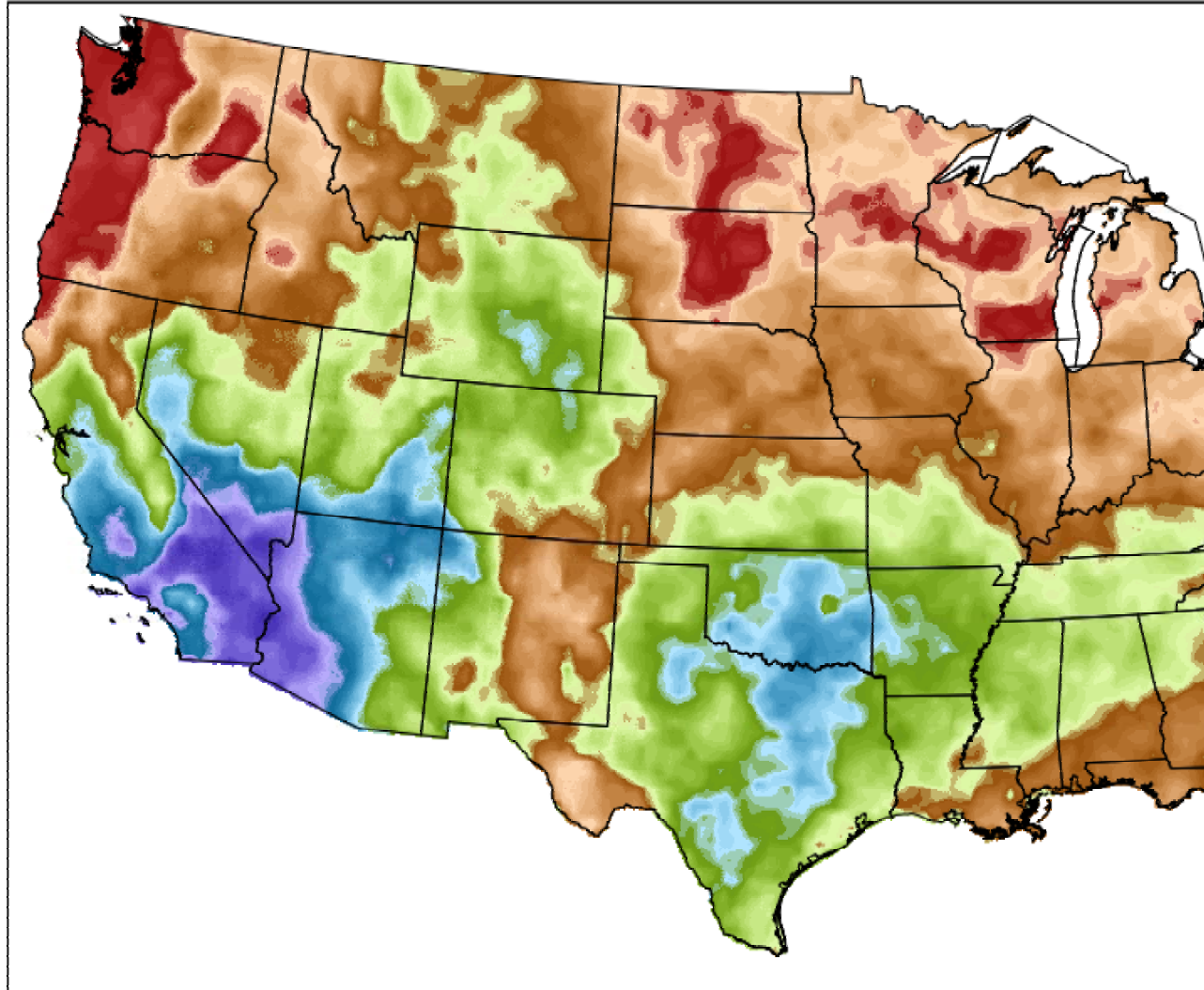


Some cool weather during the last month has helped to reduce the impact of this dry spell, but is definitely on its way out.

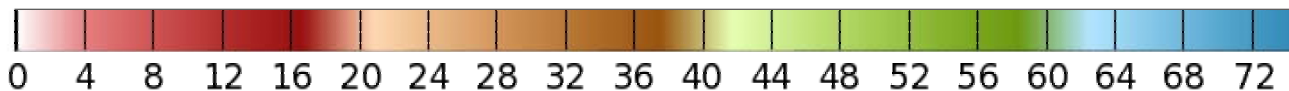
After a dismal April, is May going to 'deliver the goods'?

Analog Prob Precip < 33th Percentile

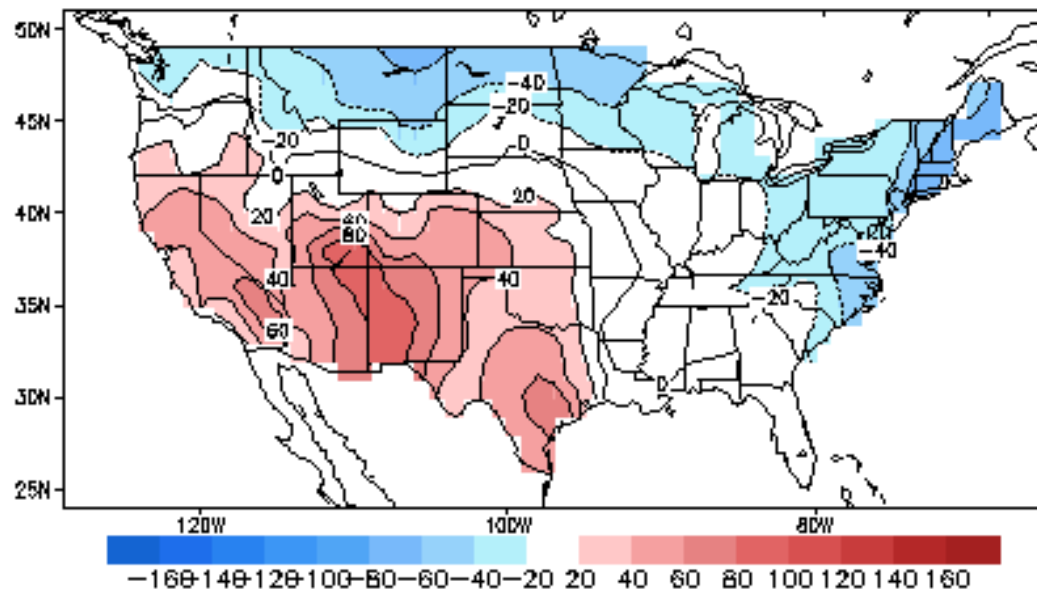
fcst from 2006051600 valid 2006052300-2006053000



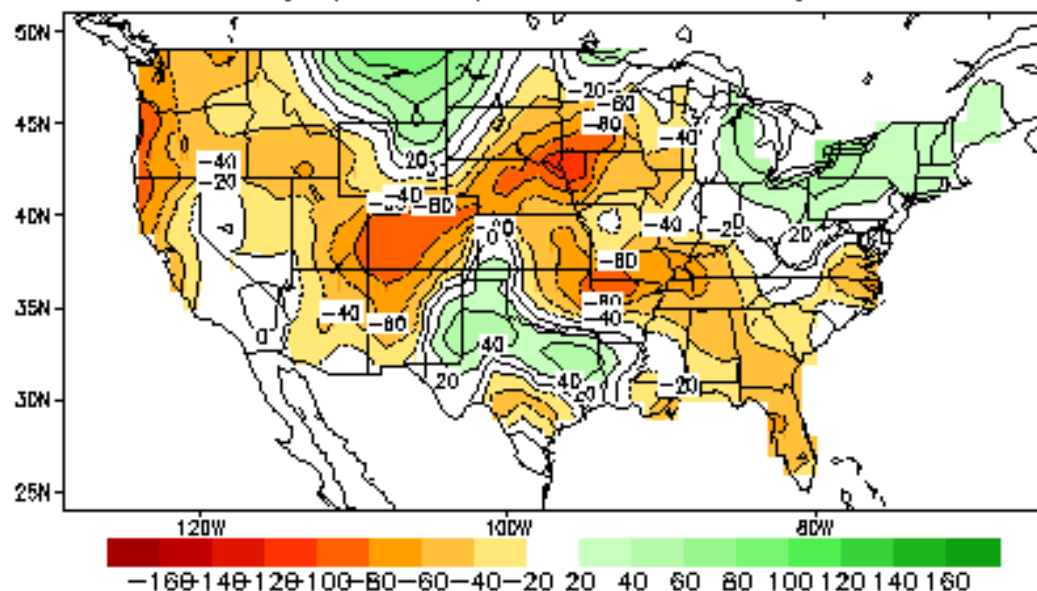
After a few anemic storms, the outlook for the remainder of May is not encouraging. Here is the down-scaled (5km resolution) version of the 'reforecast' forecast for 'Week 2'. The odds are almost twice as high as usual for moisture to total less than the lowest 1/3 of the distribution ($<0.5''$).



Lagged Averaged Temperature Outlook for MAY 2006
units: anomaly (sdX100), SM data ending at 20060502



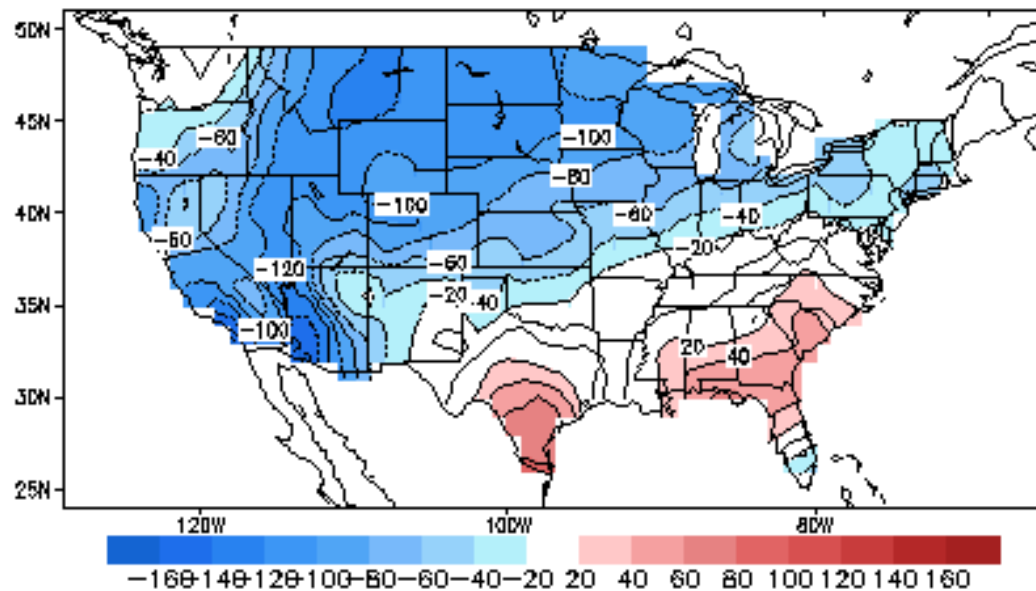
Lagged Averaged Precipitation Outlook for MAY 2006
units: anomaly (sdX100), SM data ending at 20060502



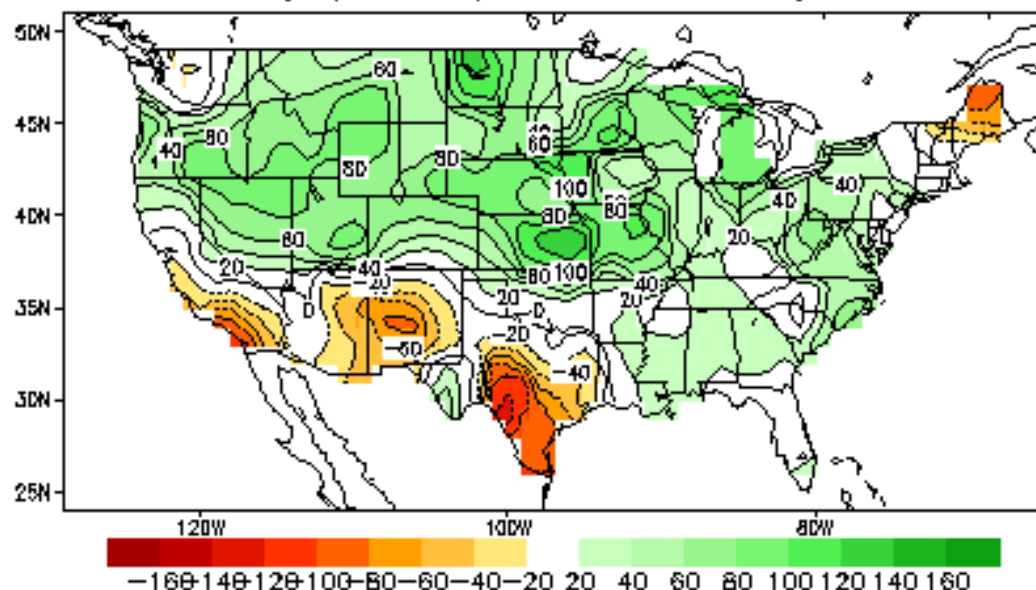
**After a dismal April,
is May going to
'deliver the 'goods'?**

Two weeks ago, the 'Constructed Analog' forecast for May called for a continued tilt towards dry conditions, along with above-average temperatures. The skill of this forecast tool is better for this time of year than almost any other time. This forecast from two weeks ago appears to be verifying "nicely".

Lagged Averaged Temperature Outlook for JUN 2006
units: anomaly (sdX100), SM data ending at 20060515



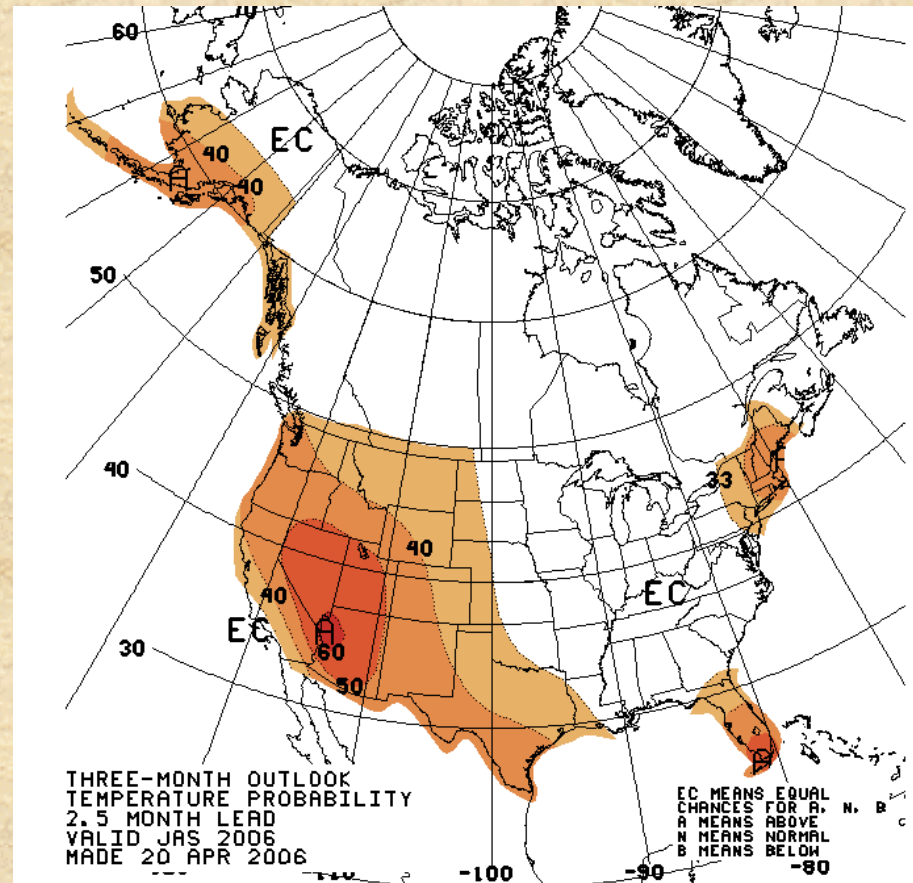
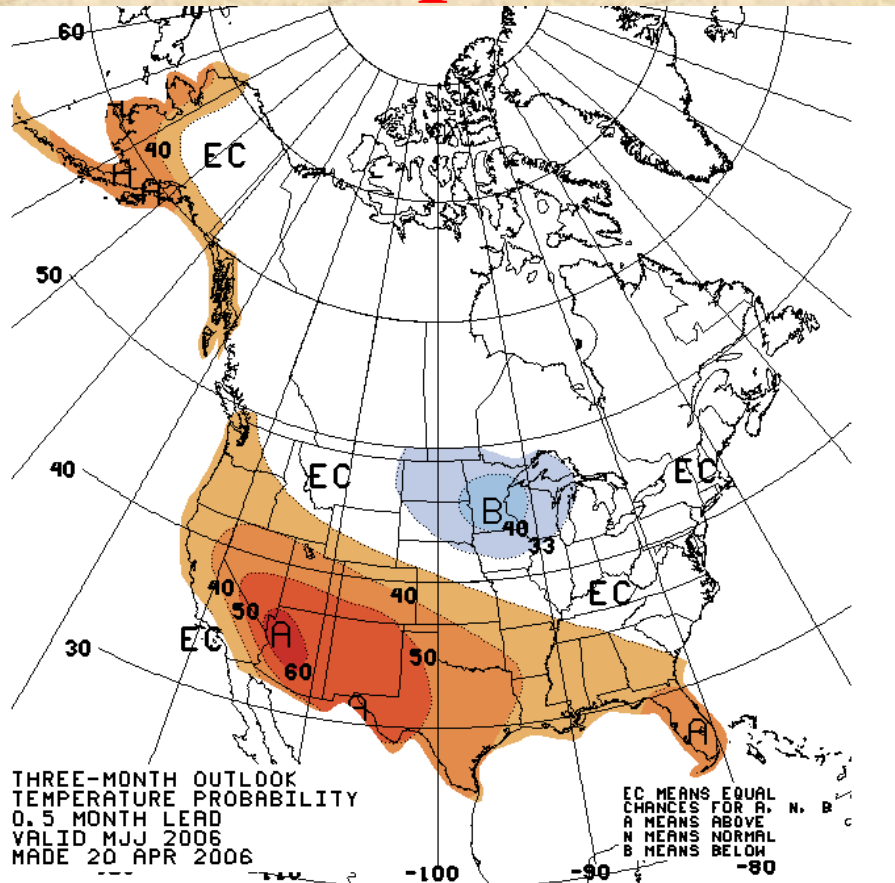
Lagged Averaged Precipitation Outlook for JUN 2006
units: anomaly (sdX100), SM data ending at 20060515



**After a dismal April,
is June going to
'deliver the 'goods'?**

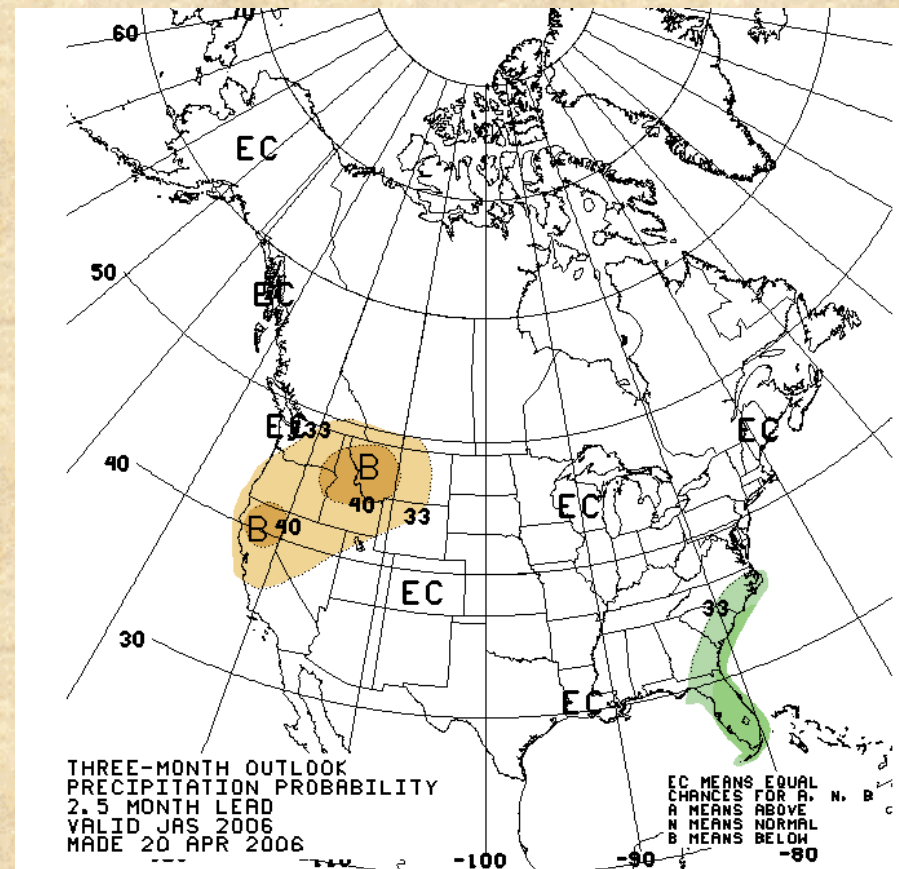
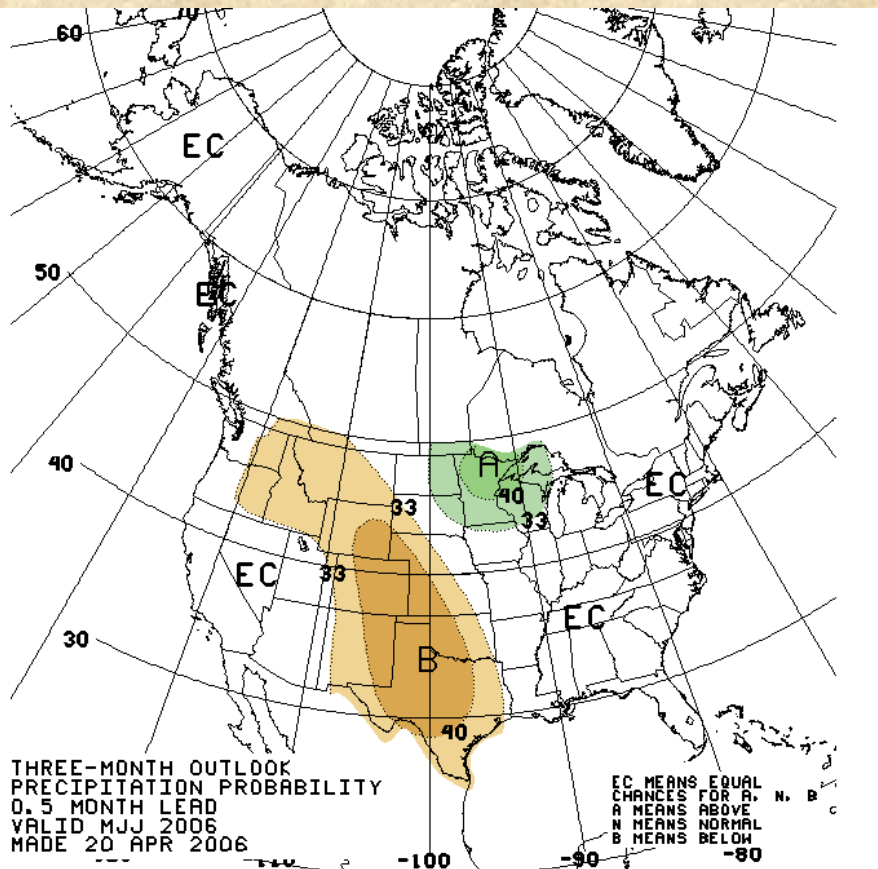
The 'Constructed
Analog' forecast for June
calls for a switch to
cooler and wetter weather
that is supported by
decent historic skill for
Wyoming (less for
Colorado).

Temperature Forecasts (CPC)



According to CPC's official forecasts, May-July 2006 (left) and July-September 2006 (right) are expected to be more likely to be on the warm side of the 1971-2000 climate normals over much of the Western and Southern U.S. This includes all of Colorado, although our trend-based odds not as overwhelming as in Arizona.

Precipitation Forecasts (CPC)

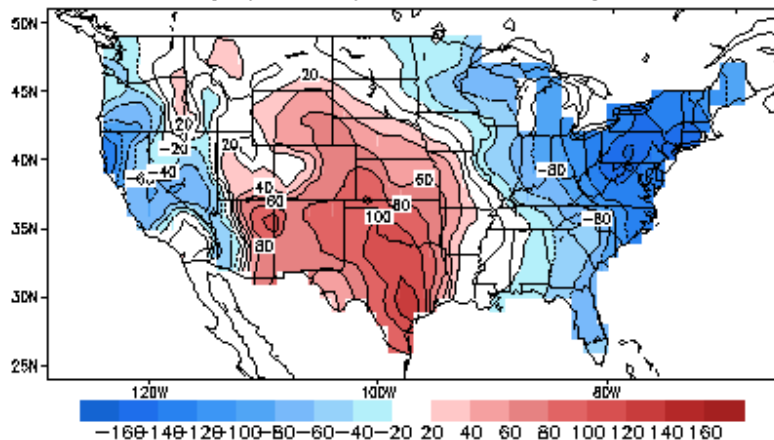


CPC precipitation forecasts are tilted towards dryness in early summer (left), and “EC” (“we don’t know”) for late summer.

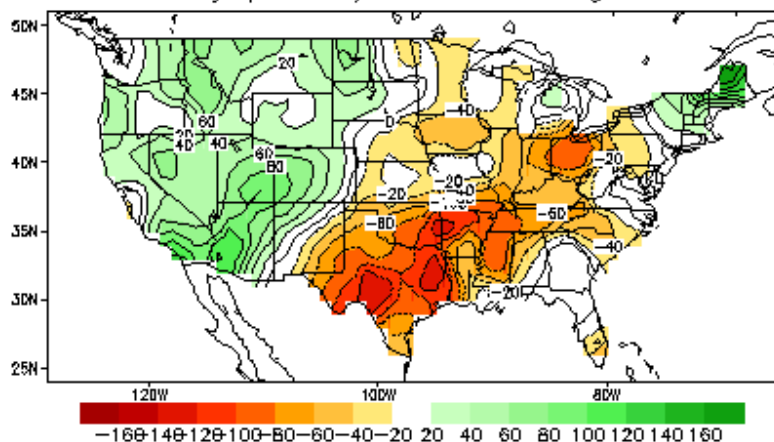
Source (for CPC forecasts): <http://www.cpc.ncep.noaa.gov/products/forecasts/>

Constructed Analog Forecasts (CPC)

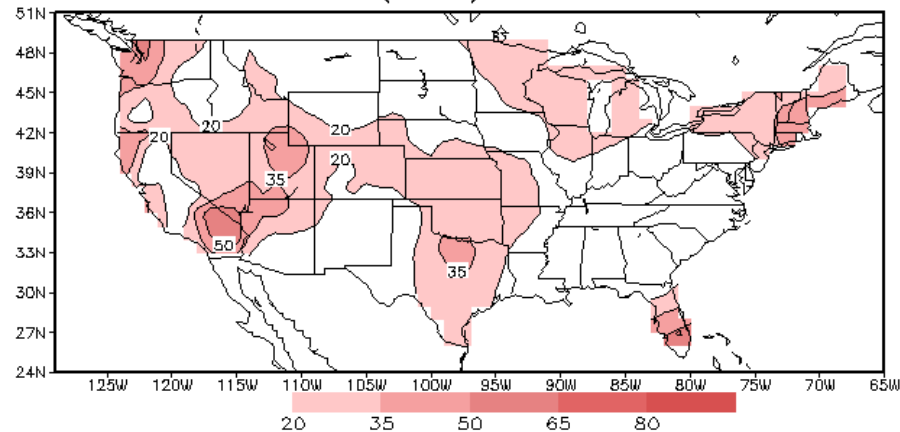
Lagged Averaged Temperature Outlook for JAS 2006
units: anomaly (sdX100), SM data ending at 20060515



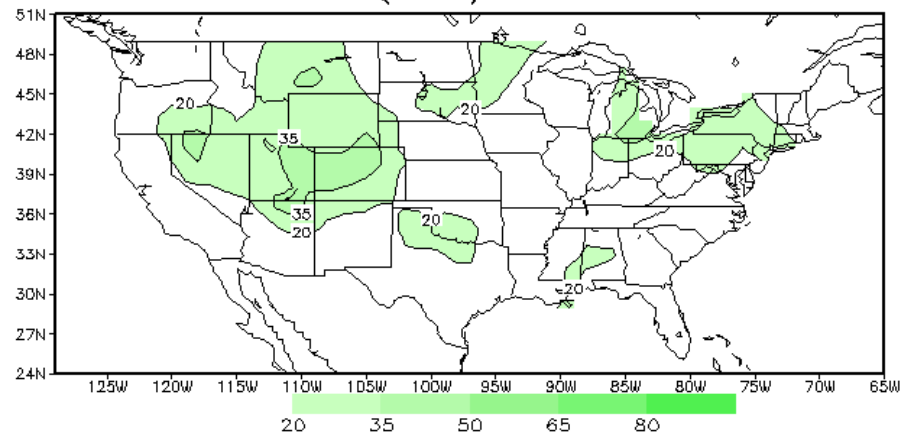
Lagged Averaged Precipitation Outlook for JAS 2006
units: anomaly (sdX100), SM data ending at 20060515



lead 2 skill of temperature CAS forecast for JAS
units: correlation (X100) based on 1981-2004



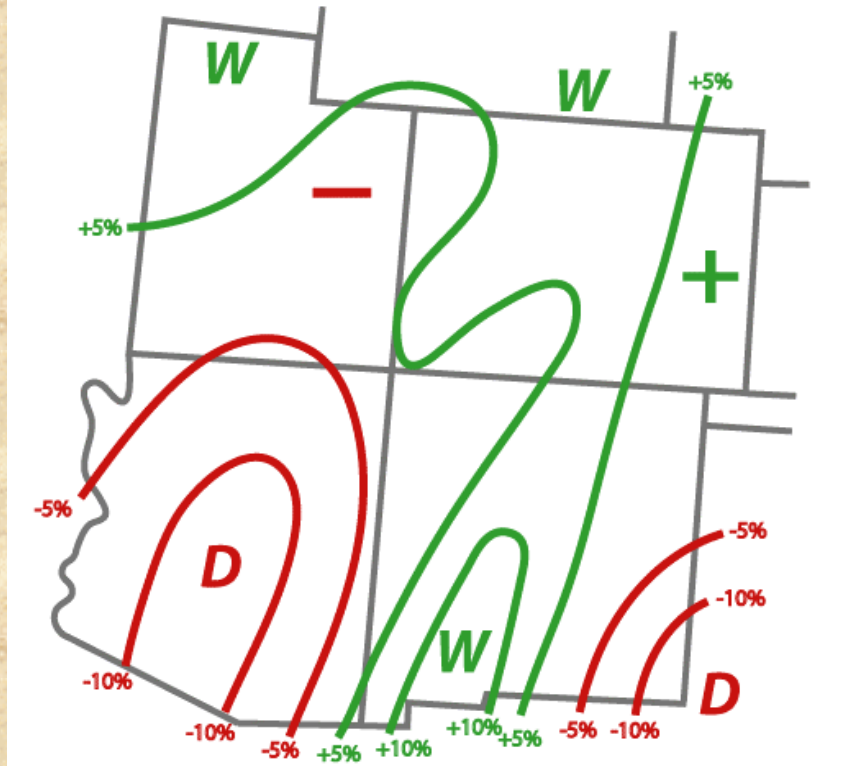
lead 2 skill of precipitation CAS forecast for JAS
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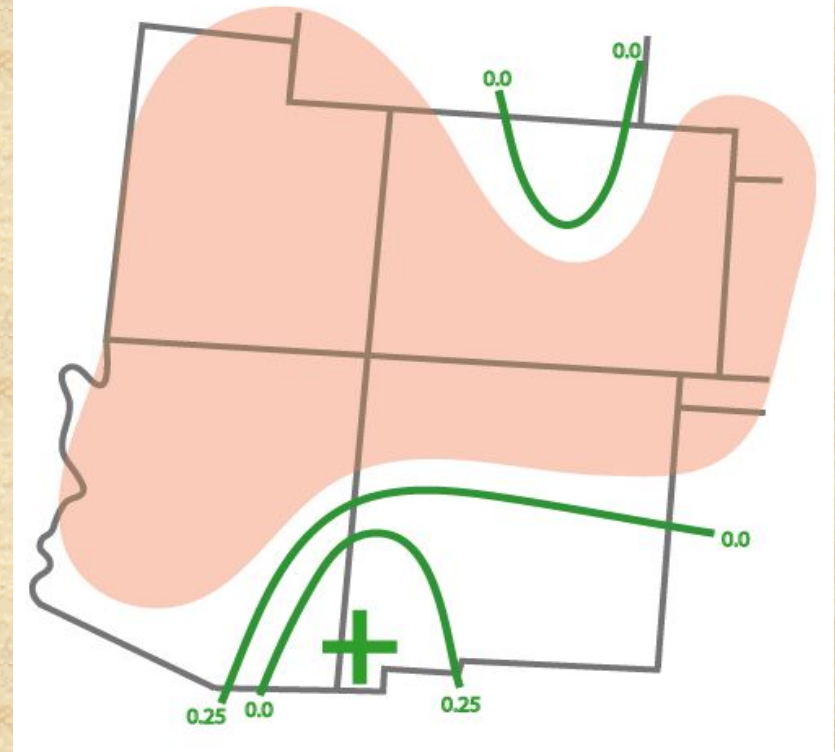
According to 'Constructed Analog' forecasts from CPC, late summer (left) combines warmer -than-average temperatures with an enhanced monsoon. At this lead-time, the skill for the precipitation forecast in Colorado is surprisingly good.

Experimental CDC “Forecast Guidance”

EXPERIMENTAL CDC PRECIPITATION FORECAST GUIDANCE
JUL-SEP 2006 (issued April 5, 2006)



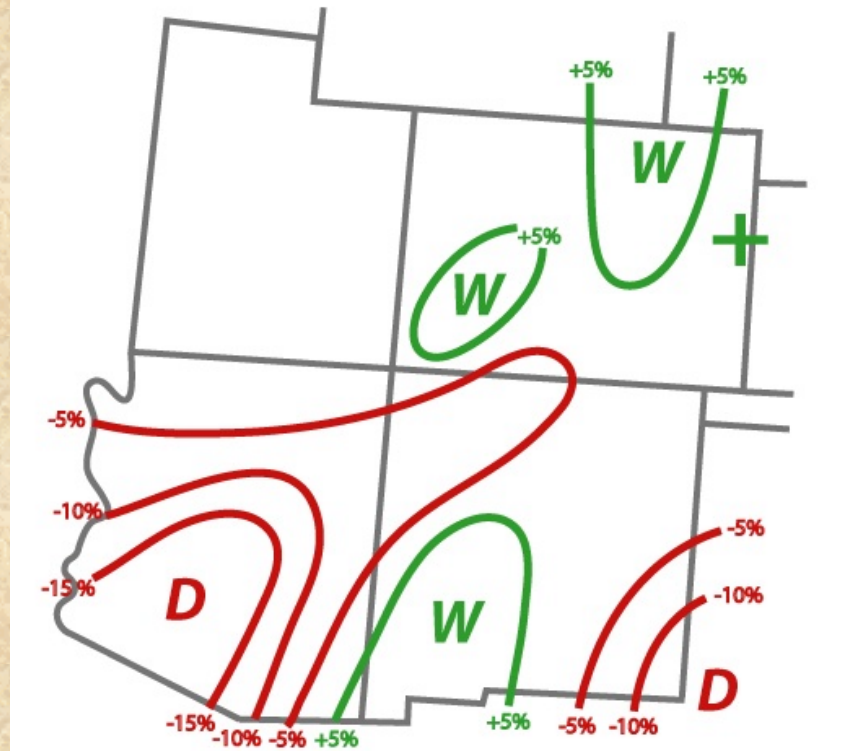
EXPERIMENTAL CDC FORECAST SKILL
FOR JAS PRECIPITATION FORECASTS
(issued in March 2000 - 2004)



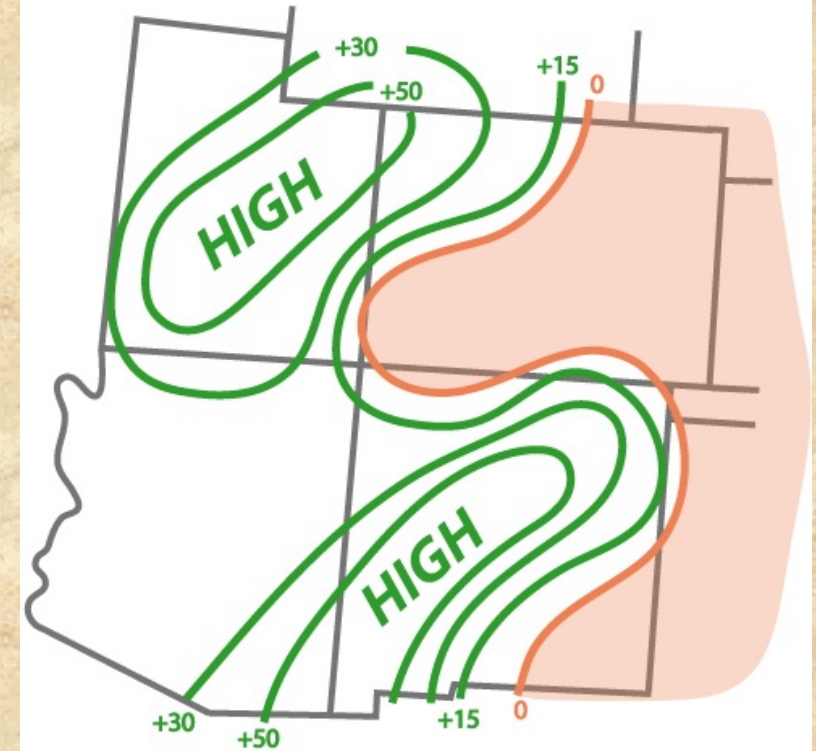
My first forecast of the summer monsoon (left) last month was not supported by much historic skill, except over north-central Colorado (and southern NM). Nevertheless, it was good to see some green on the map (after my updated April-June forecast that was towards dry conditions).

Experimental CDC “Forecast Guidance”

EXPERIMENTAL CDC PRECIPITATION FORECAST GUIDANCE
JUL-SEP 2006 (issued May 11, 2006)



EXPERIMENTAL CDC PRECIPITATION FORECAST SKILL
JUL-SEP 2000-2005 (Lead: 1.5 Months)



My updated forecast of the summer monsoon (left) maintains a positive tilt of the odds for Colorado, supported by decent skill in the northwestern part of the state (and very high skill in Utah, where the forecast is neutral, and southwestern NM where it is wet). Updated web page by Friday!

Source: klaus.wolter@noaa.gov;

<http://www.cdc.noaa.gov/people/klaus.wolter/SWcasts/>