

Water Availability Task Force Colorado



John Henz, C.C.M.
February 16, 2007
Denver Colorado



HDR

Today's thought

**"Logic will get you from A to B.
Imagination will take you
everywhere."**

Albert Einstein

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John F. Henz, CCM

Significantly
assisted by:
Bill Badini

- **Senior Project Manager and National Hydro-Meteorology Technical Advisor HDR Engineering, Inc. – Denver**
- **Certified Consulting Meteorologist since 1980**
- Check it out: www.hdrweather.com
- Email: john.henz@hdrinc.com

The logo for HDR, consisting of the letters 'HDR' in a stylized, bold, serif font.

Major HDR points and forecasts
from the September 2006
WATF meeting



Signals are getting stronger

(HDR, Sept 20, 2006)

- El Nino appears likely to become moderate
- Snowpack north of I-70: below average to average
- Snowpack along I-70: average
- Snowpack south of I-70: above average
- Snowpack along CD north of I-70: average to abv based on wet spring
- Snowpack along CD south of I-70: Below to average

Initial snowpack outlook for WY0607 (HDR, Sept 20, 2006) (2-16)

Basin	October-March Basin Avg. SWE (% of normal) Could be low
White-Yampa	80% (74%)
Upper-Mid Colorado	95% (91%)
Lower Colorado	100% (94%)
Eagle- Roaring Fork	115% (87%)
Gunnison	120% (80%)
Uncompahgre	110% (89%)

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What's happened in the interim

- Big Christmas and January snowstorms along the Front Range and on the eastern plains.
- Mountain snows have been average to below average.
- Temperatures went from way above (+5.5F) average before Dec 20 to way below (-7.5F) average since Dec 20.

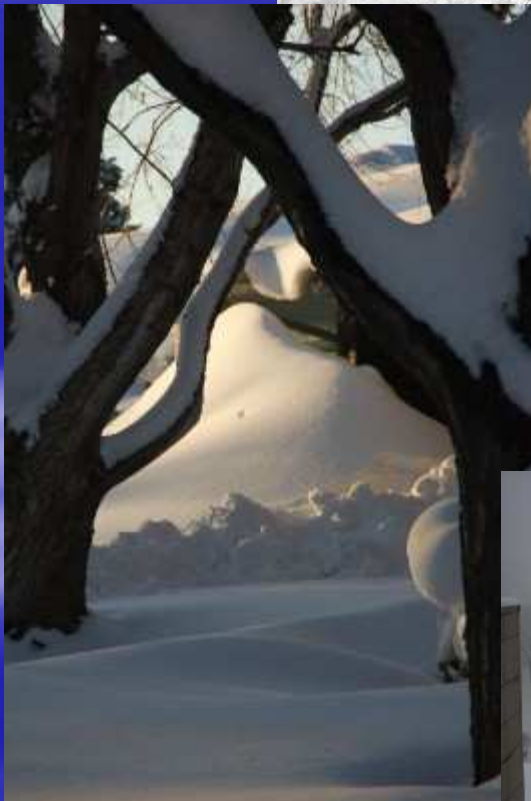
December blizzards are not rare!

1913



1982

2006



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Mt. Catawba Court

Oct – Feb 15 snowfall

SE Aurora (HEB) 5995'

122.7 inches (10.53")

Nederland -

142.1 inches

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My neighbor across the street had
other ideas!



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Will we set the record?

- HERE IS A LIST OF THE TOP 10 PERIODS OF CONSECUTIVE SNOW COVER IN DENVER:

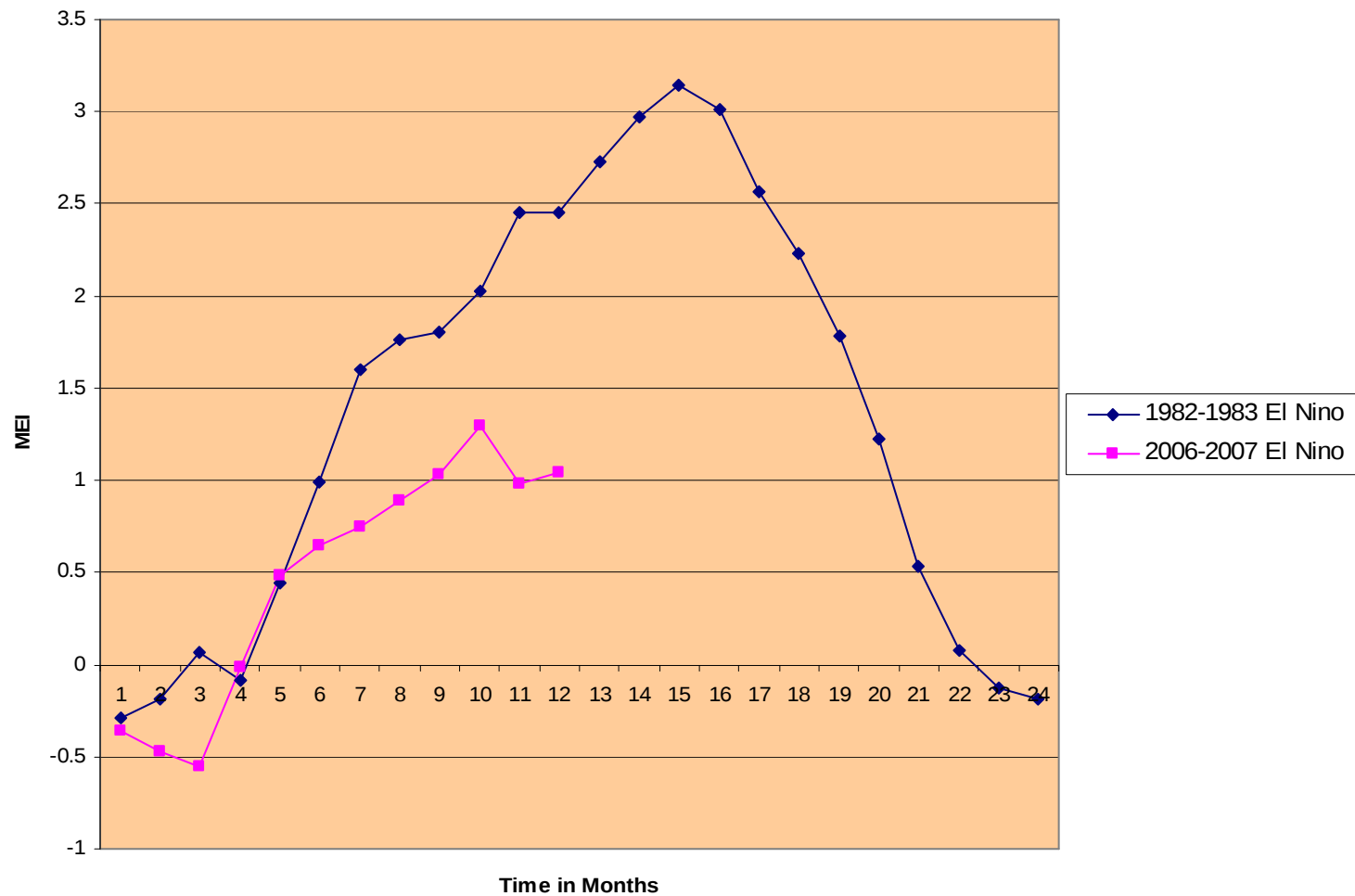
<u>NUMBER OF DAYS</u>	<u>INCLUSIVE DATES</u>
■ 63 DAYS.....	NOVEMBER 26 1983 - JANUARY 27 1984
60 DAYS.....	DECEMBER 1 1913 - JANUARY 29 1914
57 DAYS AND COUNTING.....	DECEMBER 21 2006 - FEBRUARY 15 2007
(Updated)	
48 DAYS.....	DECEMBER 24 1982 - FEBRUARY 9 1983
43 DAYS.....	DECEMBER 19 1973 - JANUARY 30 1974
39 DAYS.....	NOVEMBER 21 1992 - DECEMBER 29 1992
38 DAYS.....	DECEMBER 24 1987 - JANUARY 30 1988
35 DAYS.....	JANUARY 2 1949 - FEBRUARY 5 1949
33 DAYS.....	DECEMBER 17 1918 - JANUARY 18 1919
27 DAYS.....	JANUARY 28 1989 - FEBRUARY 23 1989

~ 5 inches of snow on ground at Stapleton gage site

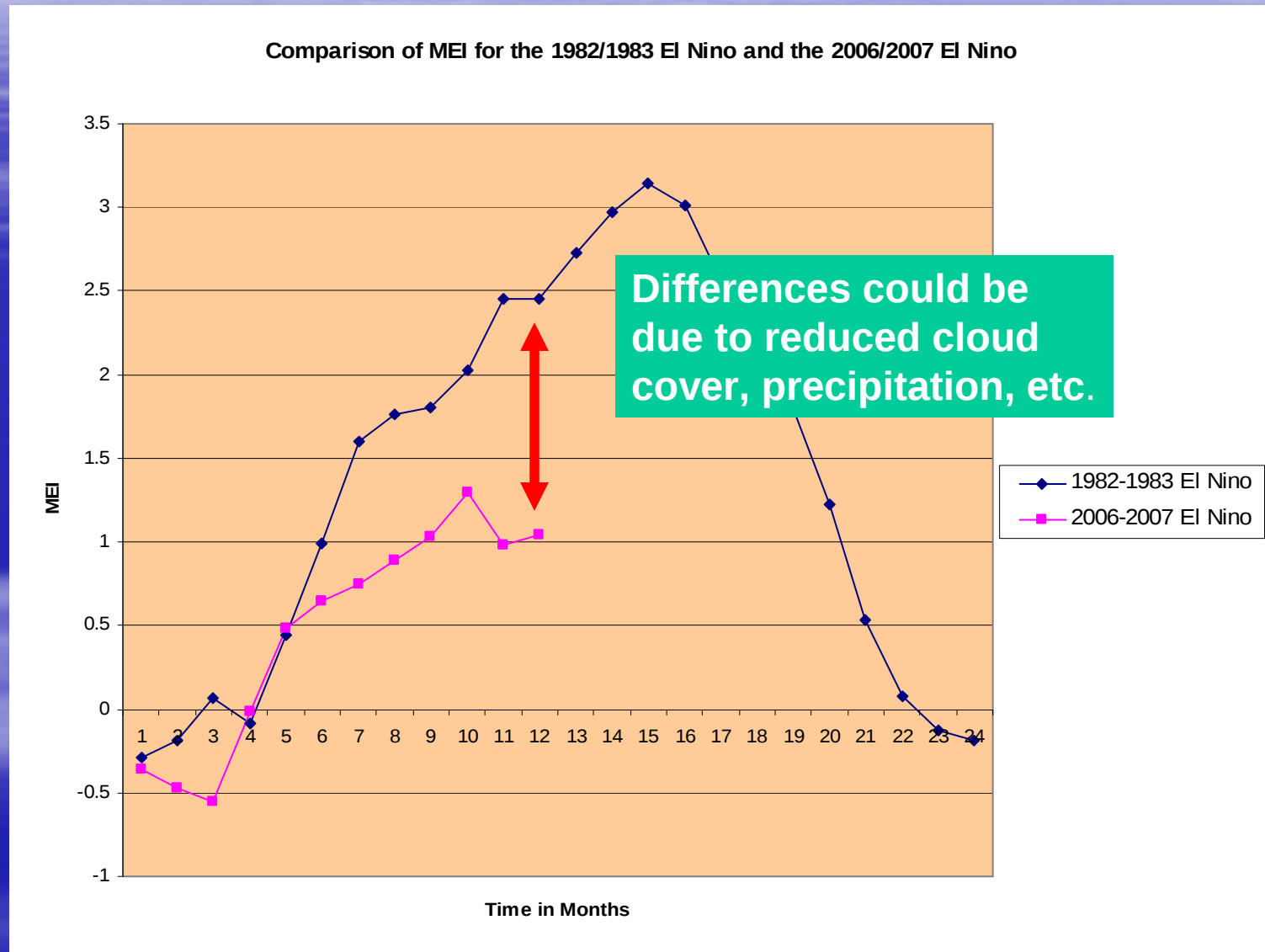


Comparison of MEI for 82-83 and 0607 El Nino's

Comparison of MEI for the 1982/1983 El Nino and the 2006/2007 El Nino

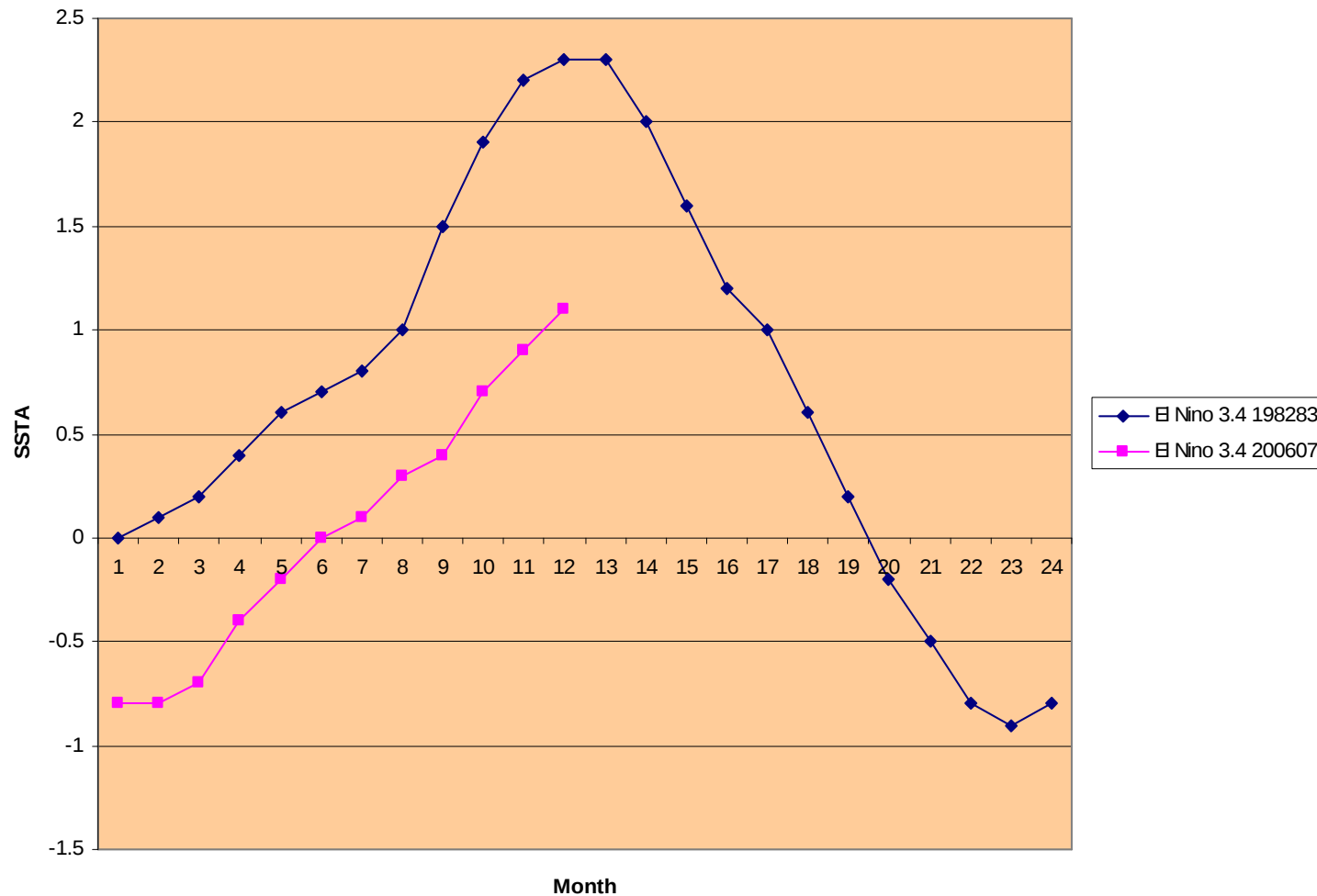


Comparison of MEI for 82-83 and 0607 El Nino's (quite different)



Comparison of Sea Surface Temp. Anomaly in El Nino 3.4 for 82-83 and 0607 El Nino's

Comparison of the 1982/1983 El Nino and 2006/2007 El nino SSTA in Nino 3.4

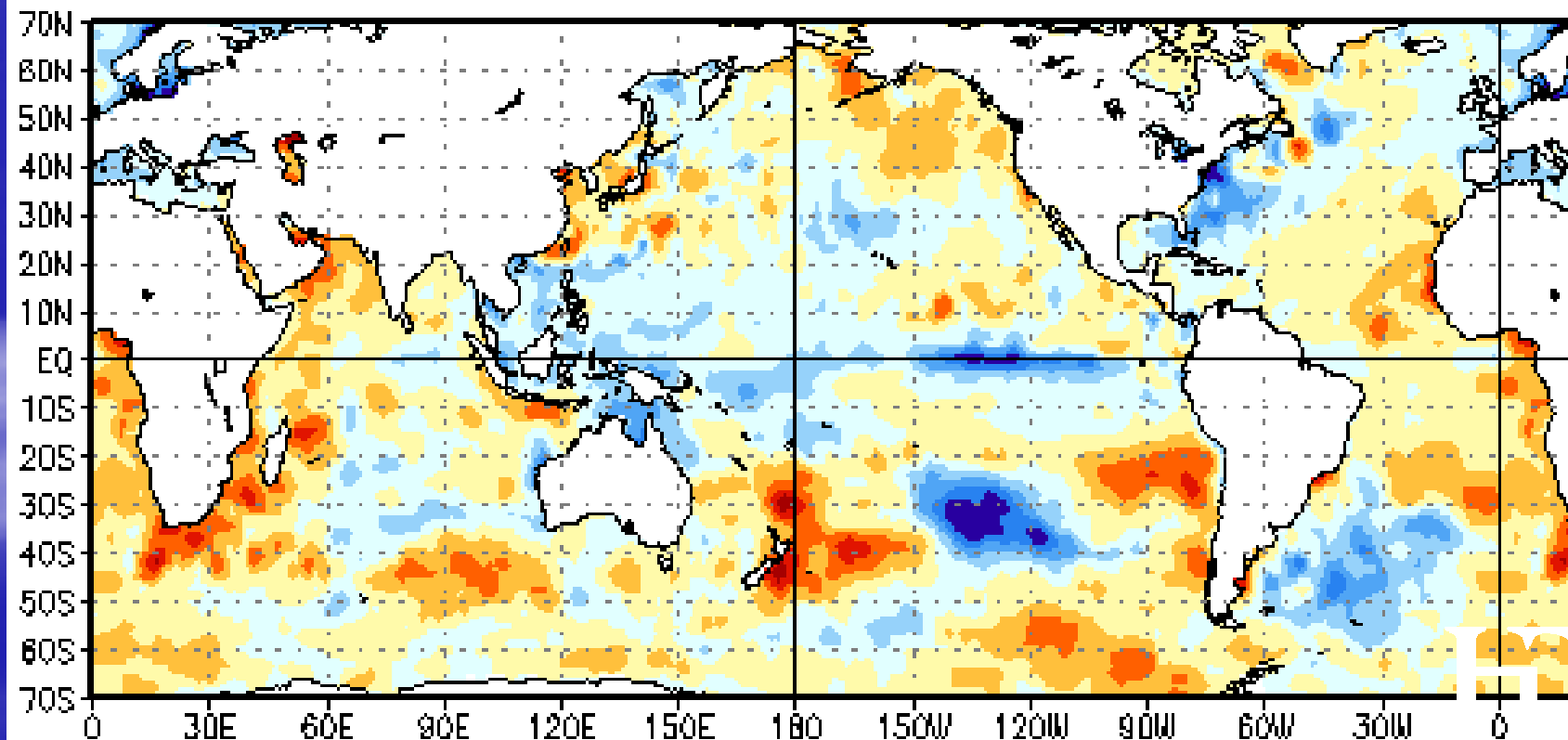


SSTA Change in past month = Cooling

Courtesy: NOAA Climate Prediction Center

Change in Weekly SST Anoms ($^{\circ}\text{C}$)

07FEB2007 minus 10JAN2007



FR

HDR SWE Forecasts

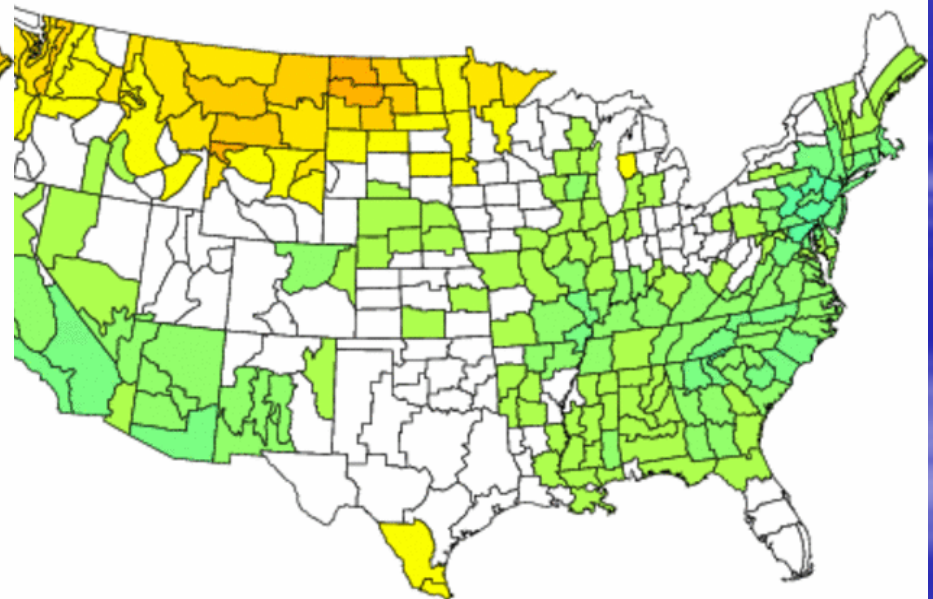
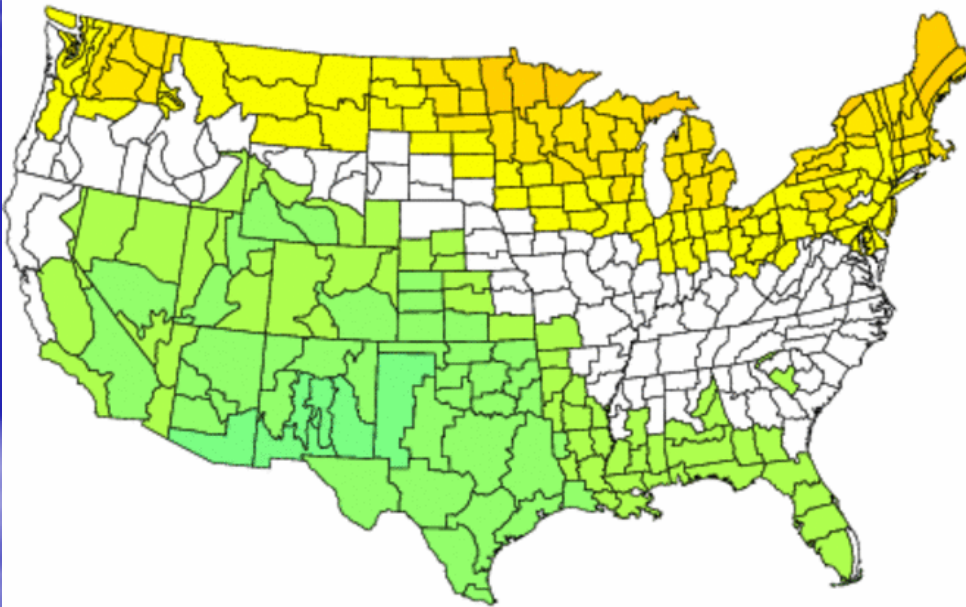
- Pacific storm track to shift from Northwesternly to Southwesterly position.
- Major mountain snows will pile up along and south of I-70 corridor.
- South Platte basin will experience 2-4 additional wet snow/upslope storms into mid-May.
- Timing of Spring runoff will be slightly early to average. Statewide: near-normal.

Mar-Apr May Temperature

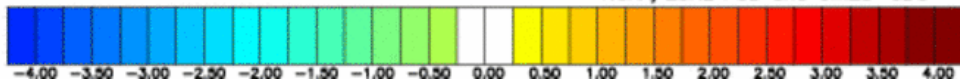
Precipitation

Composite Standardized Temperature Anomalies
Mar to May 1973,1983,1998,1958,1966,1977,1952
Versus 1950–1995 Longterm Average

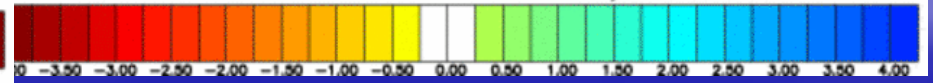
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NOAA/ESRL PSD and CIRES-CDC



NOAA/ESRL PSD and CIRES-CDC

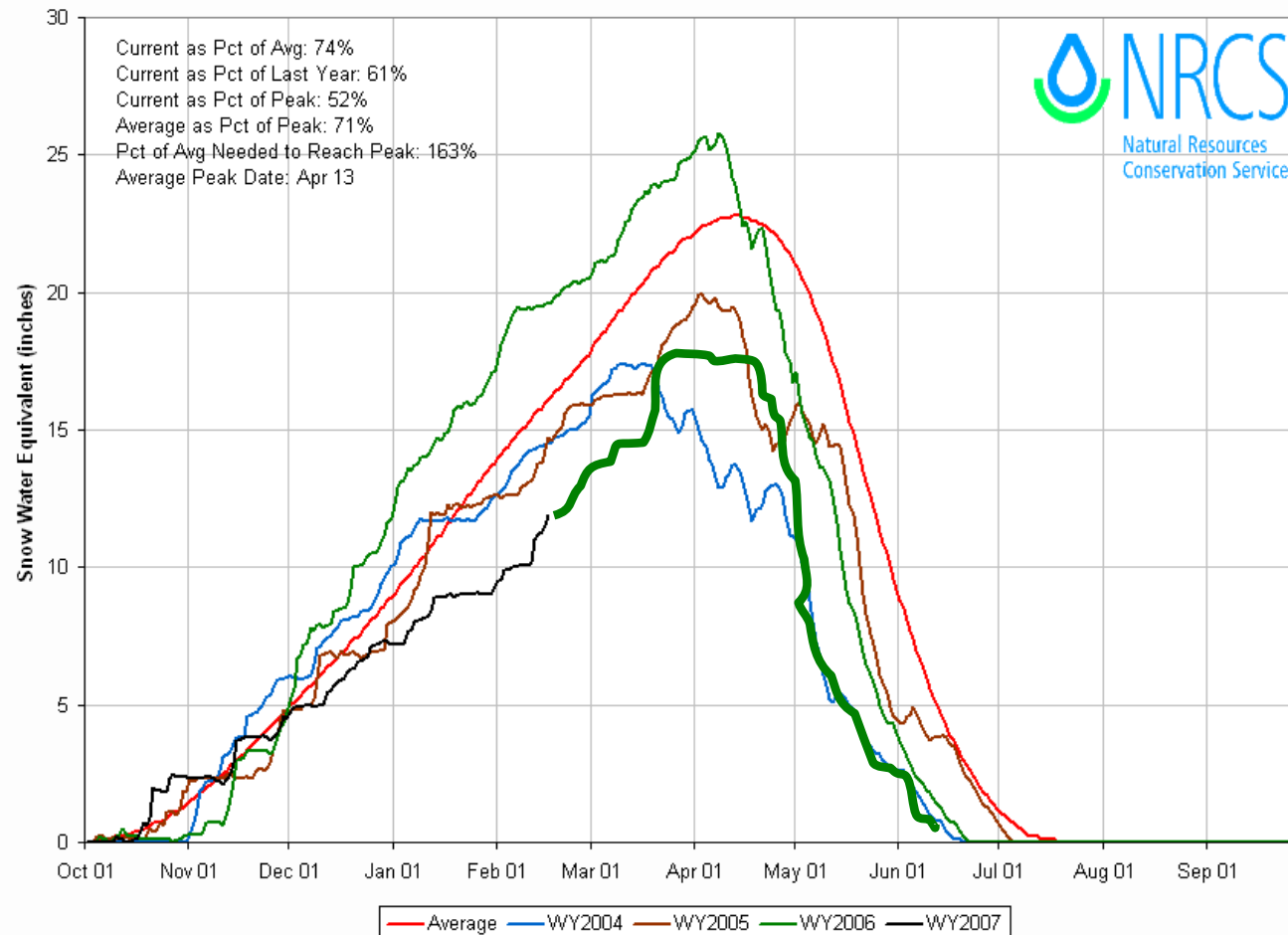


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HDR Yampa/White SWE Forecast

Yampa and White River Basins Time Series Snowpack Summary

Based on Provisional SNOTEL data as of Feb 16, 2007

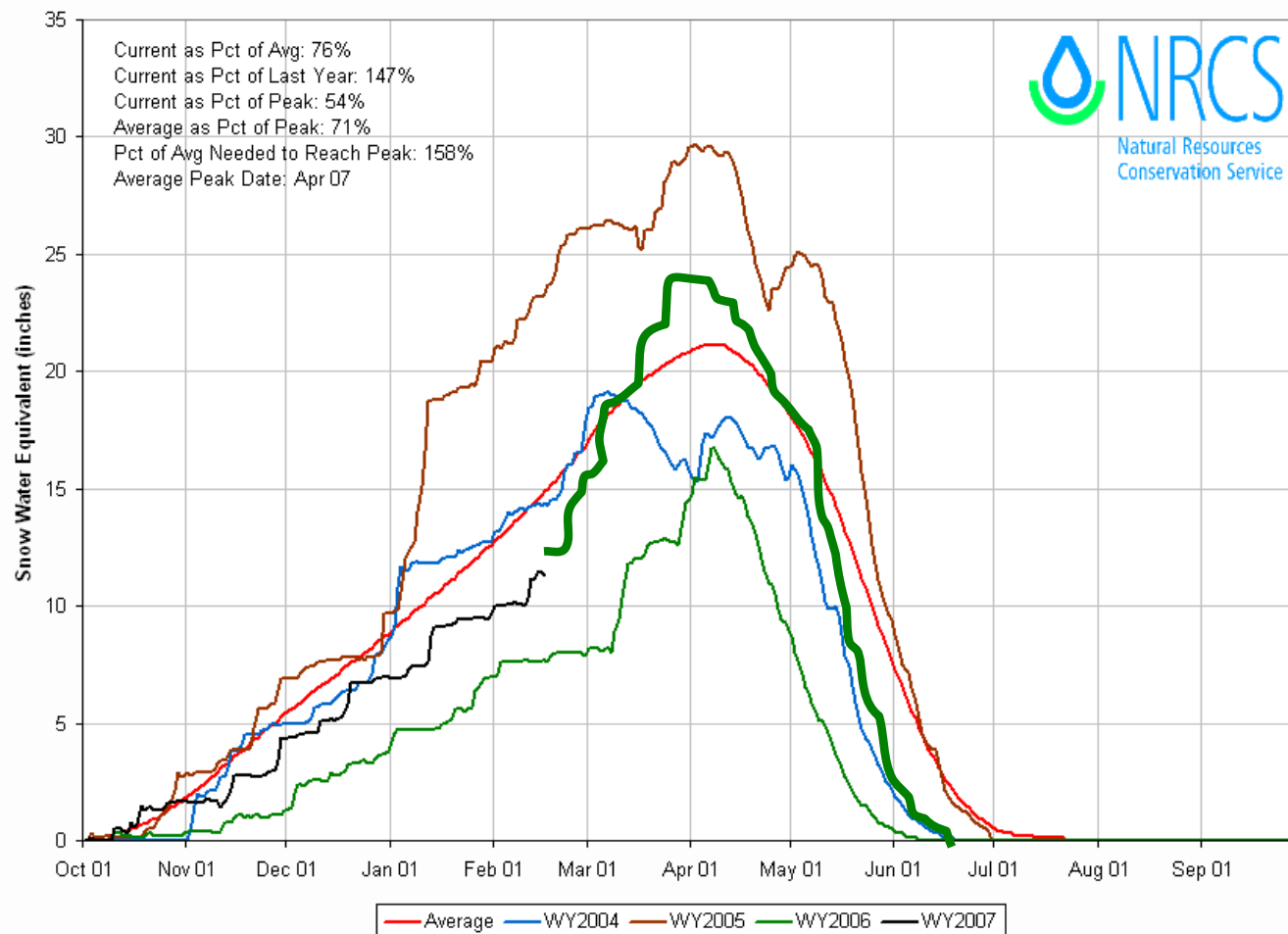


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HDR SMDASJ SWE Forecast

San Miguel, Dolores, Animas & San Juan River Basins Time Series Snowpack Summary

Based on Provisional SNOTEL data as of Feb 16, 2007

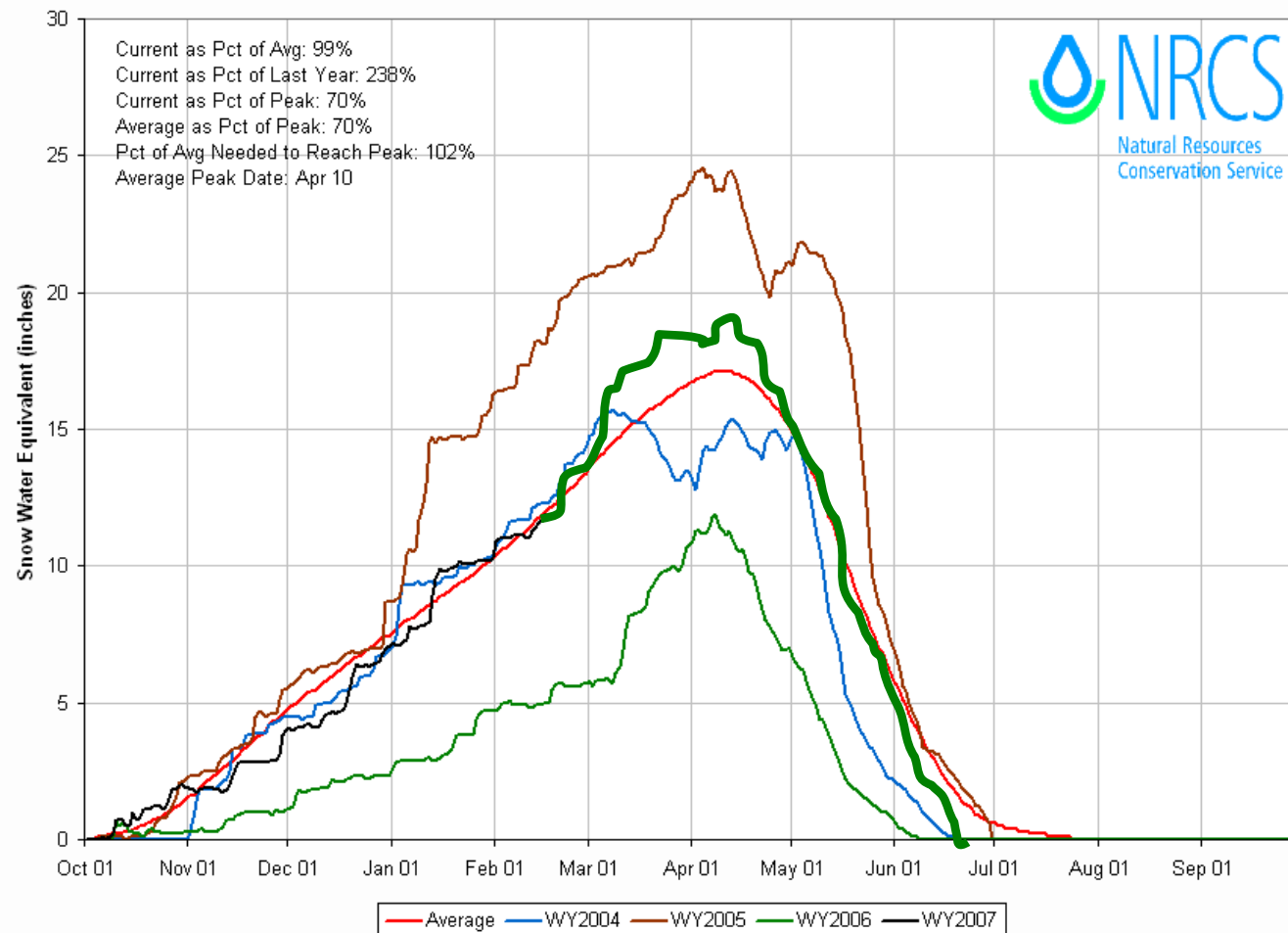


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HDR Rio Grande SWE Forecast

Upper Rio Grande Basin Time Series Snowpack Summary

Based on Provisional SNOTEL data as of Feb 16, 2007

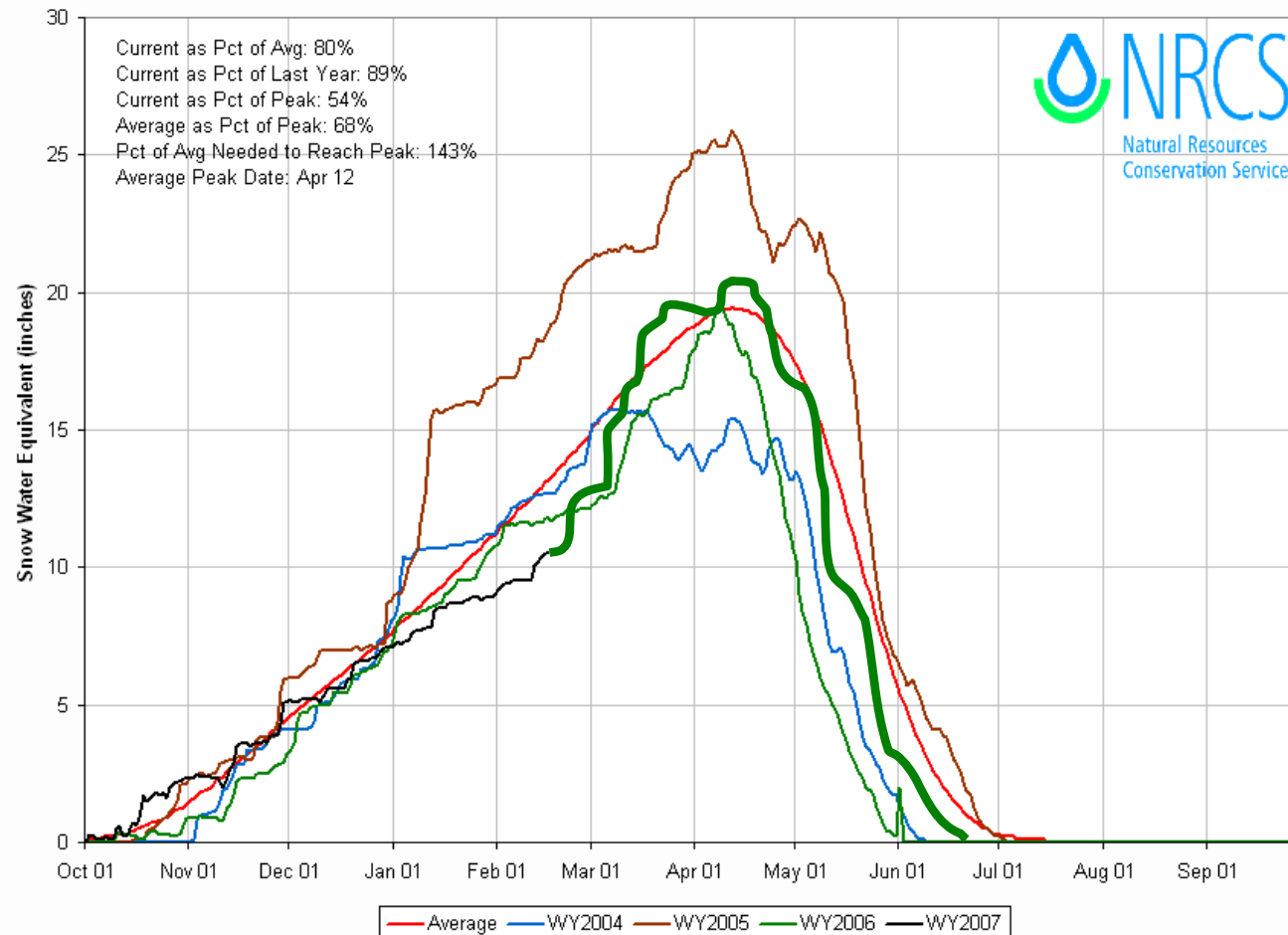


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HDR Gunnison SWE Forecast

Gunnison River Basin Time Series Snowpack Summary

Based on Provisional SNOTEL data as of Feb 16, 2007

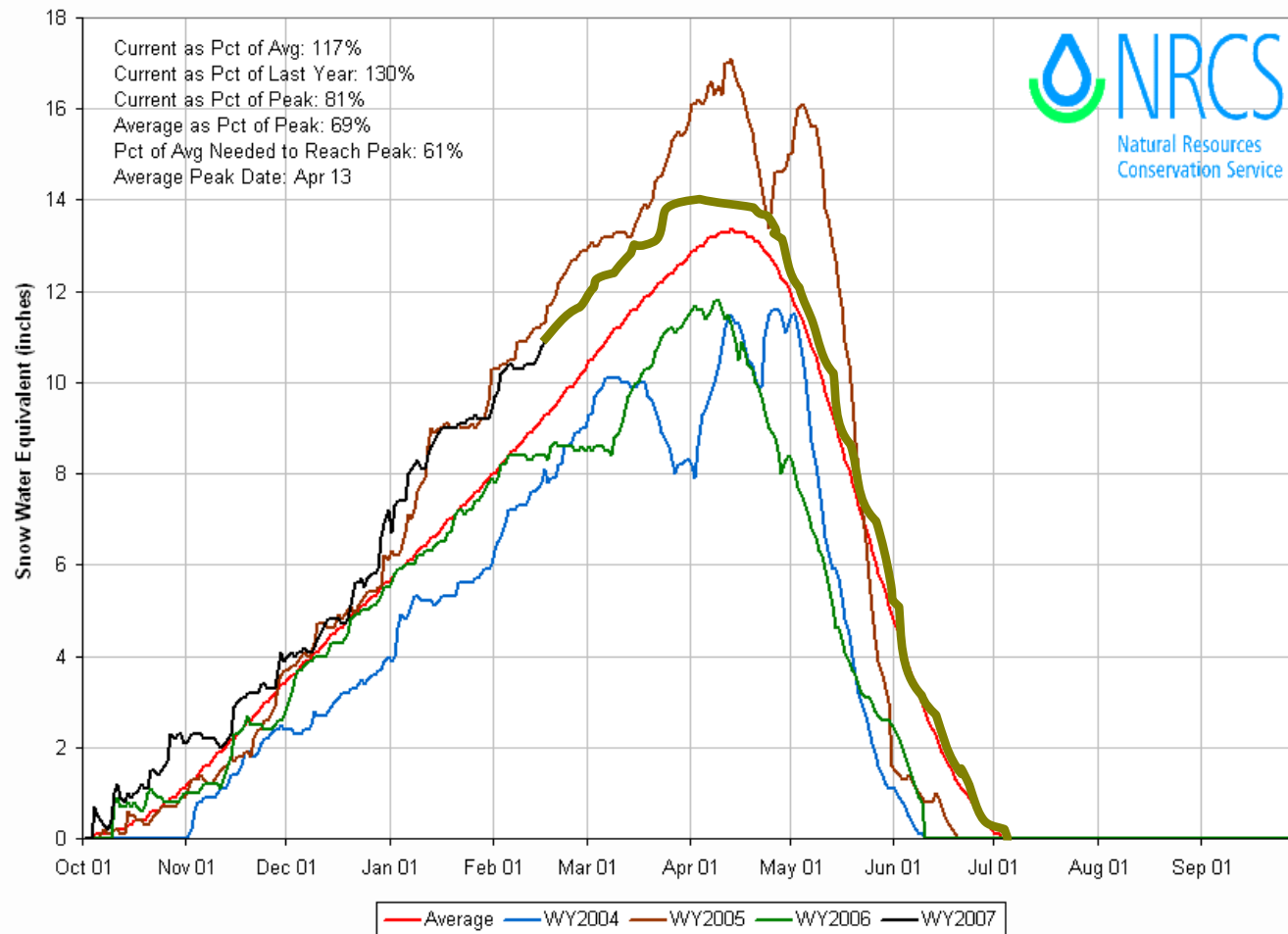


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HDR Arkansas SWE Forecast

Arkansas River Basin Time Series Snowpack Summary

Based on Provisional SNOTEL data as of Feb 16, 2007

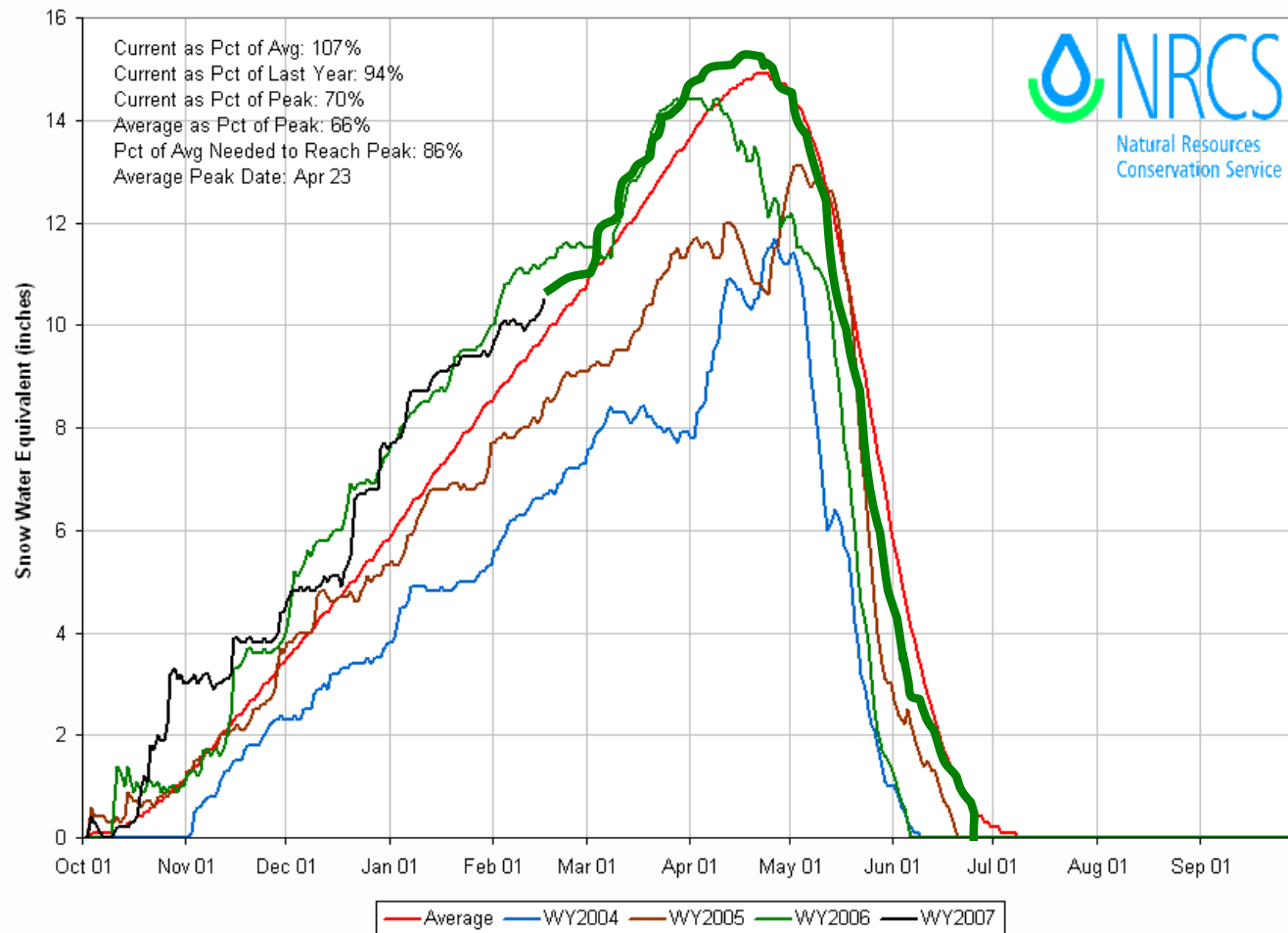


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HDR South Platte SWE Forecast

South Platte River Basin Time Series Snowpack Summary

Based on Provisional SNOTEL data as of Feb 16, 2007



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El Nino's pulse is weakening

- Lingering positive impacts into Spring with wet March into early June.
- SW Mountain storm track to aid basins south of I-70 with huge recovery!
- Strong snow storms expected Feb 19 to March 20 on eastern plains.
- Summer looks “average” as we transition from El Nino into either a weak warm neutral or weak La Nina pattern by Fall.

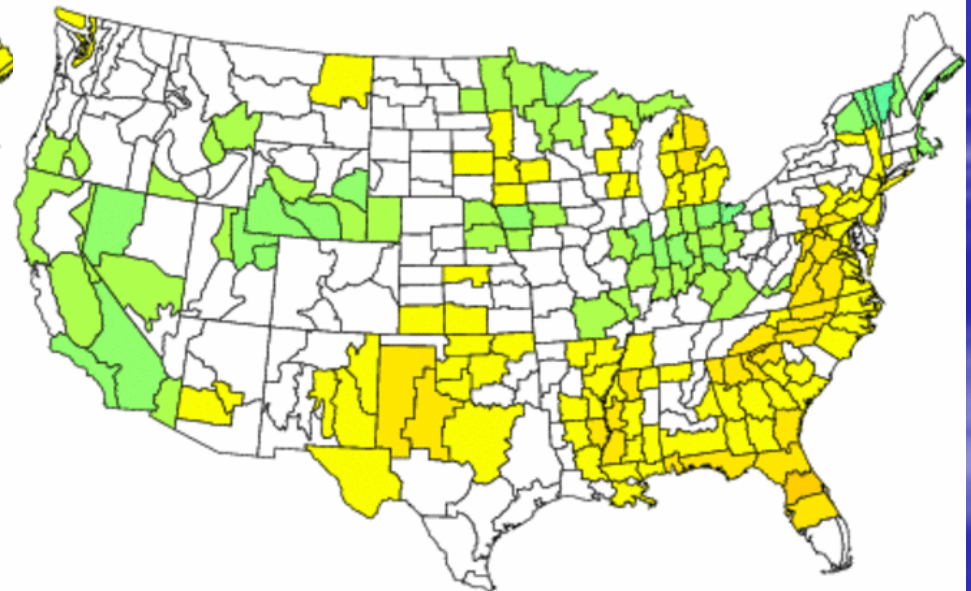
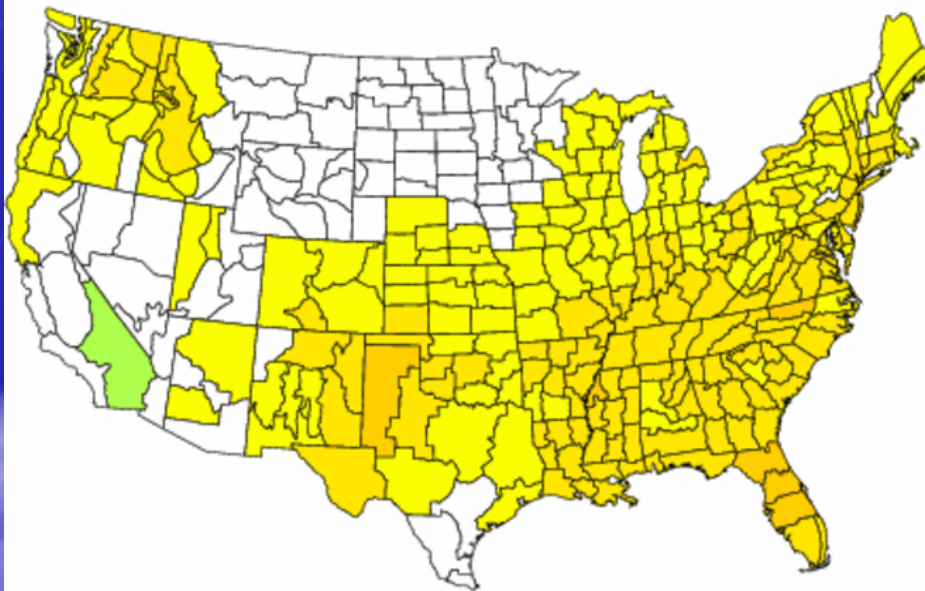
Jun – Jul - Aug

Temperature

Precipitation

Composite Standardized Temperature Anomalies
Jun to Aug 1973,1983,1998,1958,1966,1977,1952
Versus 1950–1995 Longterm Average

Composite Standardized Precipitation Anomalies
Jun to Aug 1973,1983,1998,1958,1966,1977,1952
Versus 1950–1995 Longterm Average



NOAA/ESRL PSD and CIRES–CDC

-4.00 -3.50 -3.00 -2.50 -2.00 -1.50 -1.00 -0.50 0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00

NOAA/ESRL PSD and CIRES–CDC

-4.00 -3.50 -3.00 -2.50 -2.00 -1.50 -1.00 -0.50 0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00

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*"Climate is what you expect;
weather is what you get"*

- Robert A. Heinlein

Questions?

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