

Seasonal Outlook for July-December '04

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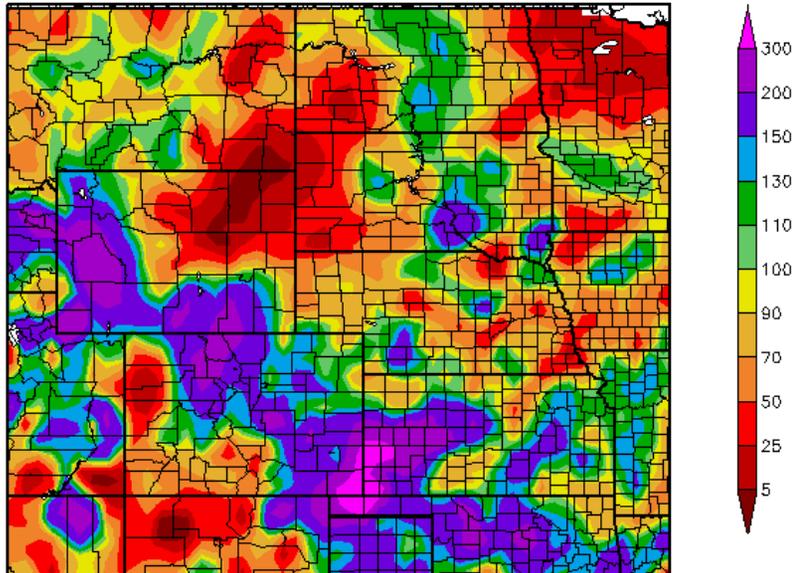
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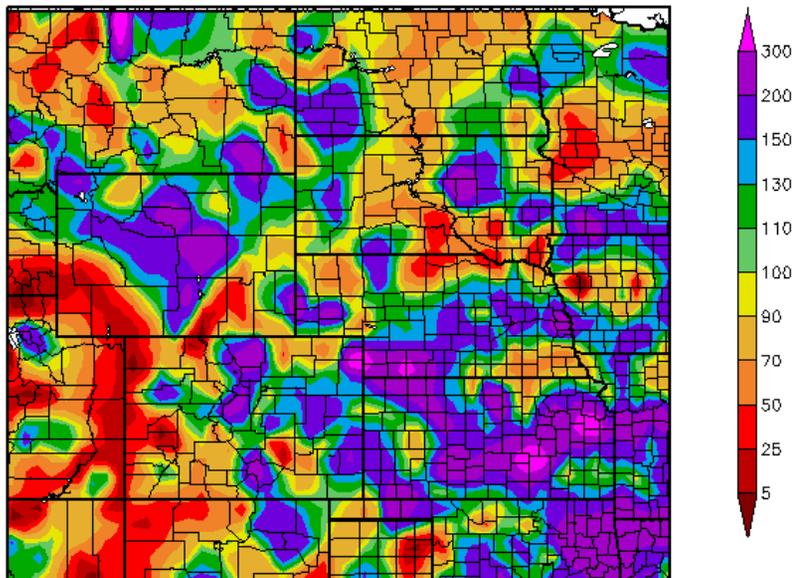
<http://www.cdc.noaa.gov/~kew/SWcasts/>

- **Recent climate anomalies & forecast verifications**
- **ENSO: Status and Prospects**
- **CPC forecasts for August-December 2004**
- **Experimental forecasts (JUL-DEC 2004)**
- **Executive Summary**

Percent of Normal Precipitation (%)
6/1 - 6/30/2004



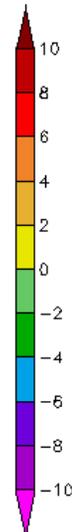
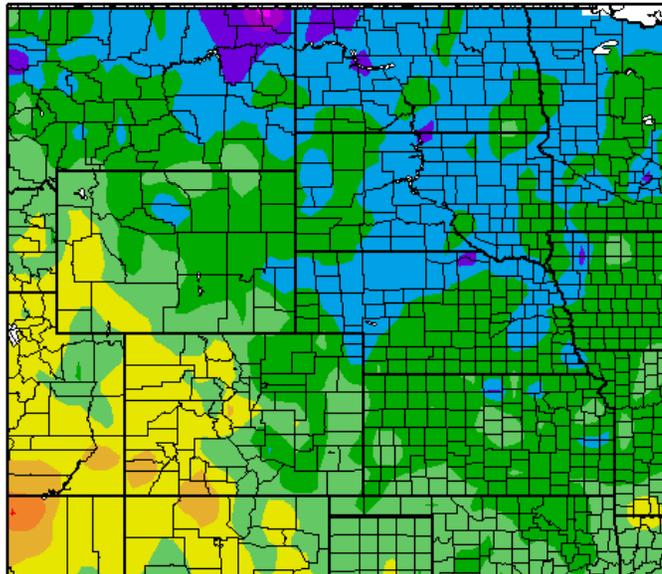
Percent of Normal Precipitation (%)
7/1/2004 - 7/25/2004



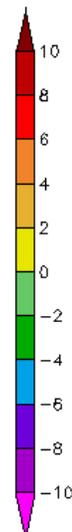
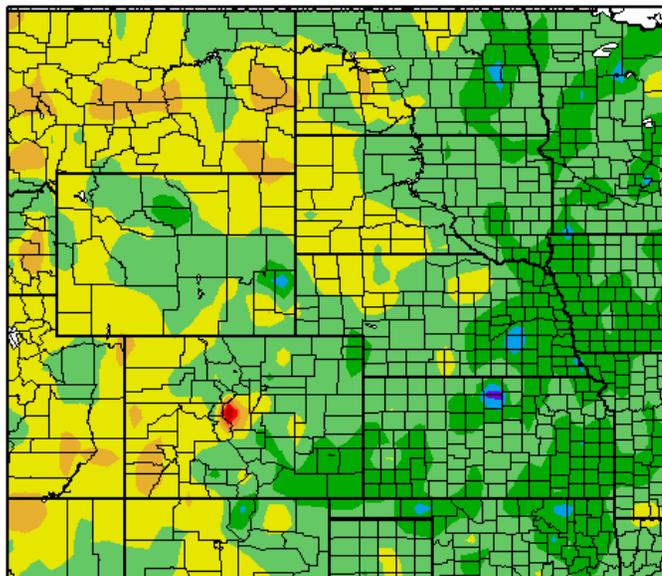
June and July so far

- We had a wet June in most of CO, except for the southwestern third.
- After a belated dry spell in early July, the monsoon has been active over the eastern half of CO in particular.
- This has recharged soil moisture and reservoir levels in eastern Colorado, while letting the gains that SW Colorado made last winter slip away.

Departure from Normal Temperature (F)
6/1 - 6/30/2004



Departure from Normal Temperature (F)
7/1/2004 - 7/25/2004



June and July so far

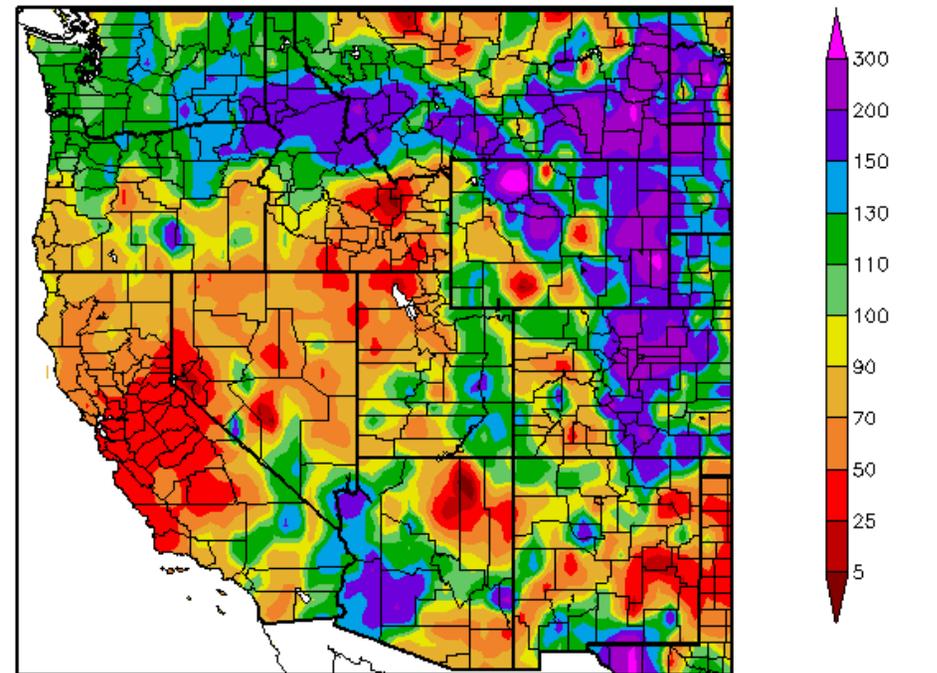
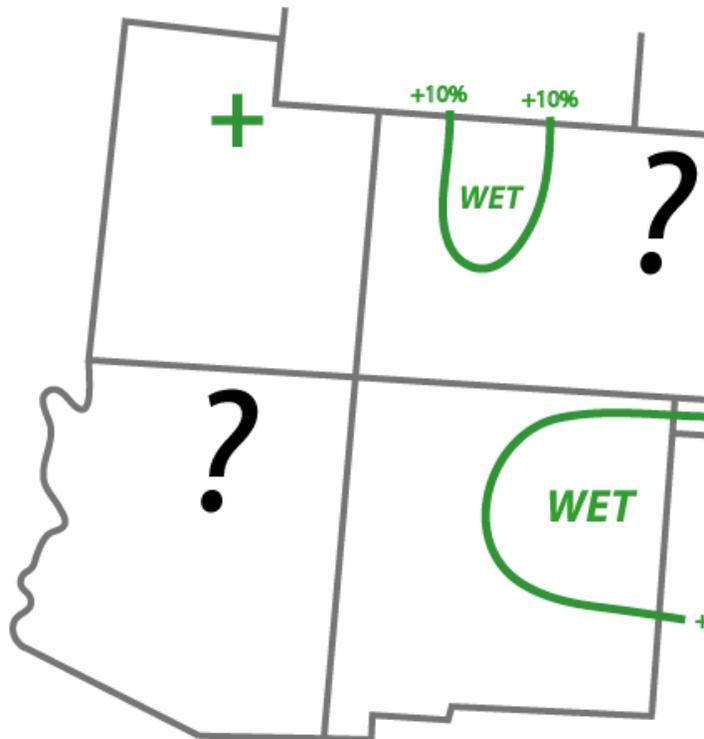
- June was cooler than normal over the northeastern half of CO;
- July has continued cool over the eastern plains, while western CO remains warmer than average.
- This will probably be the first colder-than-average July in the Front Range since 1997, definitely bucking a trend!

Source: <http://www.hprcc.unl.edu/products/current.html>

Comparing forecasts against observations

EXPERIMENTAL CDC JAN-MAR 2003 PRECIPITATION FORECAST
(issued December 17, 2002)

Percent of Normal Precipitation (%)
1/1/2003 - 3/31/2003



Generated 10/14/2003 at HPRCC using provisional data.

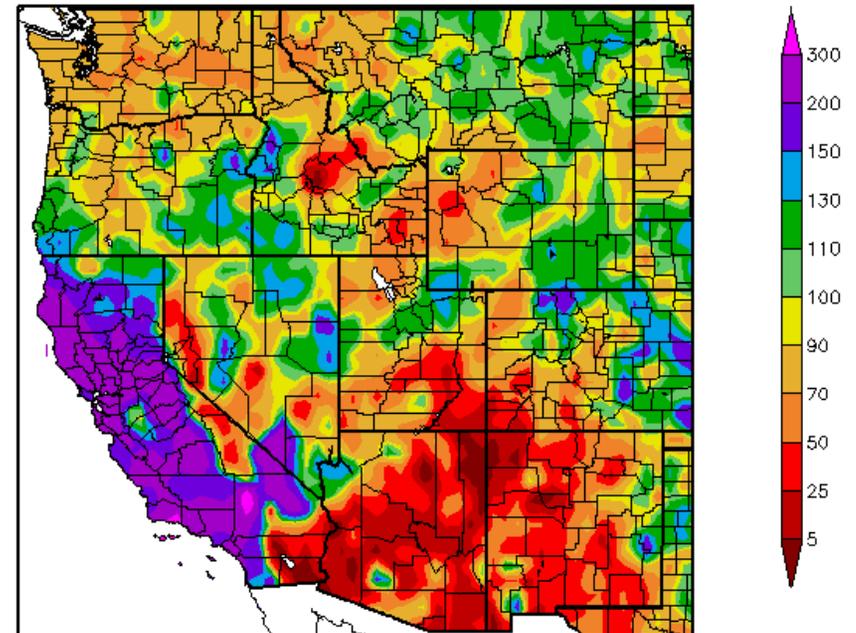
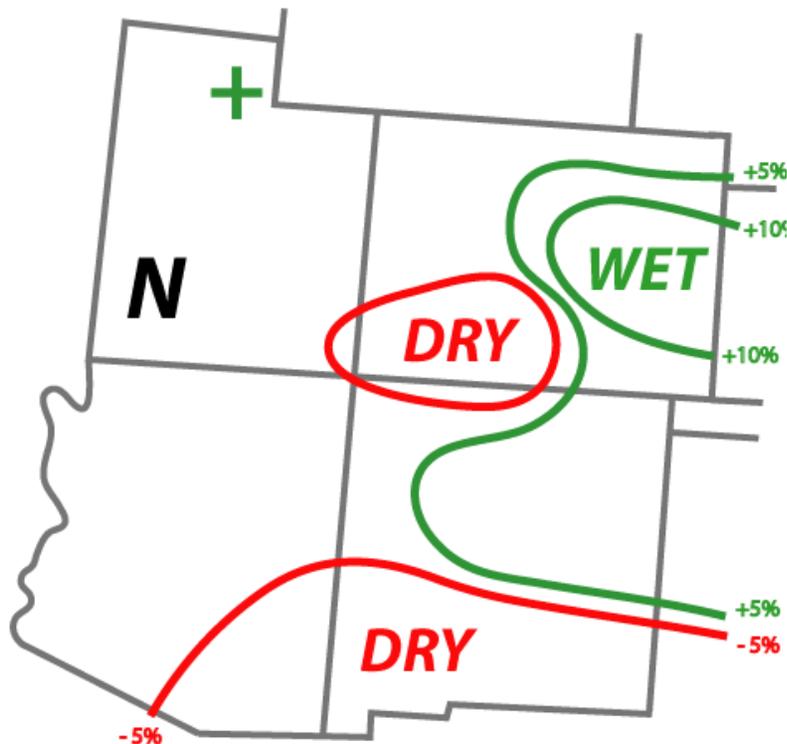
NOAA Regional Climate Centers

- Late winter precipitation was predicted to be above normal in the north-central mountains of CO in early 2003, and in northeastern NM. It verified for us, but not quite in NM.

Comparing forecasts against observations

EXPERIMENTAL CDC APR-JUN 2003 PRECIPITATION FORECAST
(issued March 24, 2003)

Percent of Normal Precipitation (%)
4/1/2003 - 6/30/2003



Generated 11/3/2003 at HPRCC using provisional data.

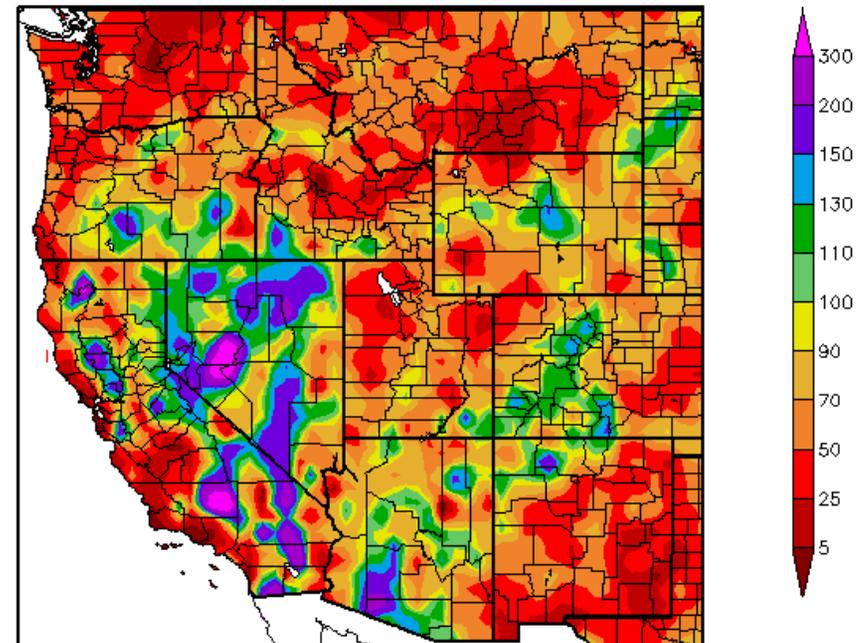
NOAA Regional Climate Centers

- Late spring 2003 precipitation was predicted to be above normal for eastern CO, while continued drought was anticipated for the San Juans and southern AZ/NM. Again, it verified for us, as well as for the drought regions (worst mismatch again for northeastern NM).

Comparing forecasts against observations

EXPERIMENTAL CDC JUL-SEP 2003 PRECIPITATION FORECAST
(issued May 14, 2003)

Percent of Normal Precipitation (%)
7/1/2003 - 9/30/2003



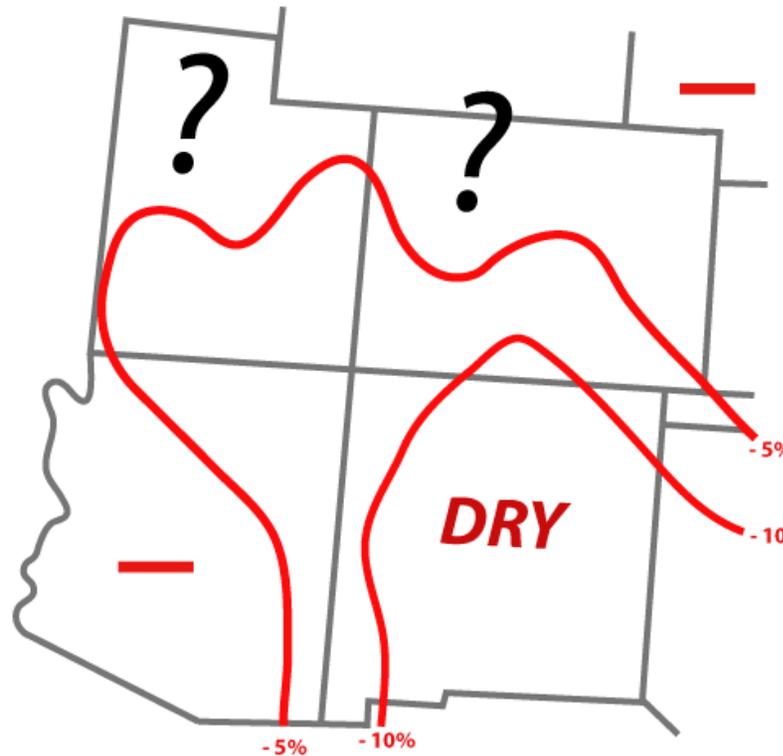
Generated 3/12/2004 at HPRCC using provisional data.

NOAA Regional Climate Centers

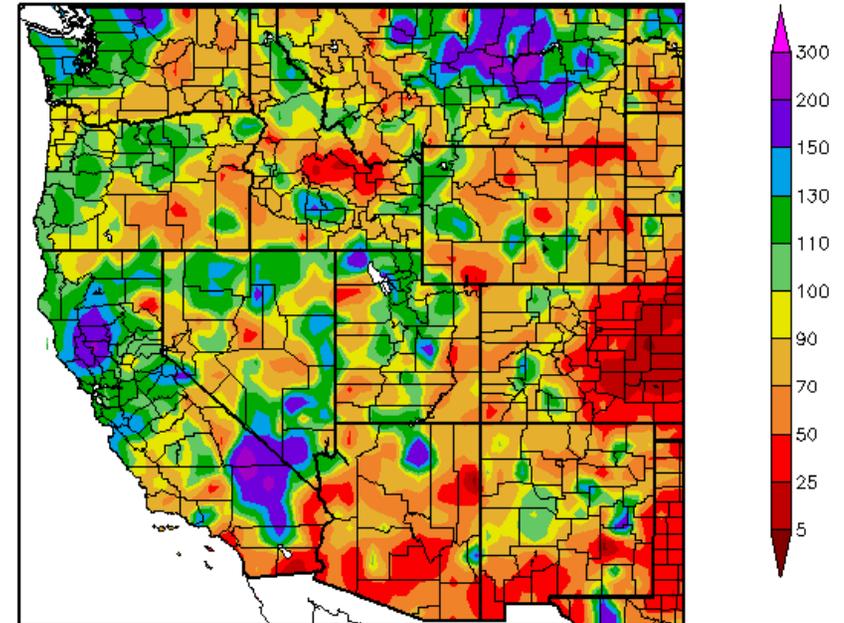
- Late summer 2003 precipitation was predicted to be above normal for the northwestern half of UT, as well as for southeastern NM. The verification was almost exactly inverse from its prediction - summer forecasts are tough!

Comparing forecasts against observations

EXPERIMENTAL CDC OCT-DEC 2003 PRECIPITATION FORECAST
(issued September 18, 2003)



Percent of Normal Precipitation (%)
10/1/2003 – 12/31/2003



Generated 4/21/2004 at HPRCC using provisional data.

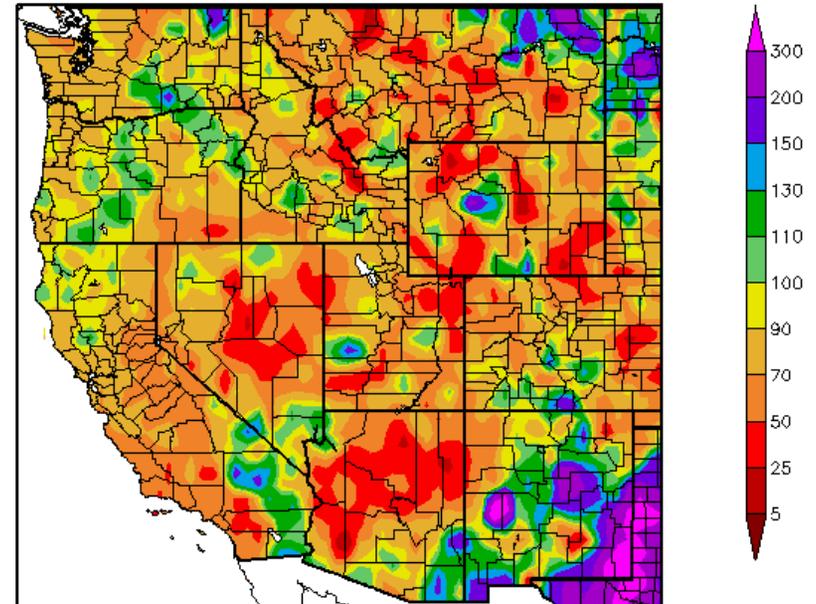
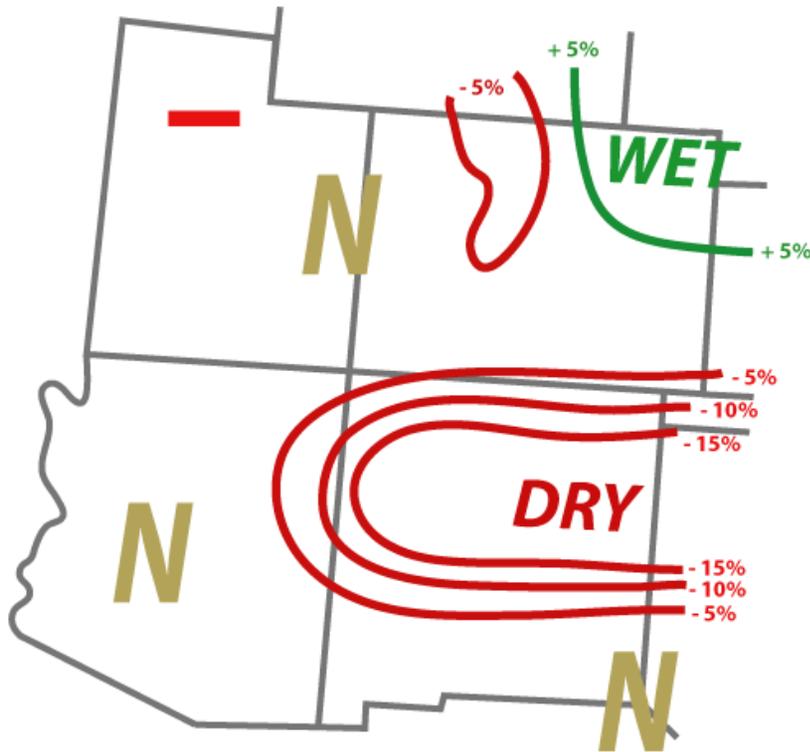
NOAA Regional Climate Centers

- Late fall 2003 precipitation was predicted to be below normal for most of the interior southwest, in particular for NM. The verification shifted the center of gravity of the dry signal into eastern CO, but the general dryness was confirmed for much of the domain.

Comparing forecasts against observations

EXPERIMENTAL CDC JAN-MAR 2004 PRECIPITATION FORECAST
(issued December 17, 2003)

Percent of Normal Precipitation (%)
1/1/2004 – 3/31/2004



Generated 7/15/2004 at HPRCC using provisional data.

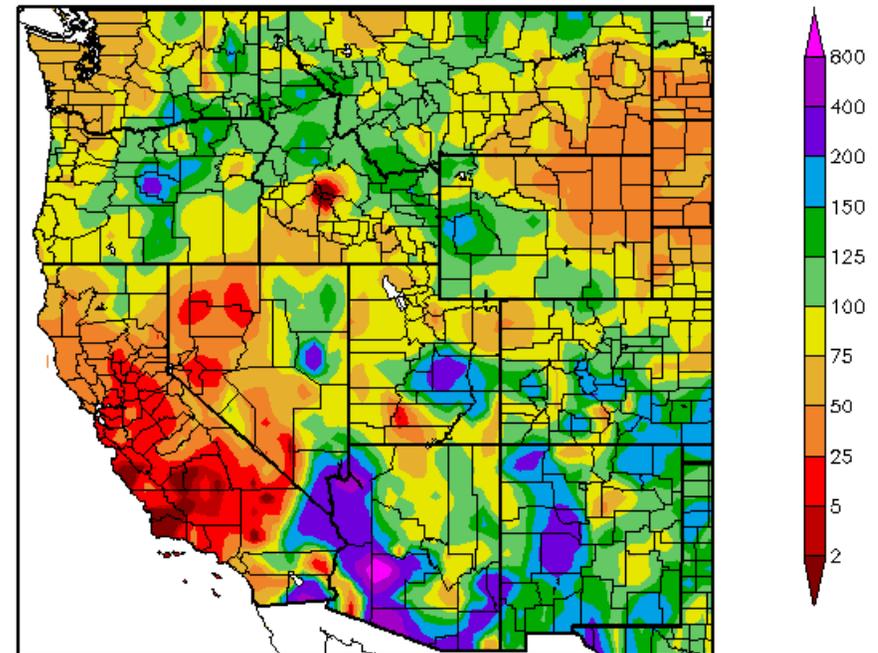
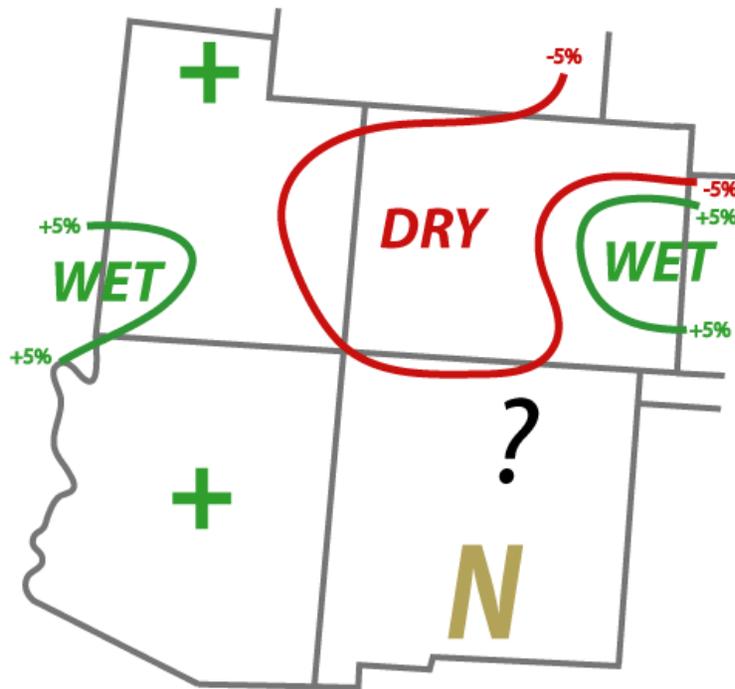
NOAA Regional Climate Centers

- Late winter 2004 precipitation was predicted to be below normal for the north-central mountains of CO, and for northern NM in particular. Mother Nature saw it fit to shift the latter center of gravity to northern AZ, while keeping more of CO dry than expected, including the northeastern corner of the state. This is probably my worst forecast verification since the late summer of 2002.

Comparing forecasts against observations

EXPERIMENTAL CDC APR-JUN 2004 PRECIPITATION FORECAST
(issued March 19, 2004)

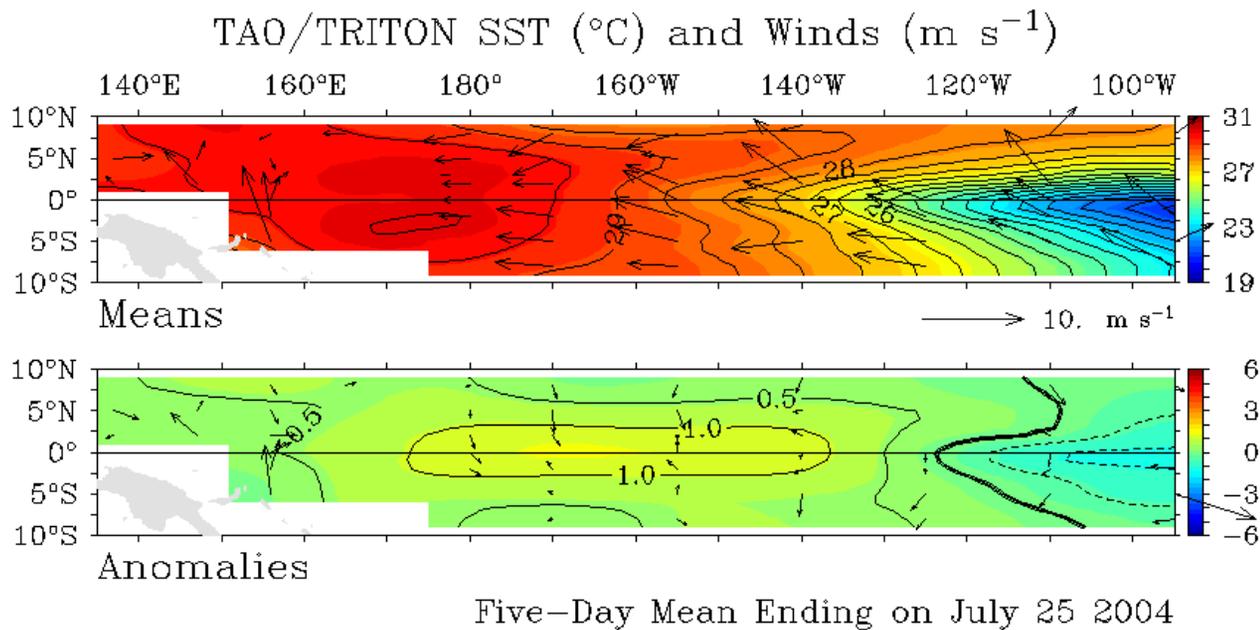
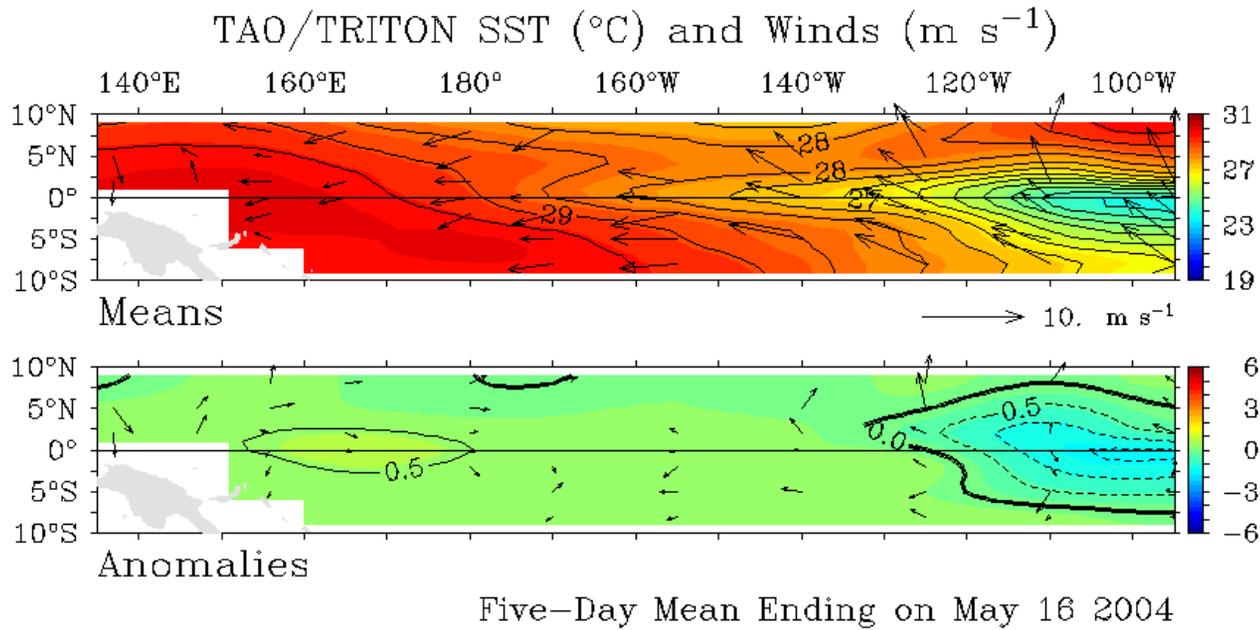
Percent of Normal Precipitation (%)
4/1/2004 - 6/30/2004



Generated 7/26/2004 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Late spring 2004 precipitation was predicted to be above normal for the plains of eastern CO, while leaving much of the rest of the state on the dry side (weak odds, however). After a wet April and June, more of CO enjoyed a wet spring than expected, although the epicenter remained on the eastern plains. Much of AZ and NM were wetter than normal, anticipated somewhat for AZ.

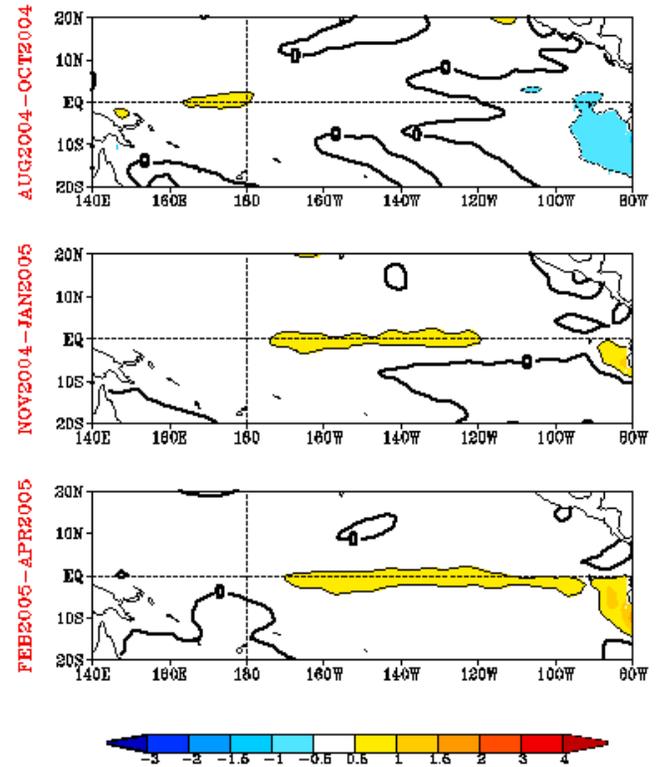


Current state
of ENSO
compared to
two months
ago
- El Niño is
making a
comeback?!

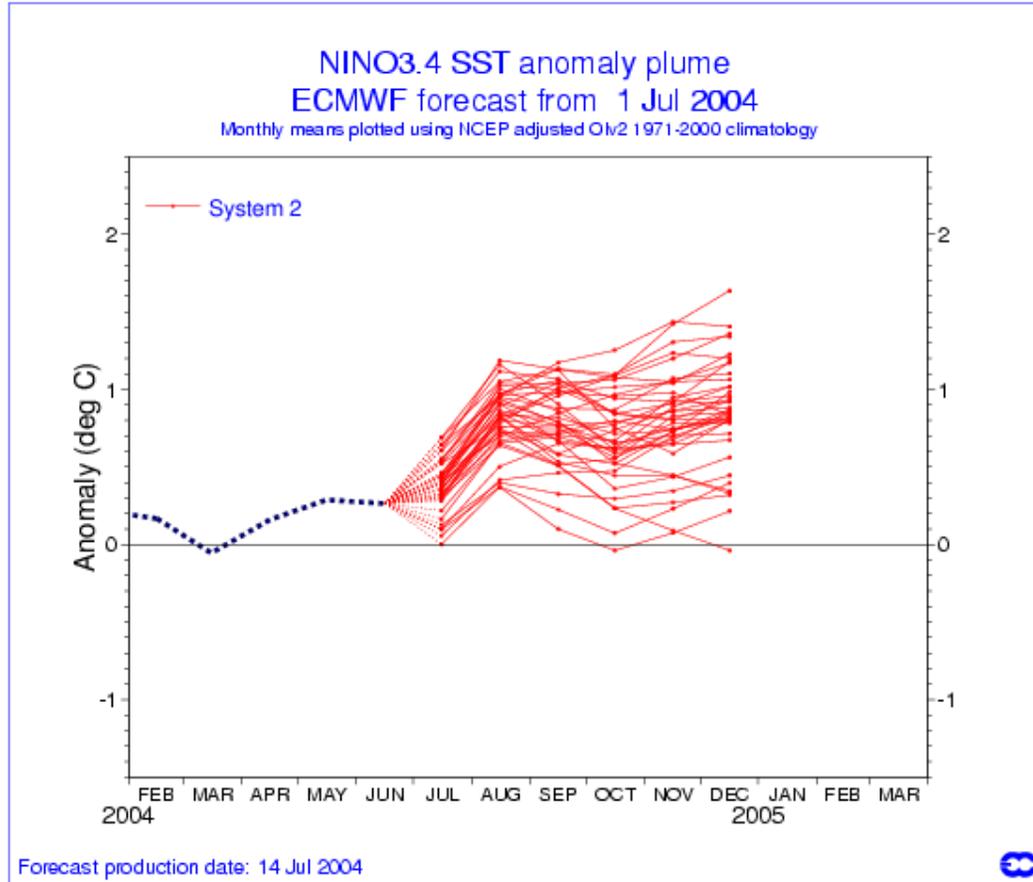


NCEP/CMB

FORECAST SST ANOMALIES



Last Update: Tue Jul 20 2004

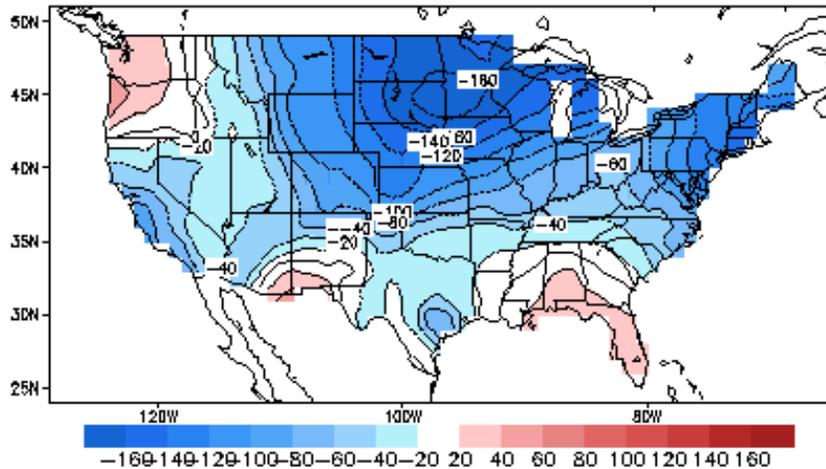


Forecast production date: 14 Jul 2004

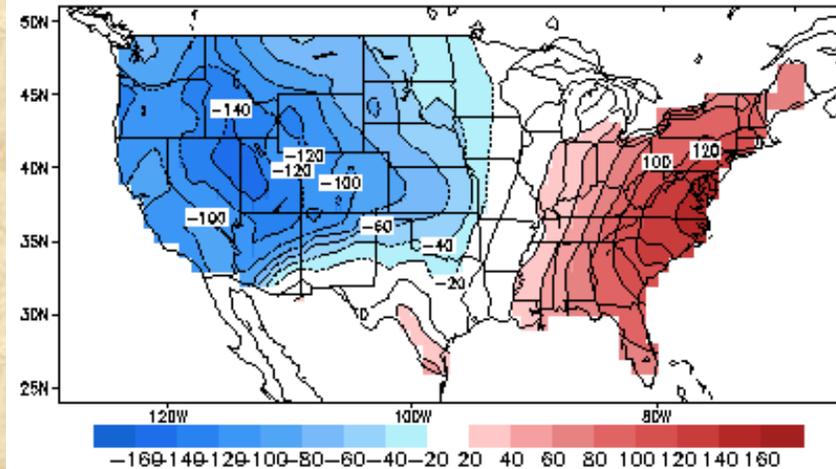
ECMWF vs. NCEP coupled models: the first one is more gung-ho about El Niño, the other is more ho-hum!

Soil Moisture Analog Forecasts

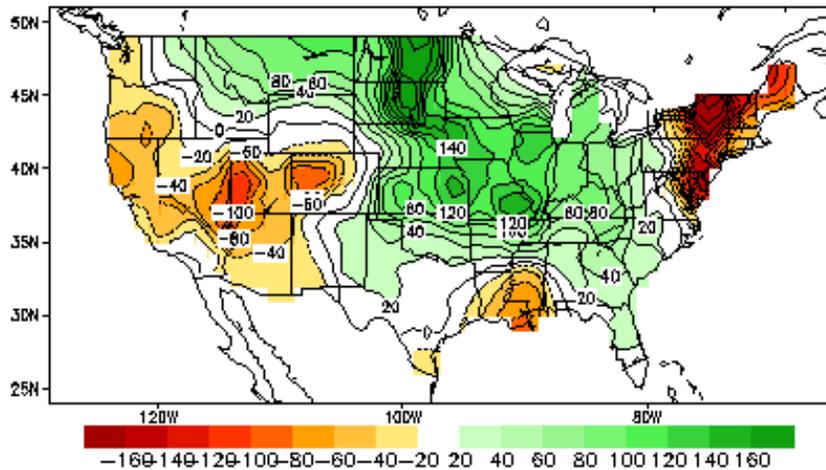
Lagged Averaged Temperature Outlook for AUG 2004
units: anomaly (sdX100), SM data ending at 20040725



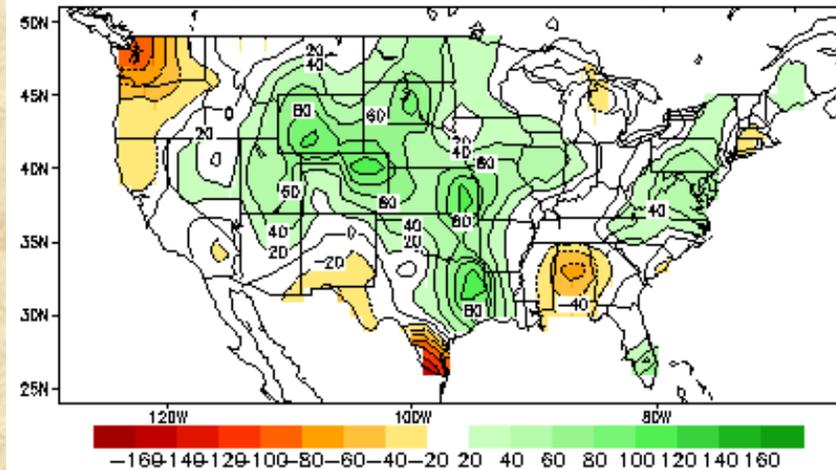
Lagged Averaged Temperature Outlook for SON 2004
units: anomaly (sdX100), SM data ending at 20040725



Lagged Averaged Precipitation Outlook for AUG 2004
units: anomaly (sdX100), SM data ending at 20040725

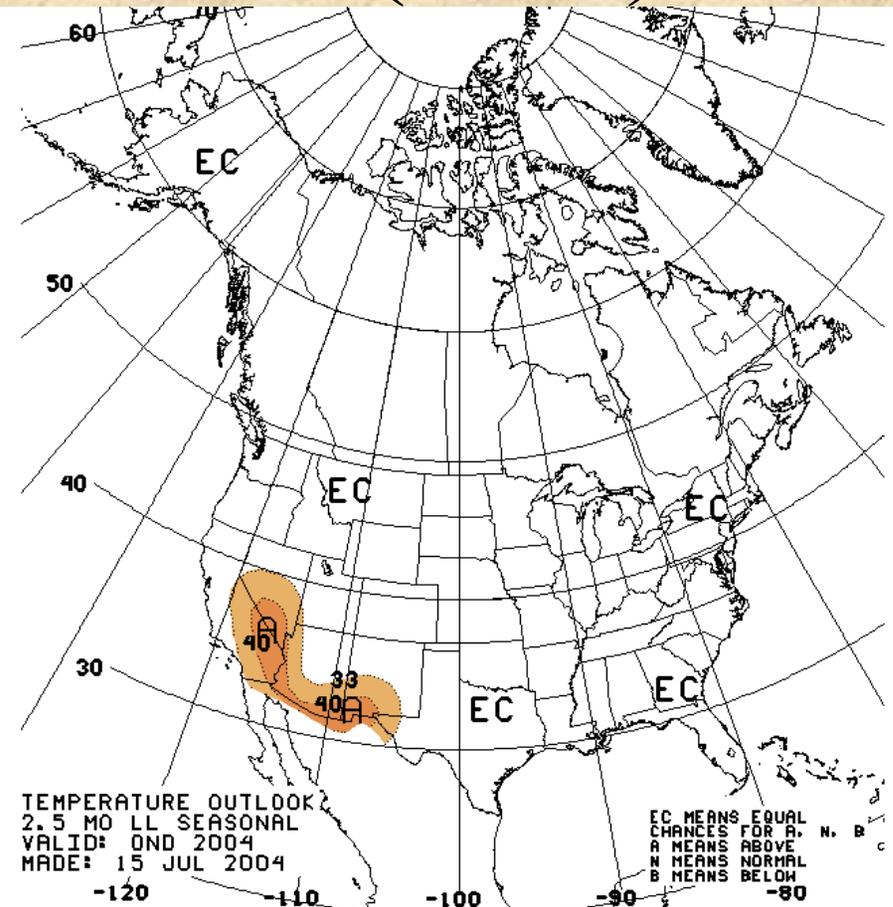
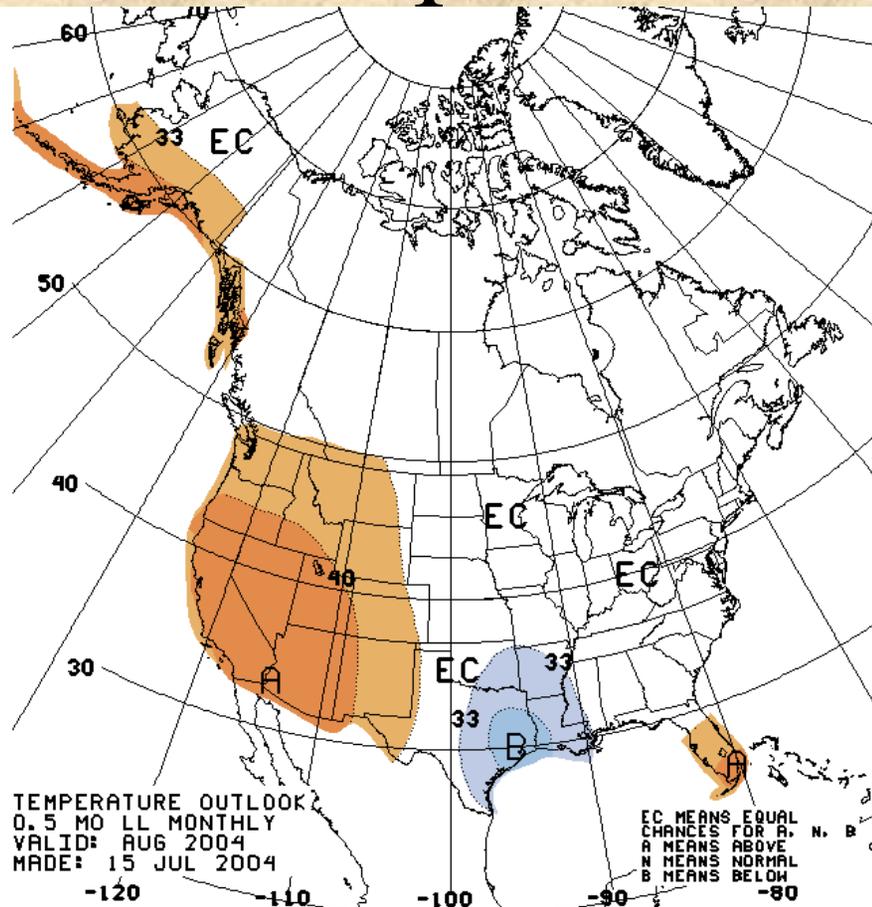


Lagged Averaged Precipitation Outlook for SON 2004
units: anomaly (sdX100), SM data ending at 20040725



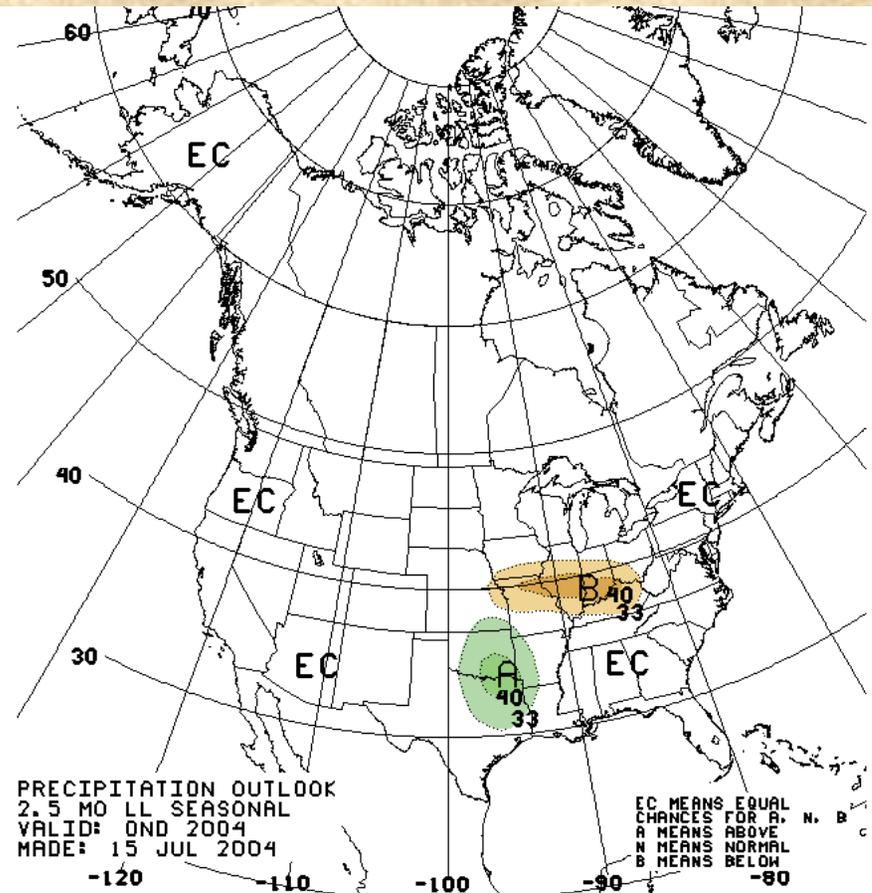
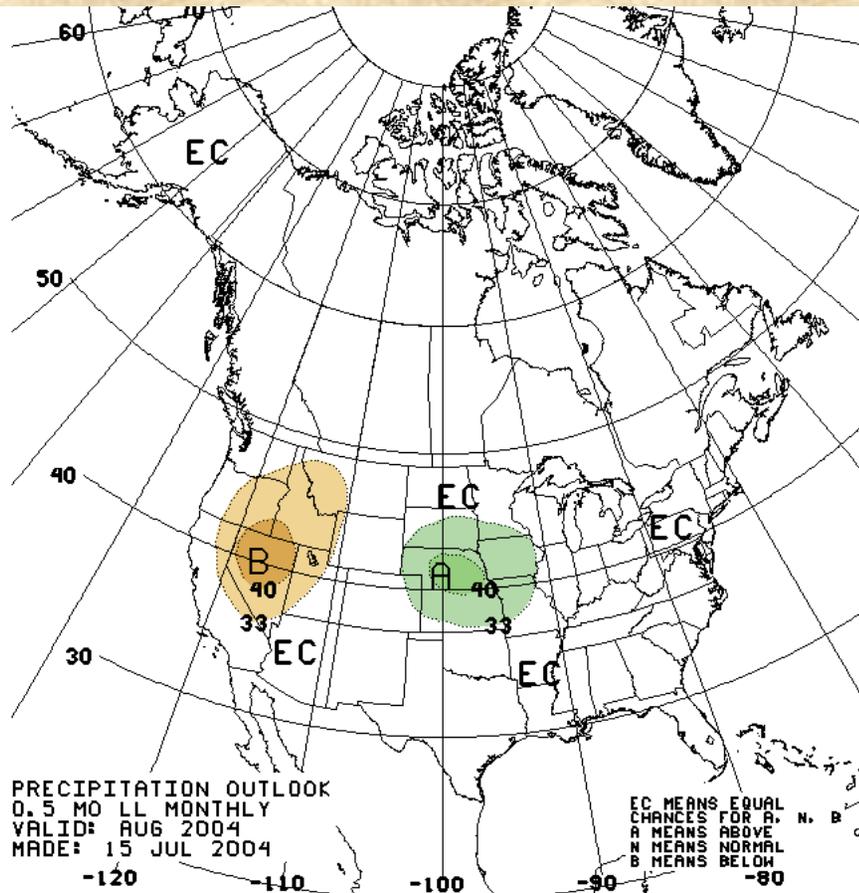
For August, this tool predicts a **cool** and **dry** month for most of CO. For SEP-NOV, **wet** and **cool** conditions are forecast - consistent with El Niño?!

Temperature Forecasts (CPC)



According to CPC, much of Colorado can expect a better chance for a warm August than a cool one. For the fall season, climatological odds (equal chances = EC) cover most of the country.

Precipitation Forecasts (CPC)



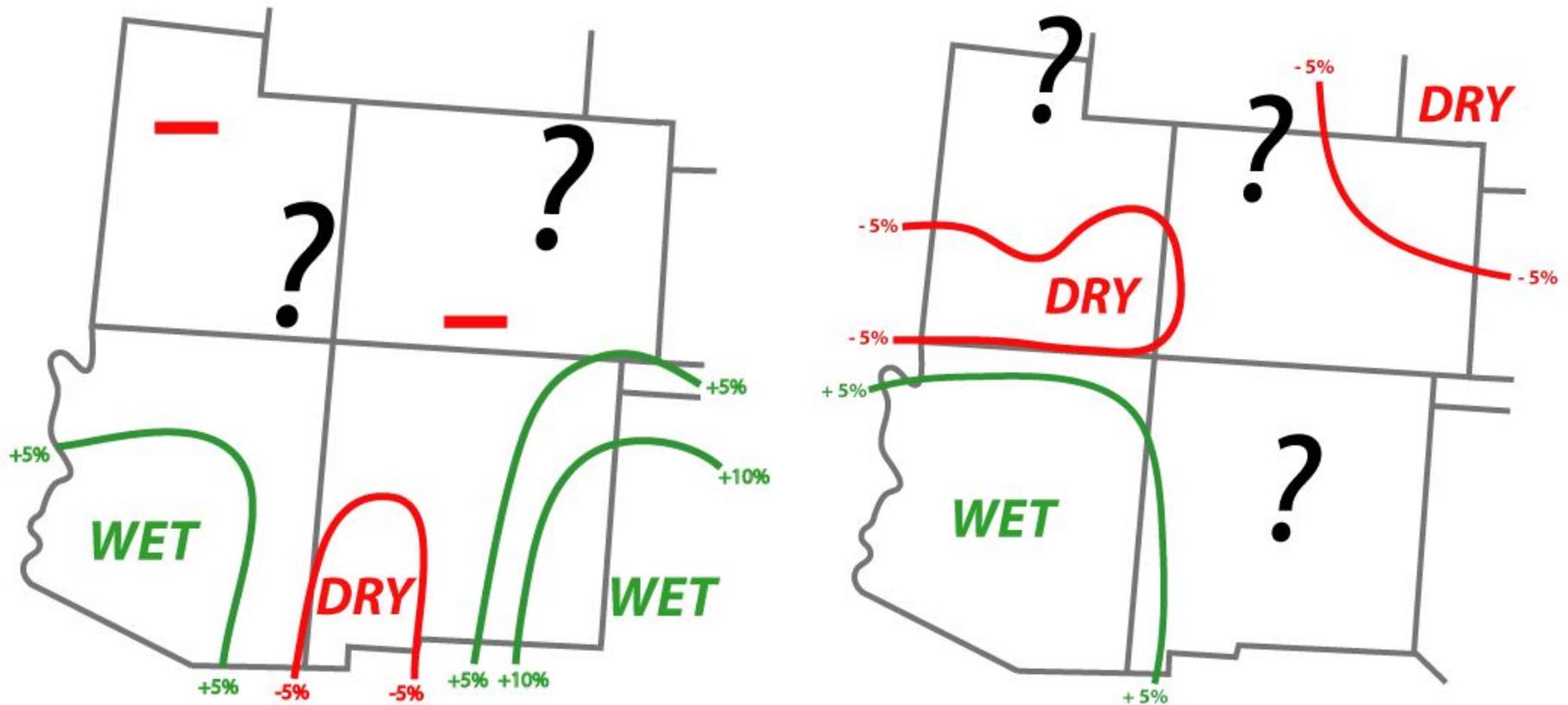
The official CPC forecast for August shows CO in between better chances for rain over just to our east vs. lower chances to our west. The extended outlook for OCT-DEC is undecided west of 100°W.

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

Experimental CDC Forecasts

EXPERIMENTAL CDC JUL-SEP 2004 PRECIPITATION FORECAST
(issued July 22, 2004)

EXPERIMENTAL CDC OCT-DEC 2004 PRECIPITATION FORECAST
(issued July 23, 2004)



For JUL-SEP '04, the forecast favors both AZ and eastern NM over CO, where no clear tilt of the odds emerges. For OCT-DEC '04, one can find a slight nod towards a dry fall for UT and CO, compared to better chances for a wet fall in AZ.

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

Executive Summary (27 July 2004)

1. The most recent El Niño event - declared over more than a year ago - tried to make a comeback in late '03, but lapsed back into near-neutral conditions by early '04. Over the last two months, the tropical Pacific has warmed yet again, and another El Niño event appears possible later this year. The odds for this to happen are better than last year.
2. After a mixed spring (dry March, wet April, dry May), June continued our roller-coaster ride by dropping prodigious amounts of moisture from southeastern Colorado into parts of the Front Range, while leaving the western third of the state drier than normal. July appears to repeat June's rainfall patterns over Colorado, with above-normal rainfall along and east of the divide, and below-normal moisture over western Colorado. Compared to the last six summers, this one has been cooler so far as well, consistent with its wetness.
5. In my experimental forecasts for July through September 2004, favored regions remain to our south, both in Arizona as well as especially over eastern New Mexico. A first look at the fall season (October-December) continues a comparatively wet trend for Arizona, while leaving both southern Utah and northeastern Colorado with a higher than average chance of dry conditions.
4. Bottomline: Recent warming in the central equatorial Pacific may allow for the return of El Niño later this year. Meanwhile, tilts in the precipitation odds remain weak over much of Colorado for the foreseeable future. If El Niño were to gain sufficient strength this fall, most of Colorado would improve its odds for above-normal moisture for the remainder of 2004.