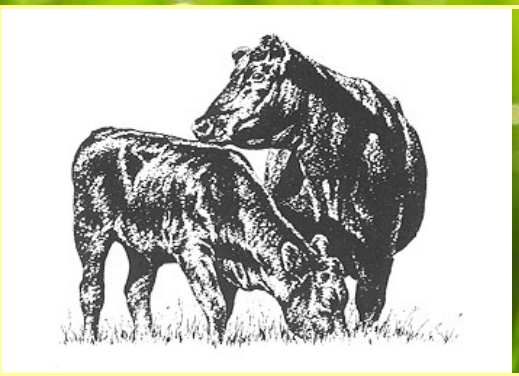
DROUGHT:

An update and status report



Nolan Doesken
Colorado Climate Center

Presented to: Colorado Cattleman's Association, Pueblo, CO, June 19, 2006

http://ccc.atmos.colostate.edu

Prepared by Odie Bliss

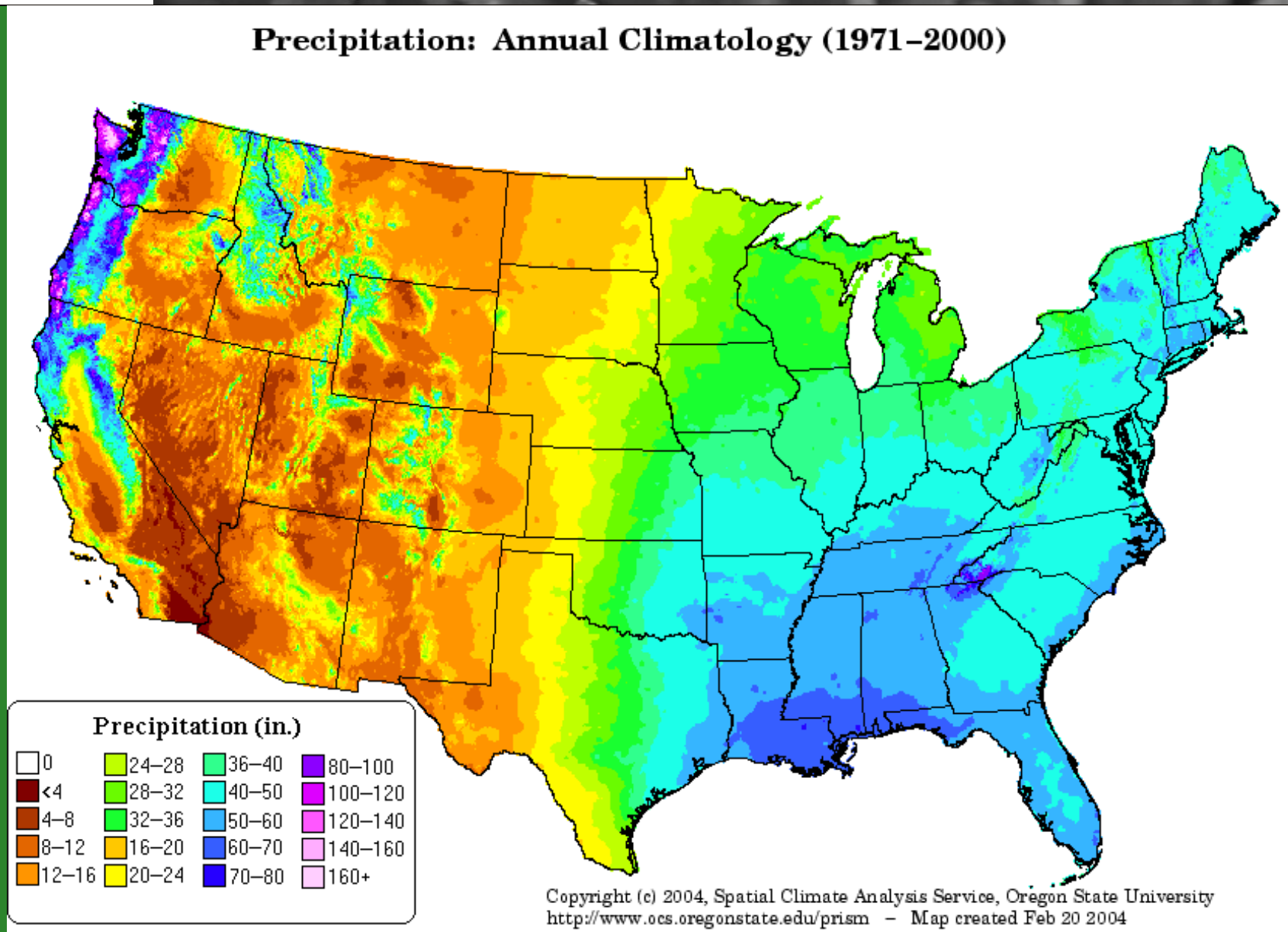
Colorado Climate Center

Colorado State University
Knowledge to Go Places

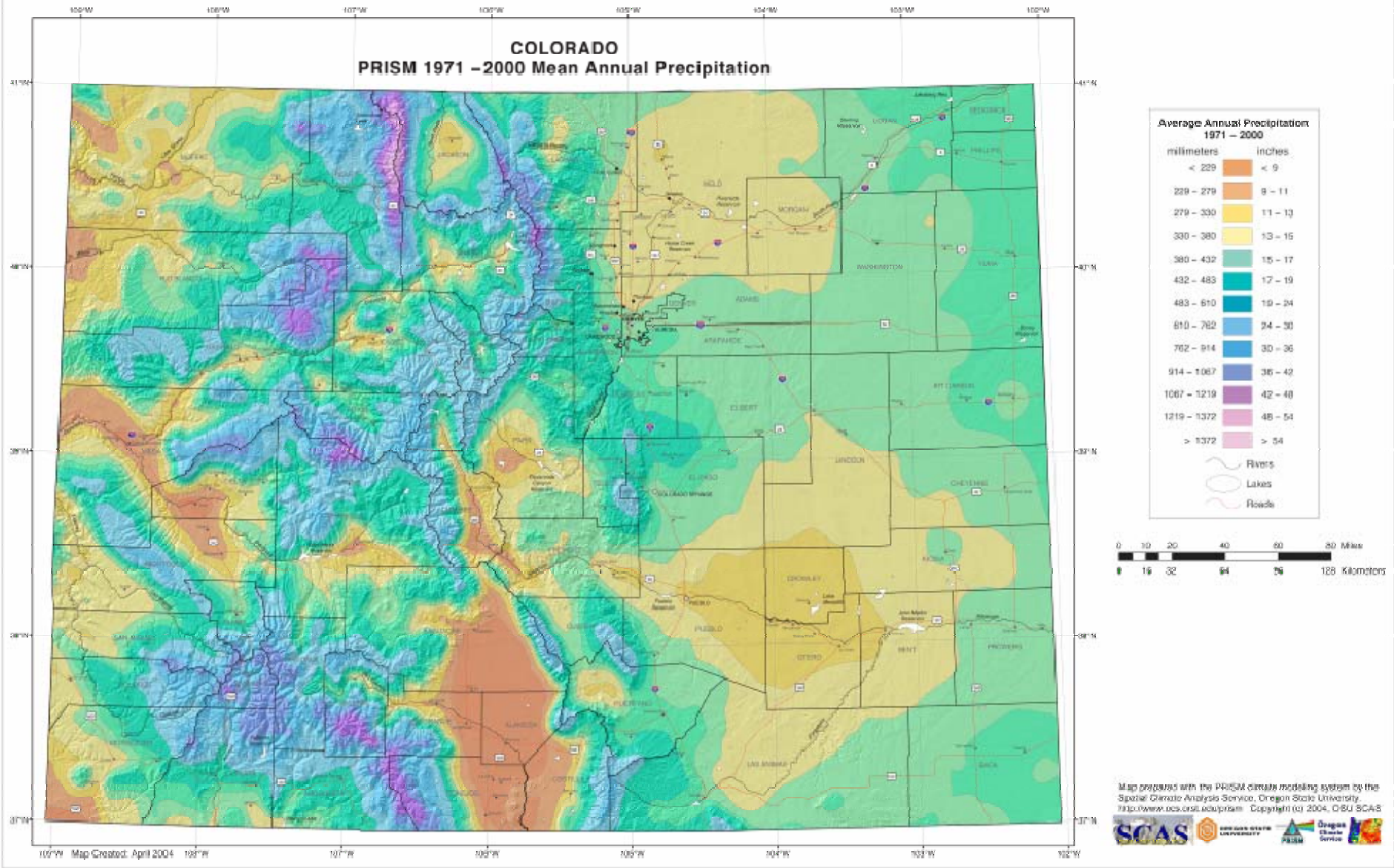
Let's Talk About Precipitation

Strasburg, Colo, Photo by Ian Wittmeyer

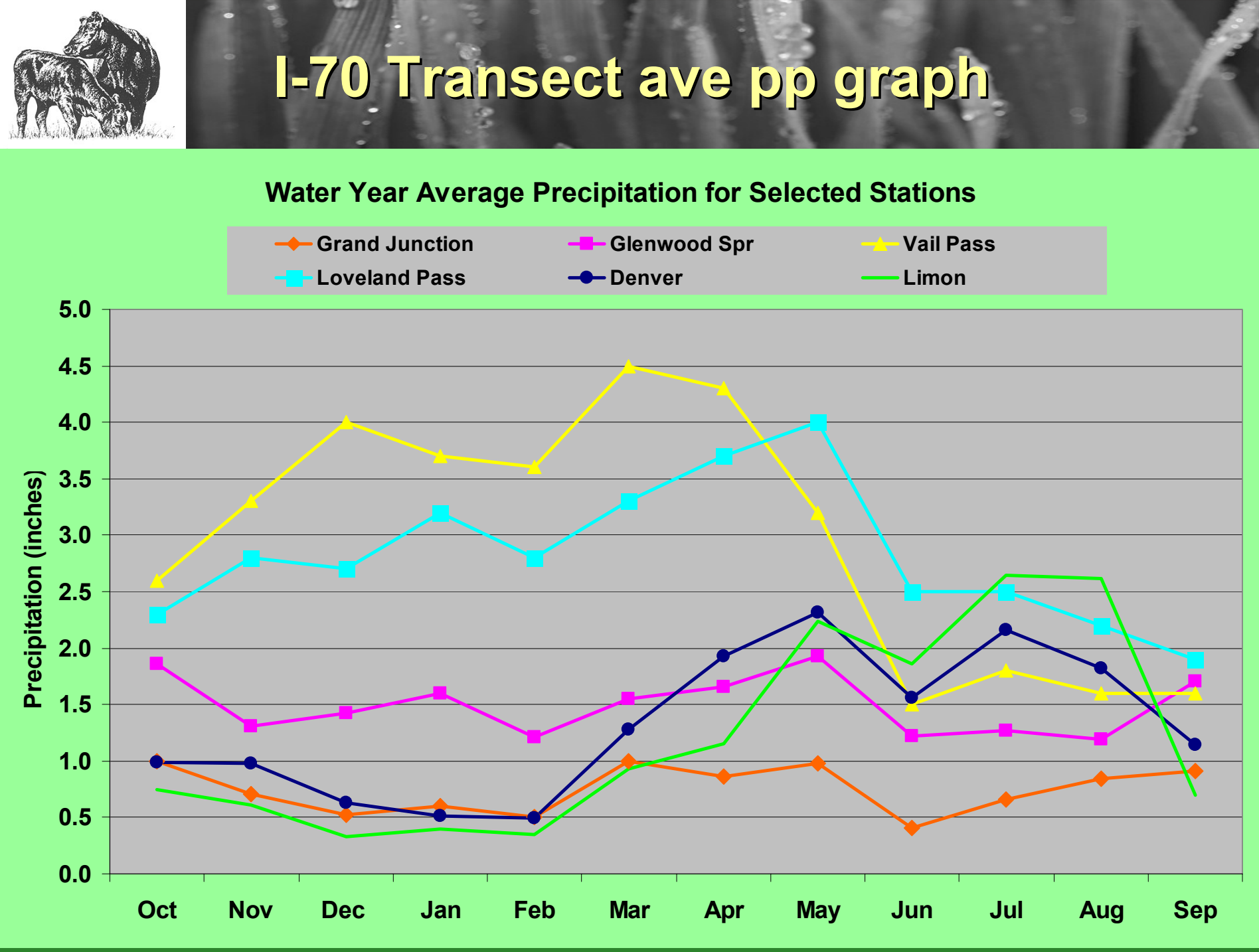
Precipitation: Annual Climatology (1971-2000)



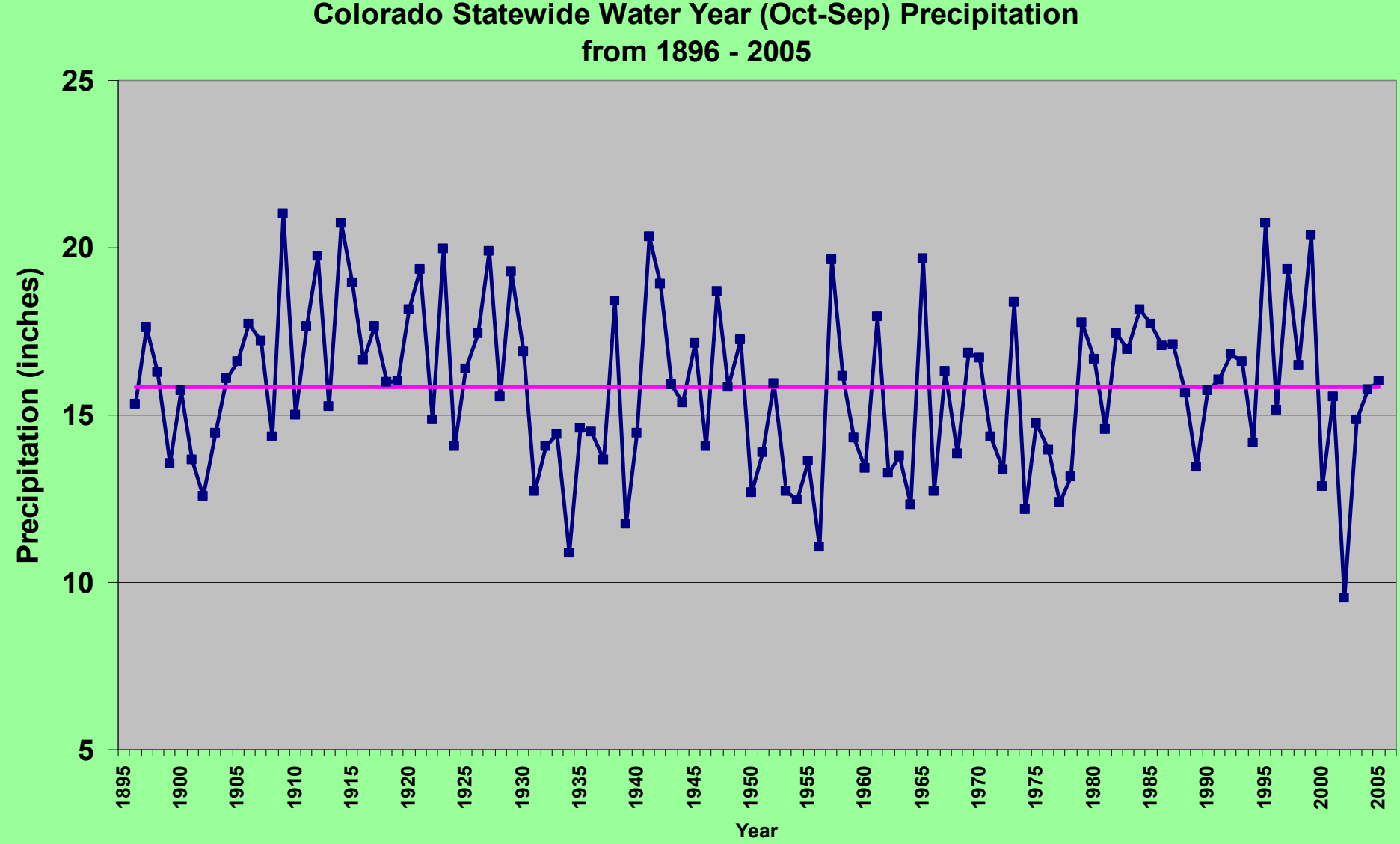
Colorado Average Annual Precipitation



I-70 Transect ave pp graph

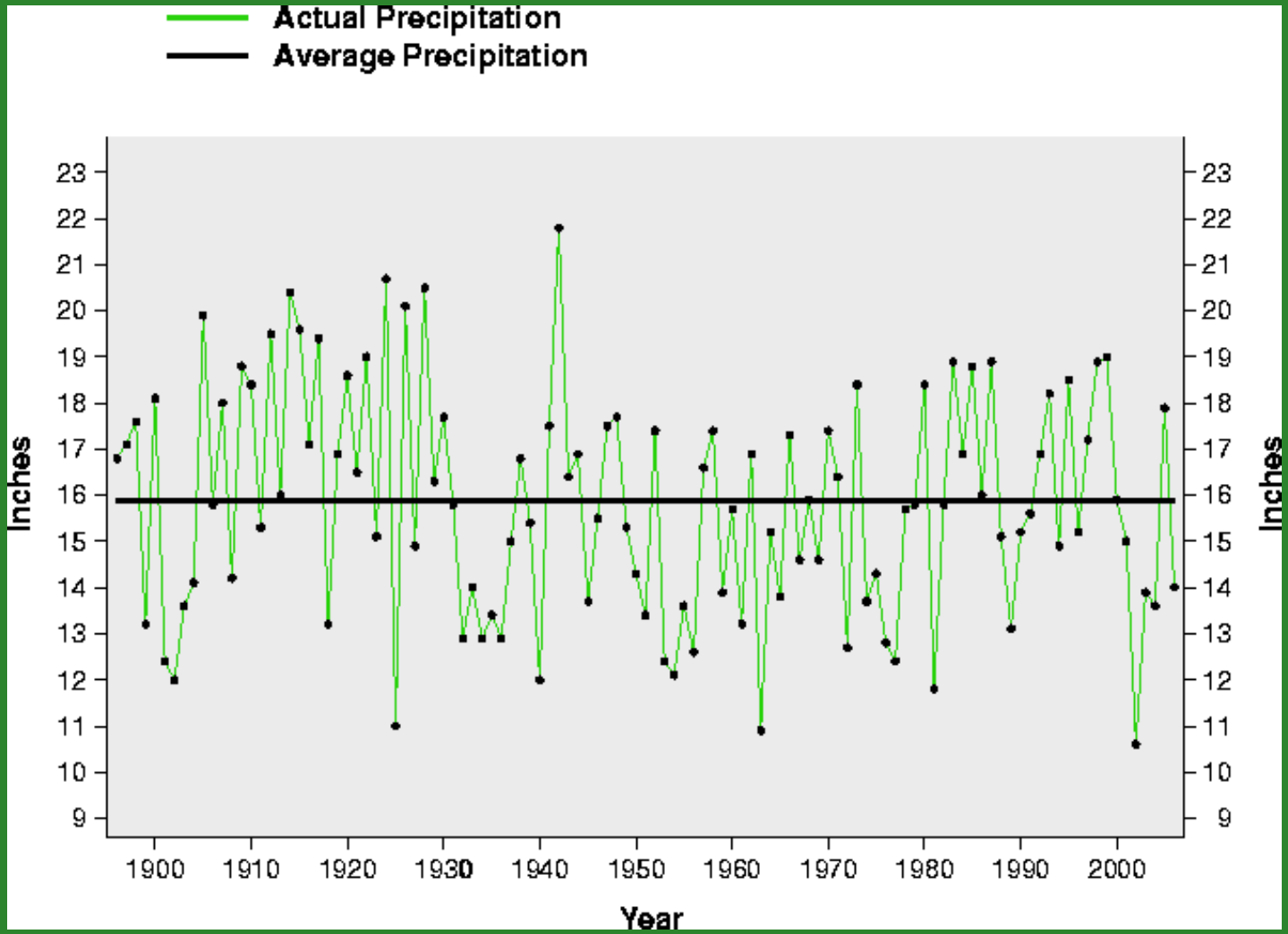


Have We Been Average?

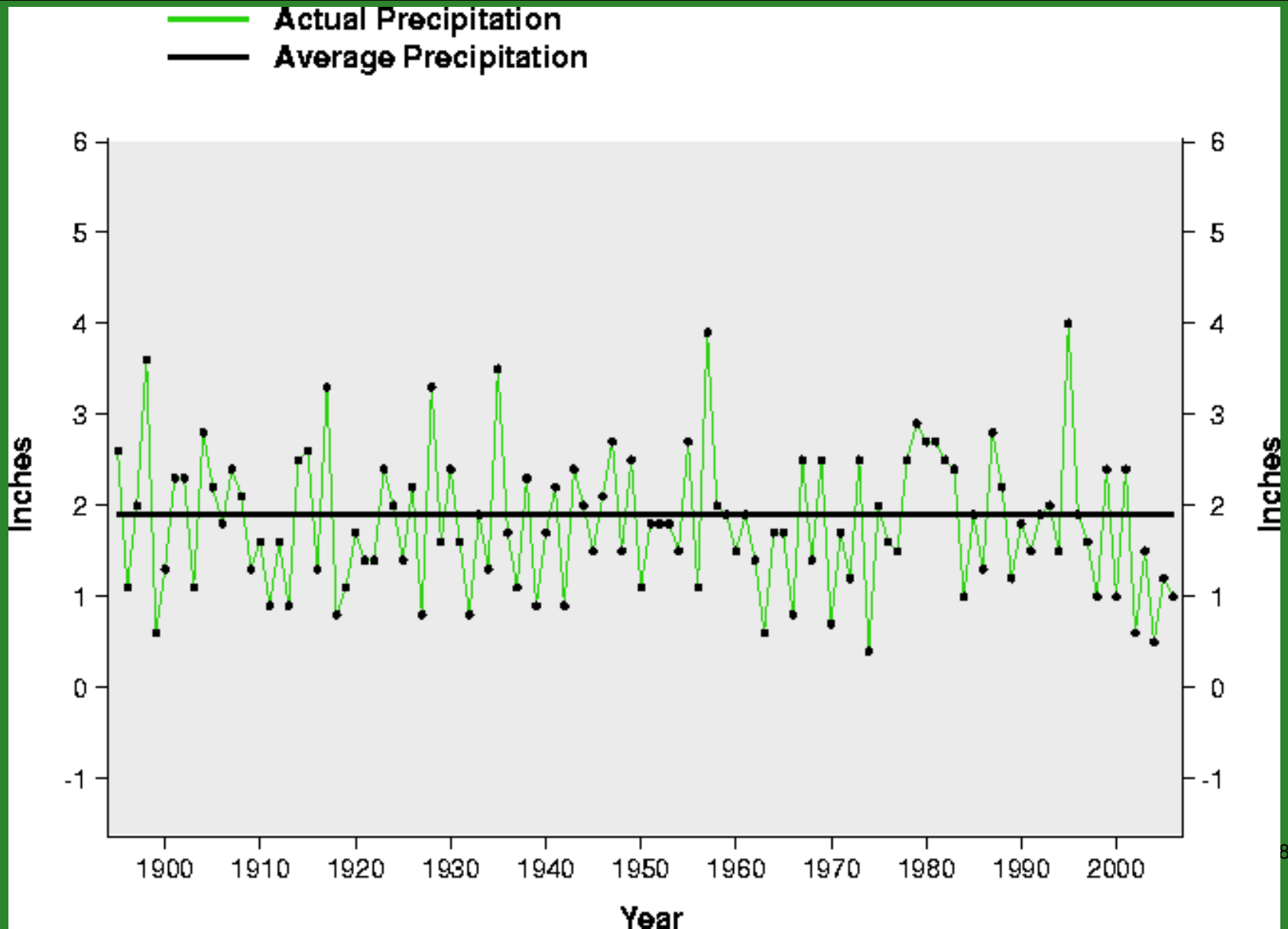


Jun-May (12-Month Period) Statewide Precipitation

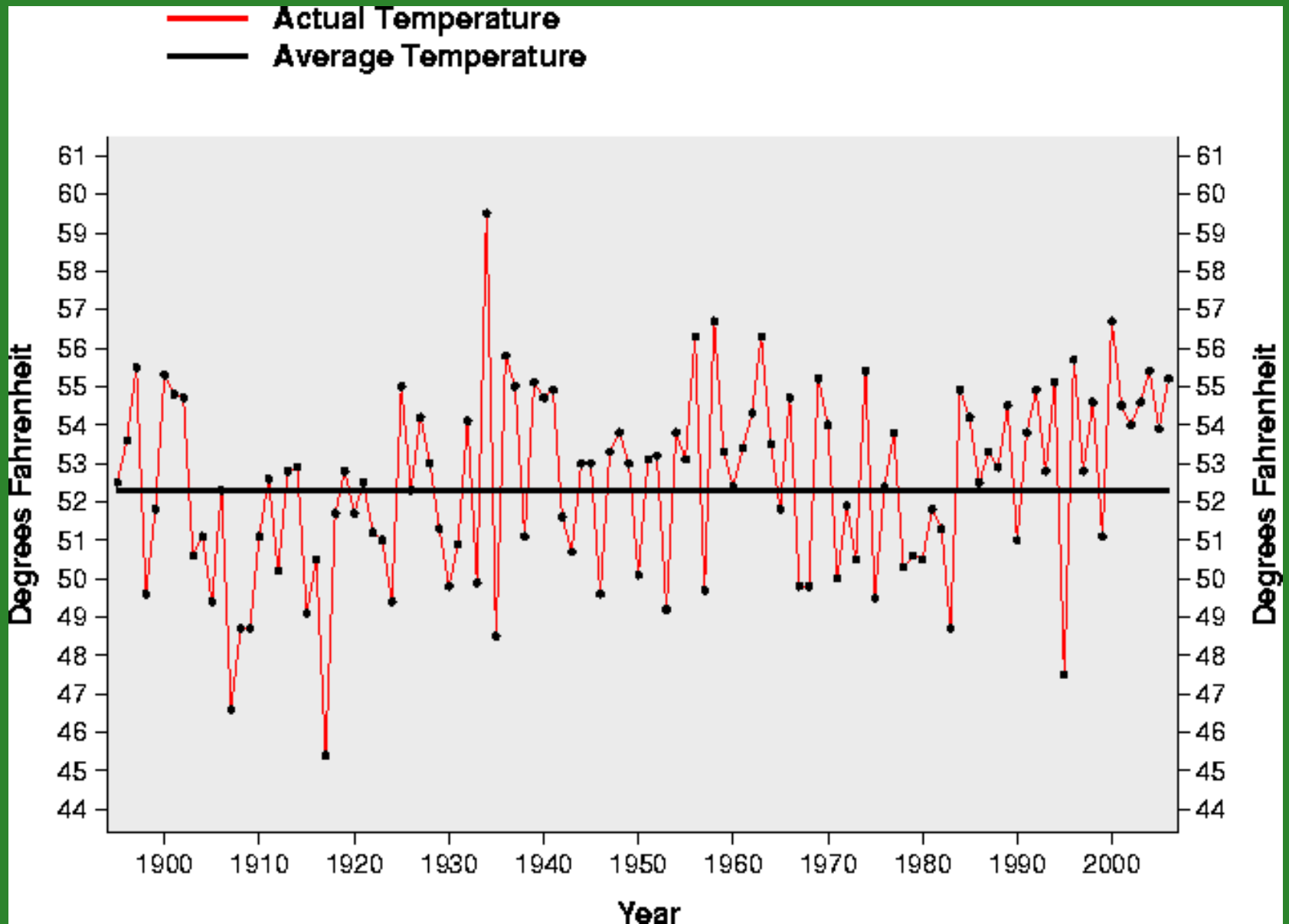
- Most Recent 12-Month Period (Jun - May) 1901 - 2000 Average = 15.89 Inches
  Most Recent 12-Month Period (Jun - May) 1896 - 2006 Trend = -0.09 Inches / Decade



Colorado Statewide May Precipitation 1895-2006

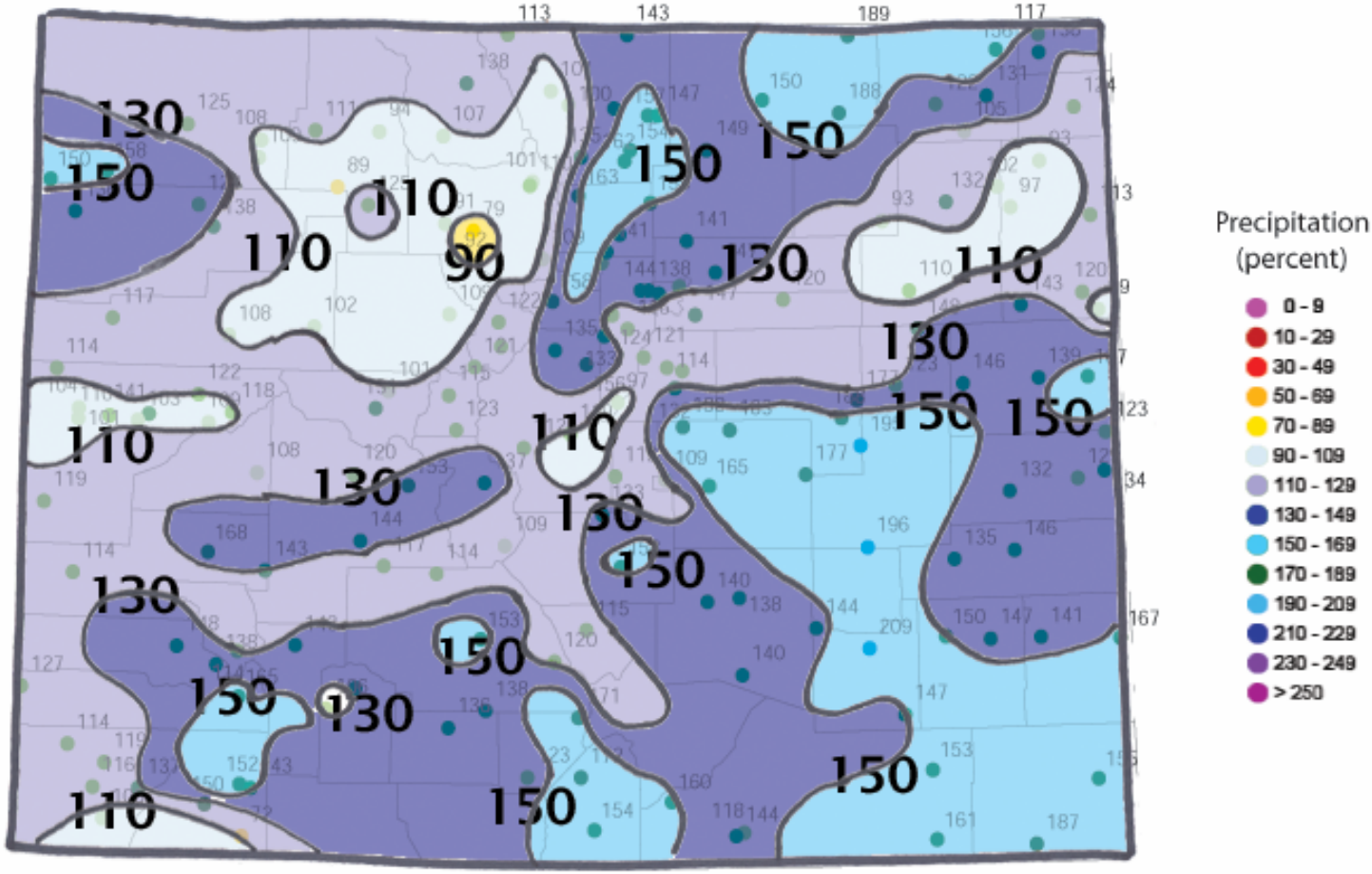


Colorado Statewide May Average Temperatures 1895-2006

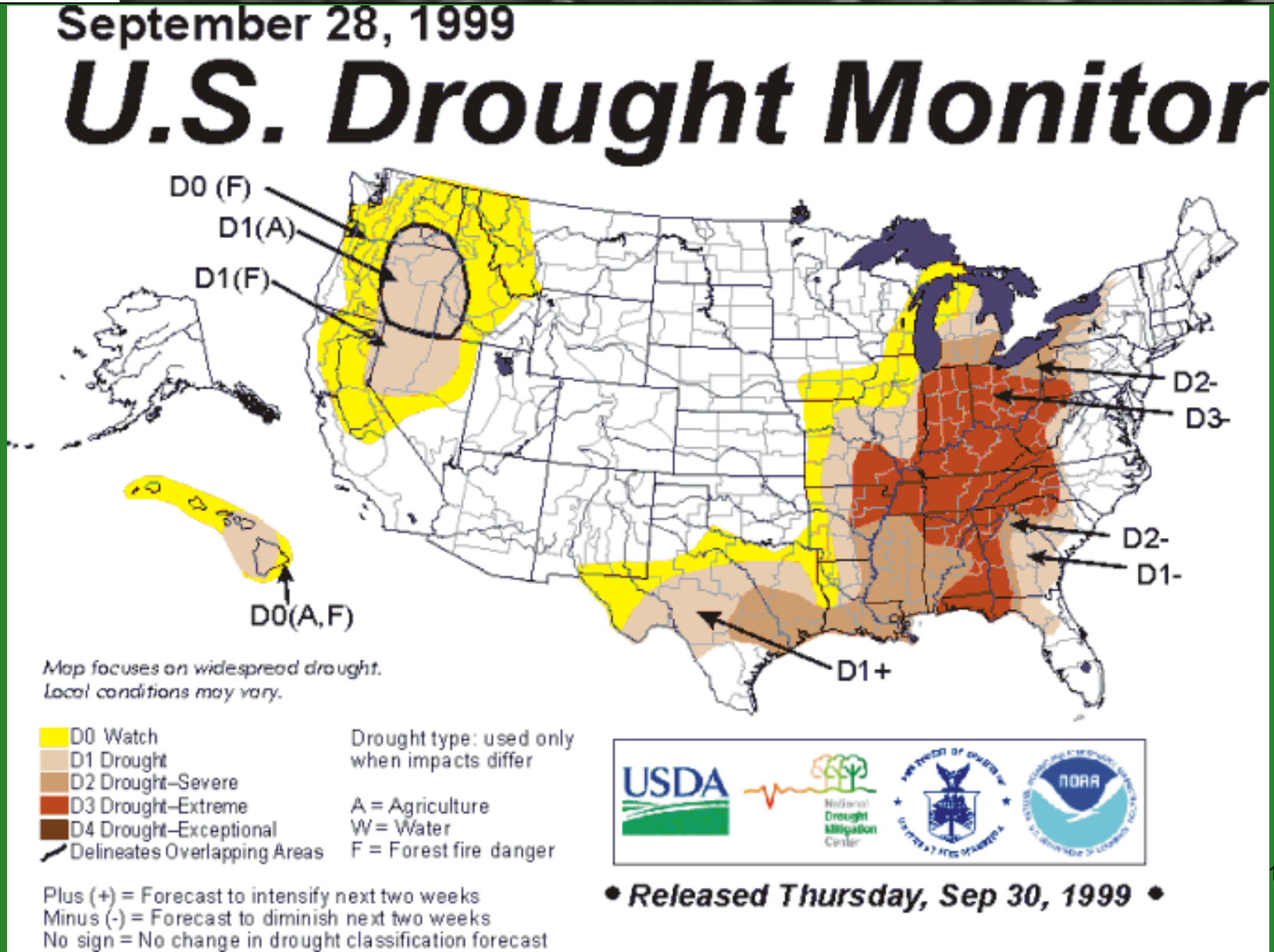


1999 Water Year Precipitation

Water Year 1999
(Oct. 1998-Sept. 1999)
Precipitation Precent of Average for 1961-1990 Averages

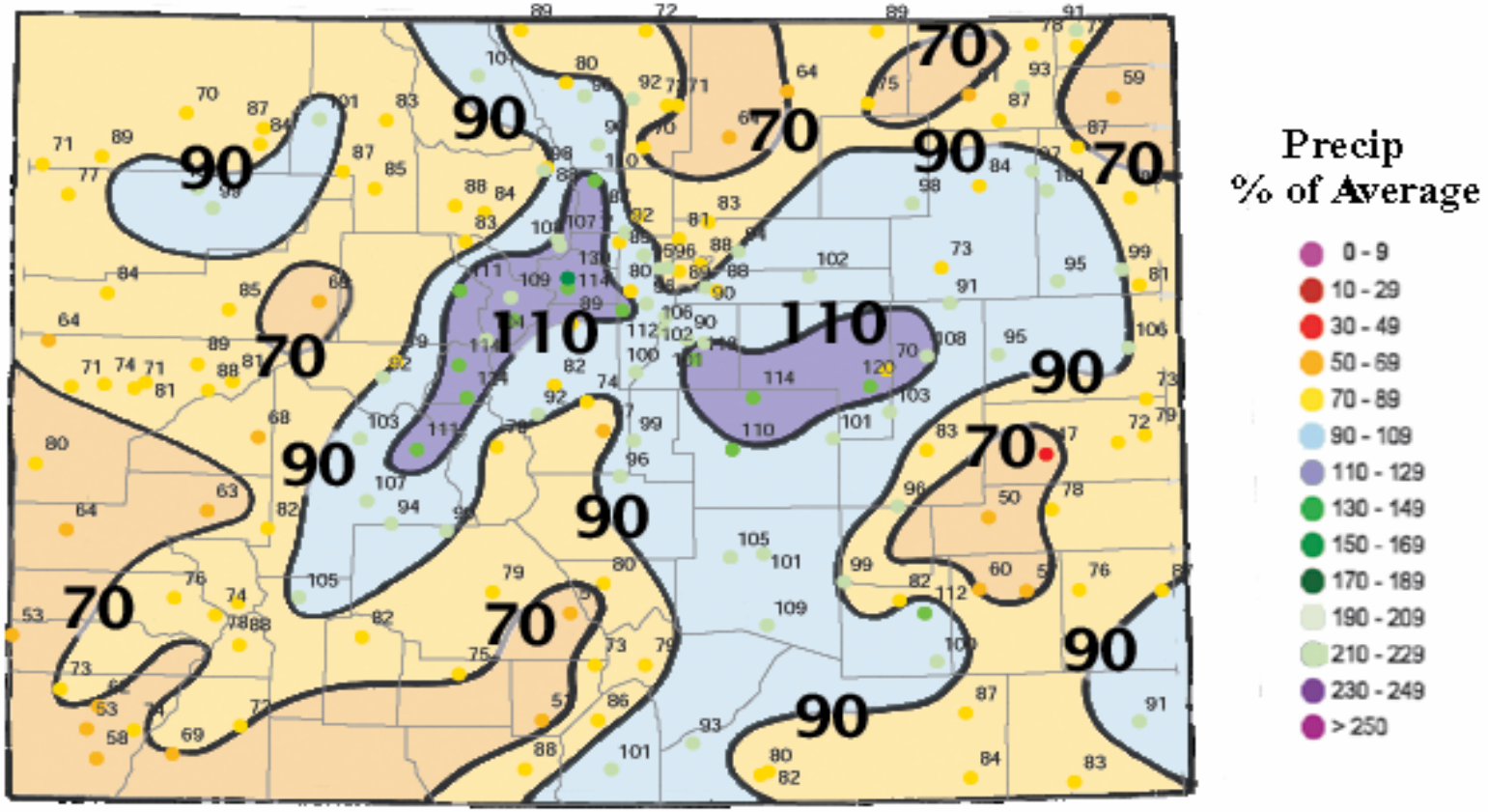


Sept 1999 Drought Monitor Map

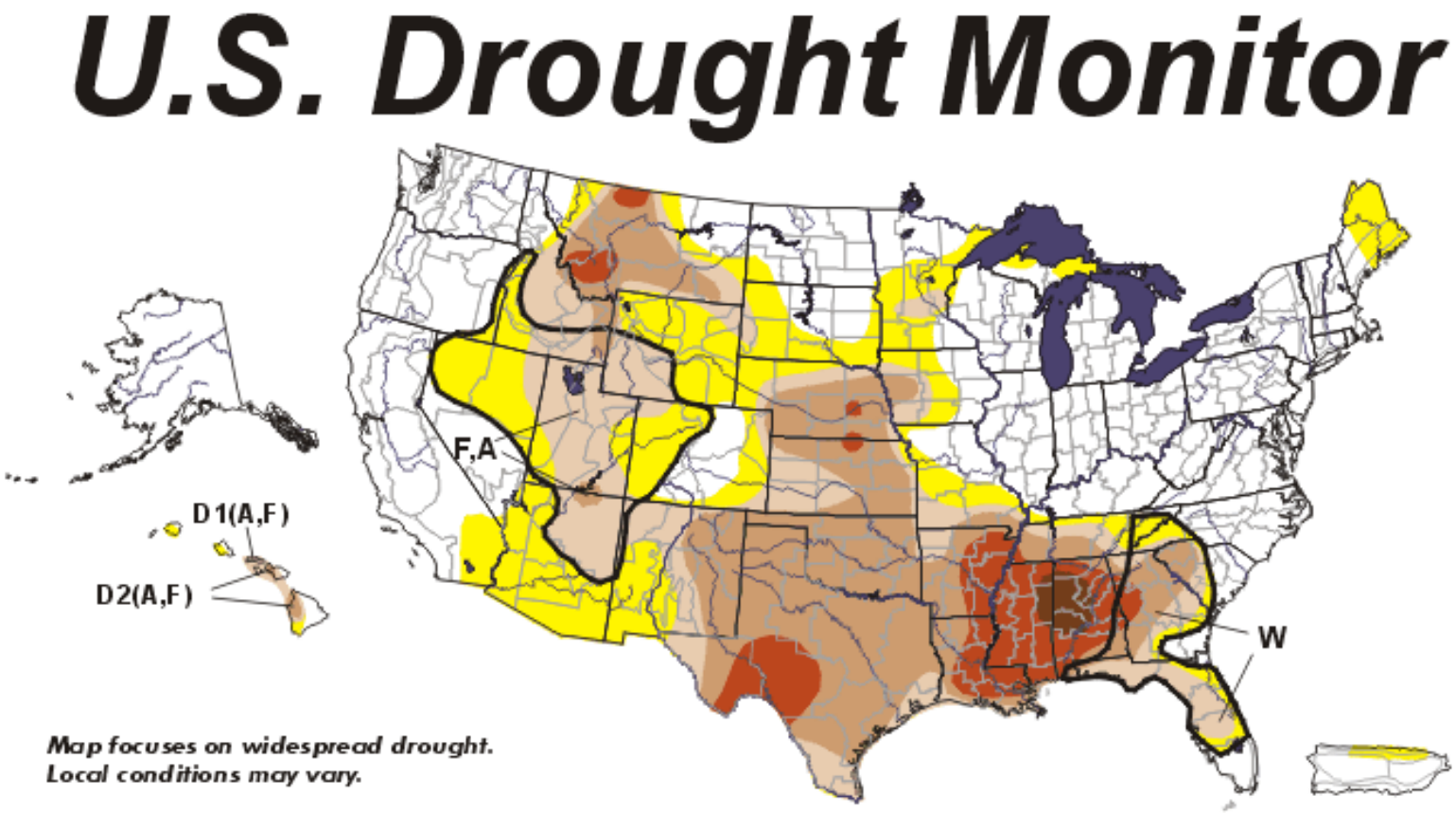


2000 Water Year Precipitation

Water Year 2000
(Oct. 1999 - Sept. 2000)
Precipitation Percent of Average for 1961-1990 Averages

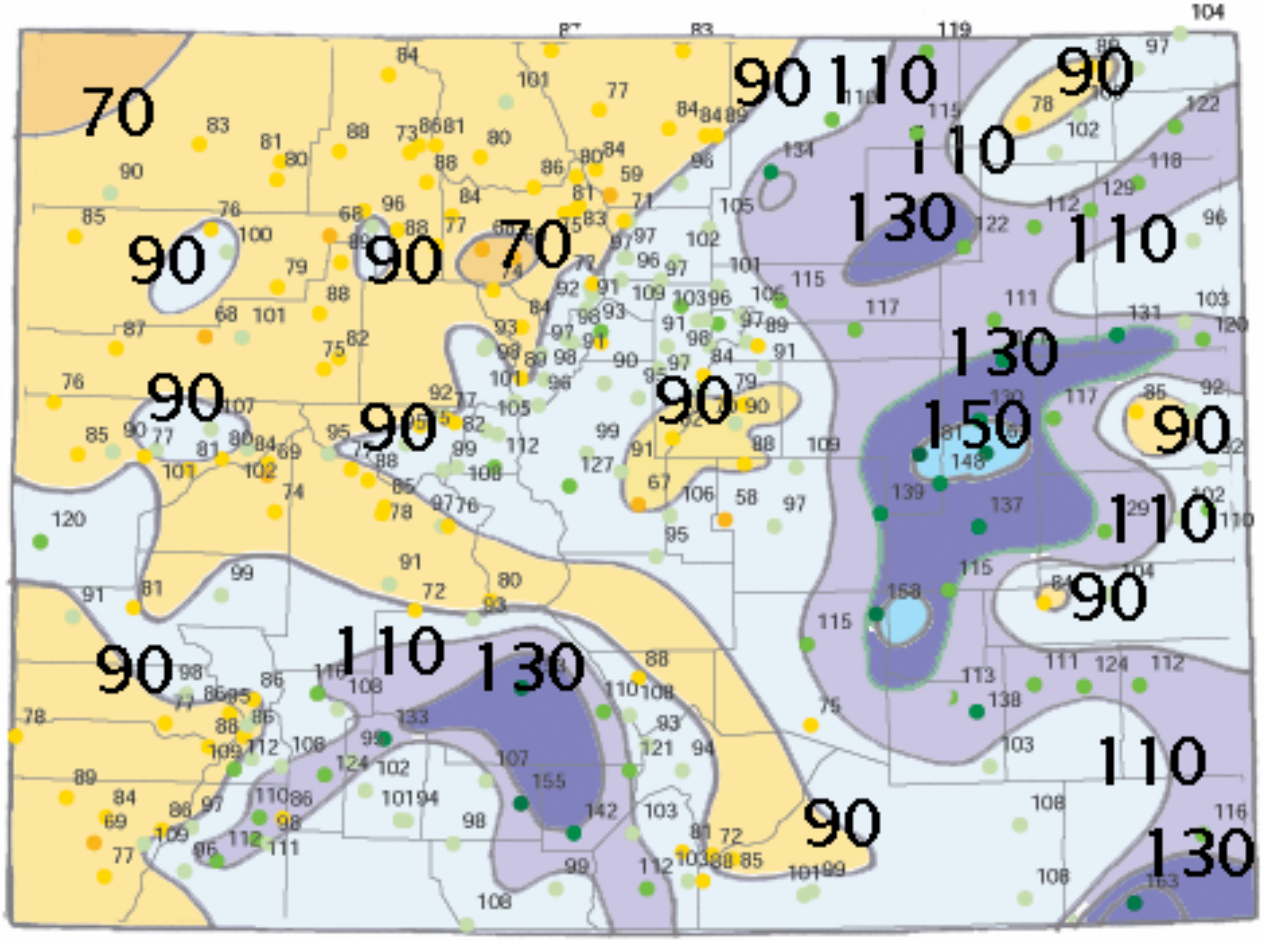


October 2000 Drought Monitor Map

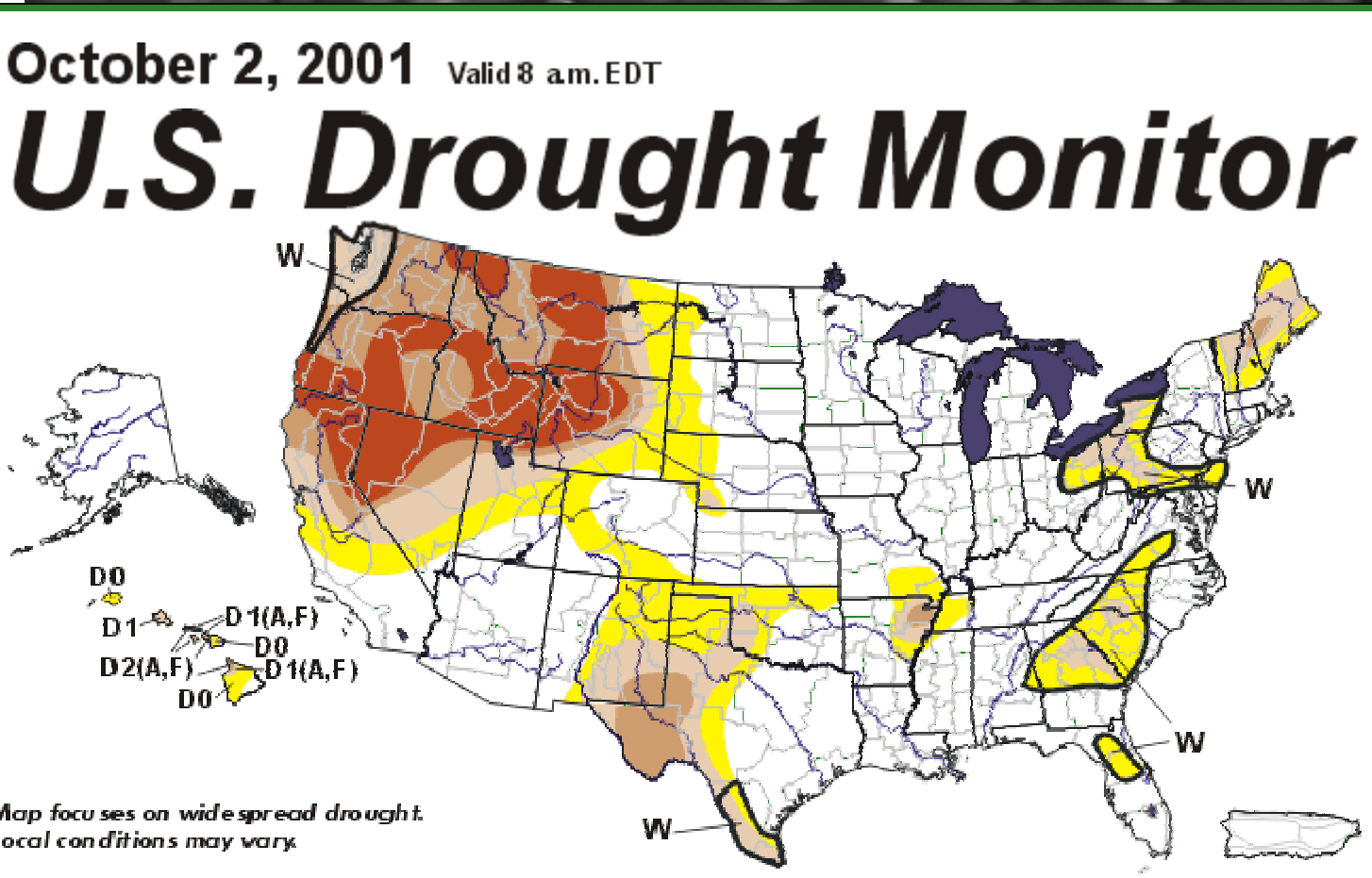


2001 Water Year Precipitation

Water Year 2001
(Oct. 2000 - Sept. 2001)
Precipitation Percent of Average for 1961-1990 Averages

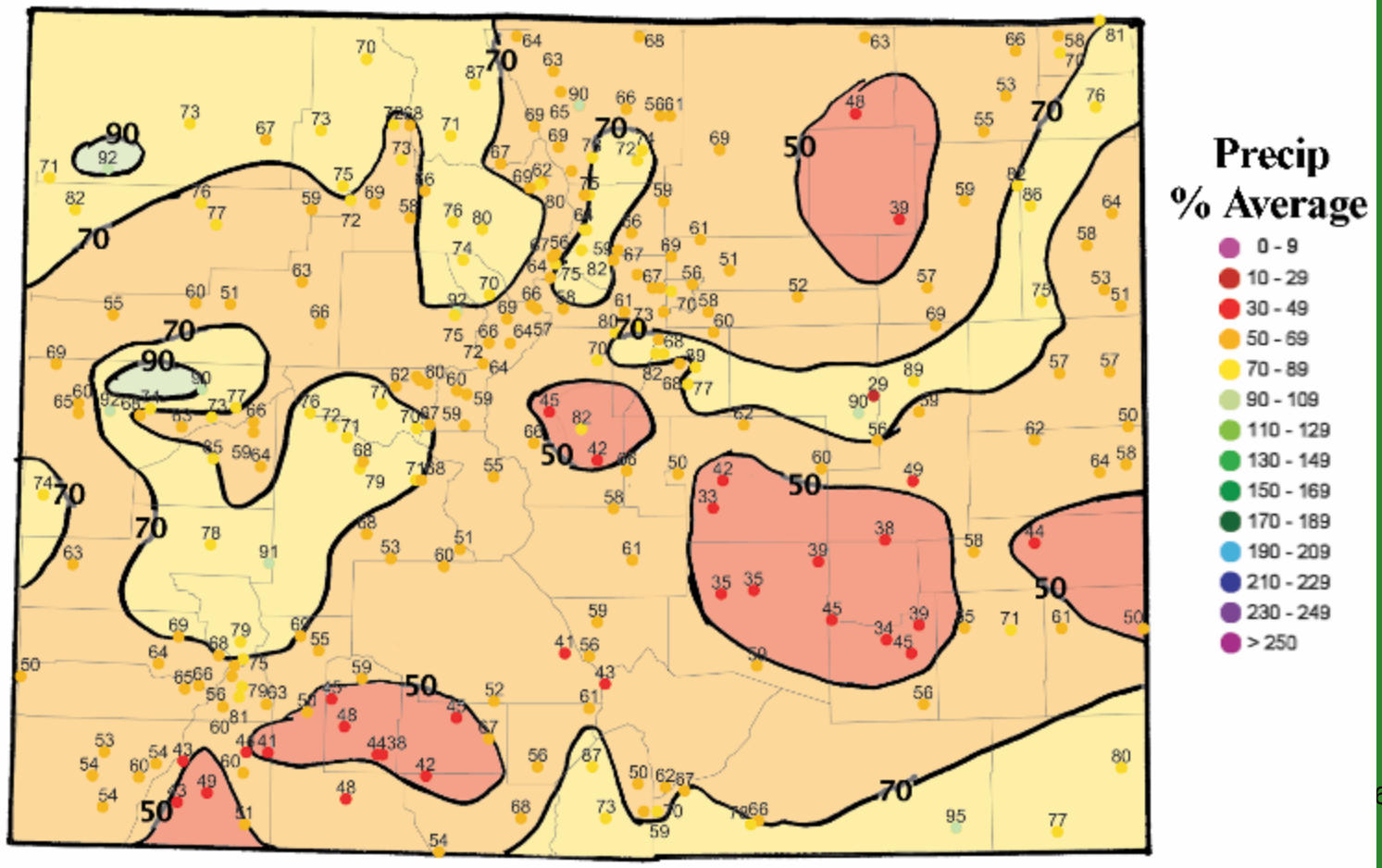


October 2001 Drought Monitor Map

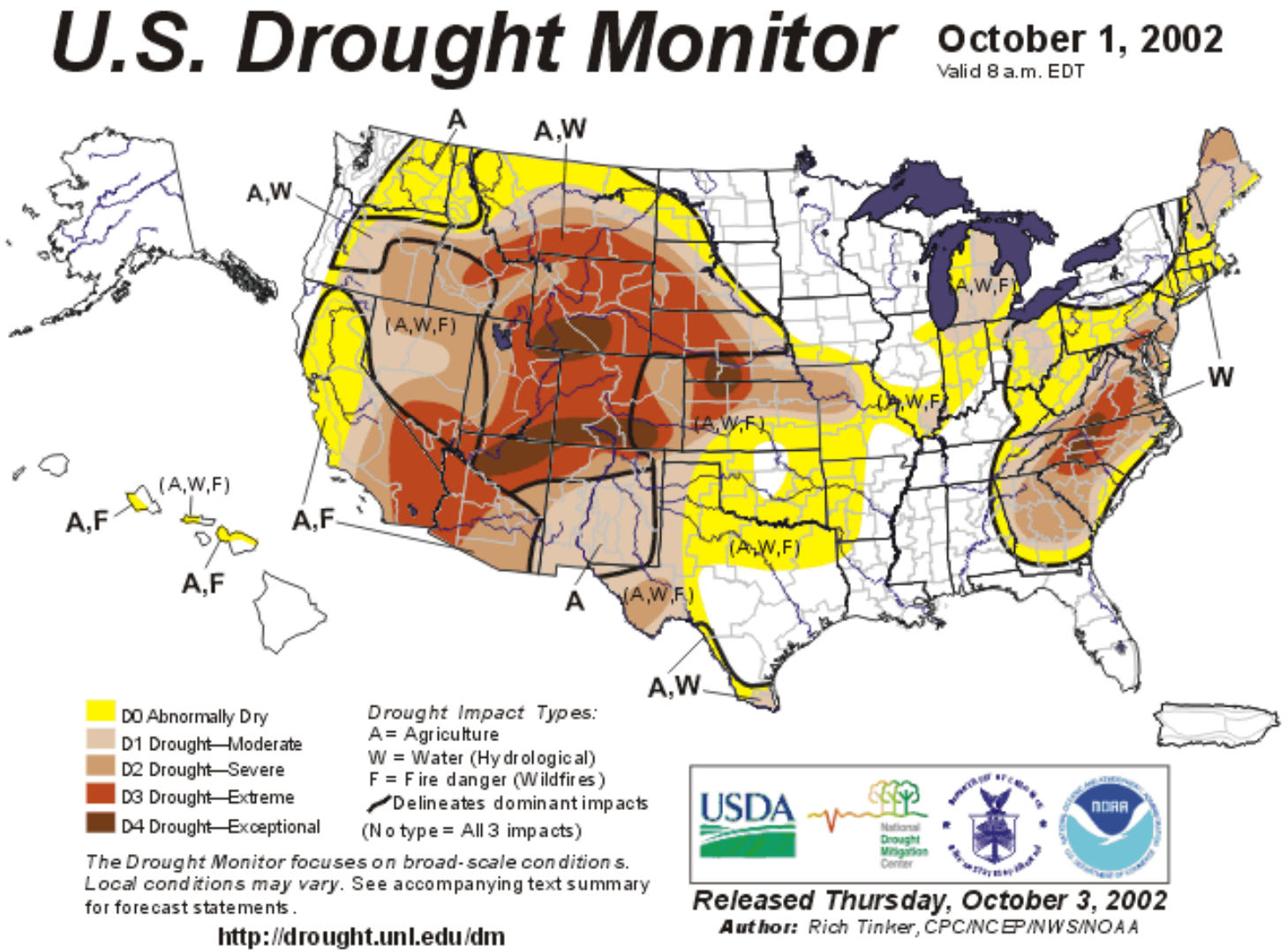


2002 Water Year Precipitation

Water Year 2002
(Oct. 2001 - Sept. 2002)
Precipitation Percent of Average for 1961-1990 Averages



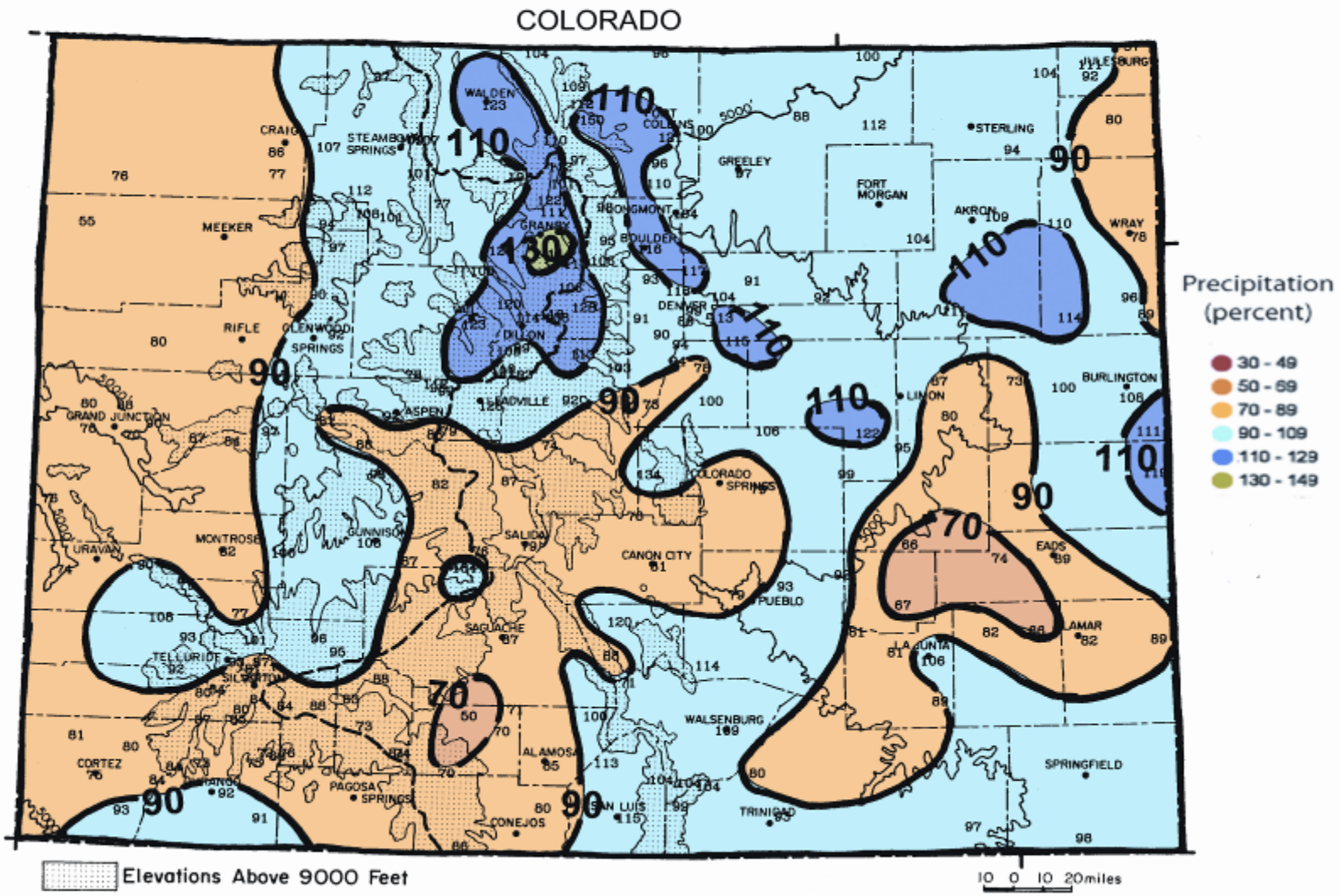
October 2002 Drought Monitor Map



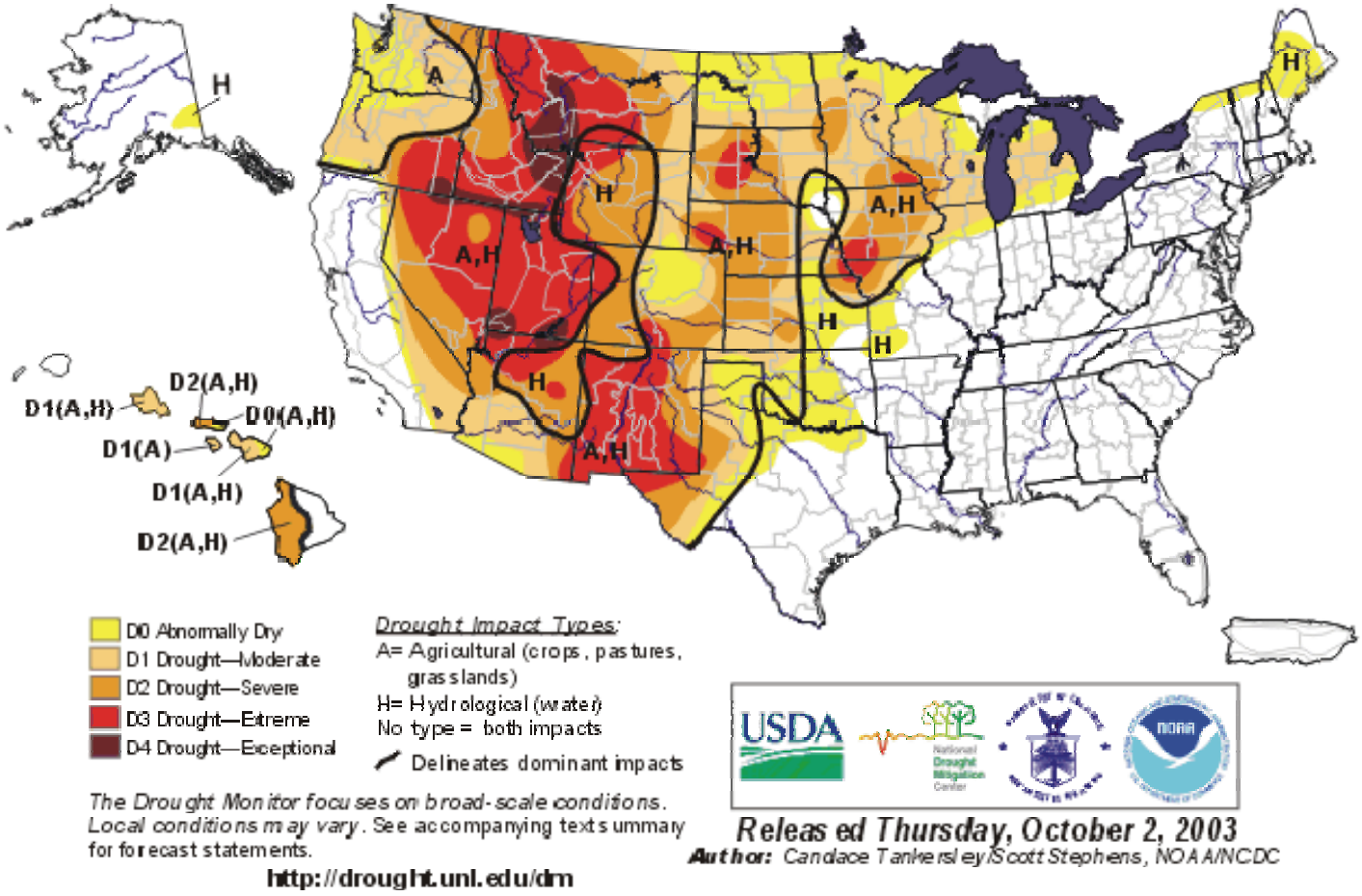
2003 Water Year Precipitation

Water Year 2003

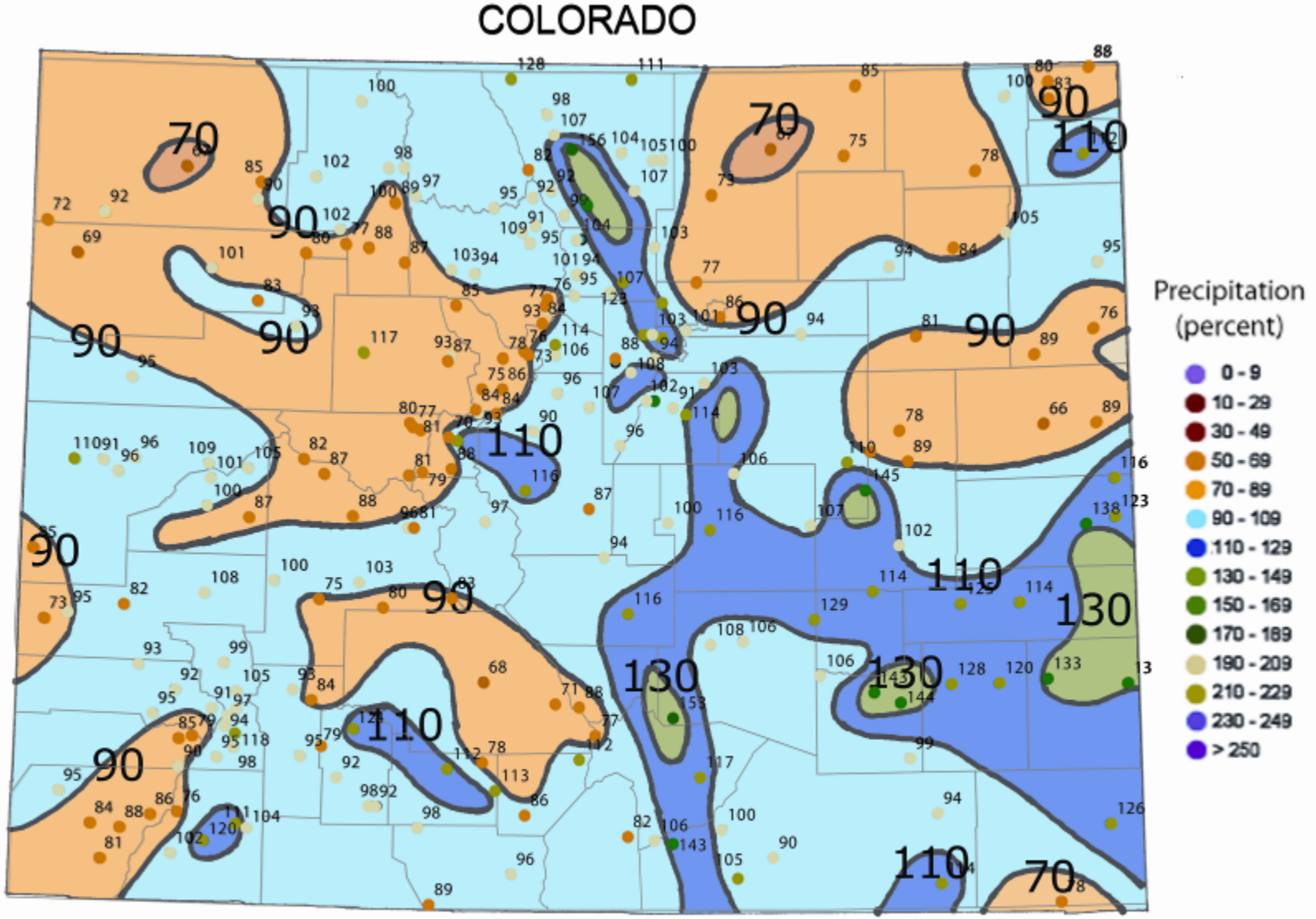
October 2002 - September 2003 precipitation
as a percent of the 1971-2000 average.



September 2003 Drought Monitor Map

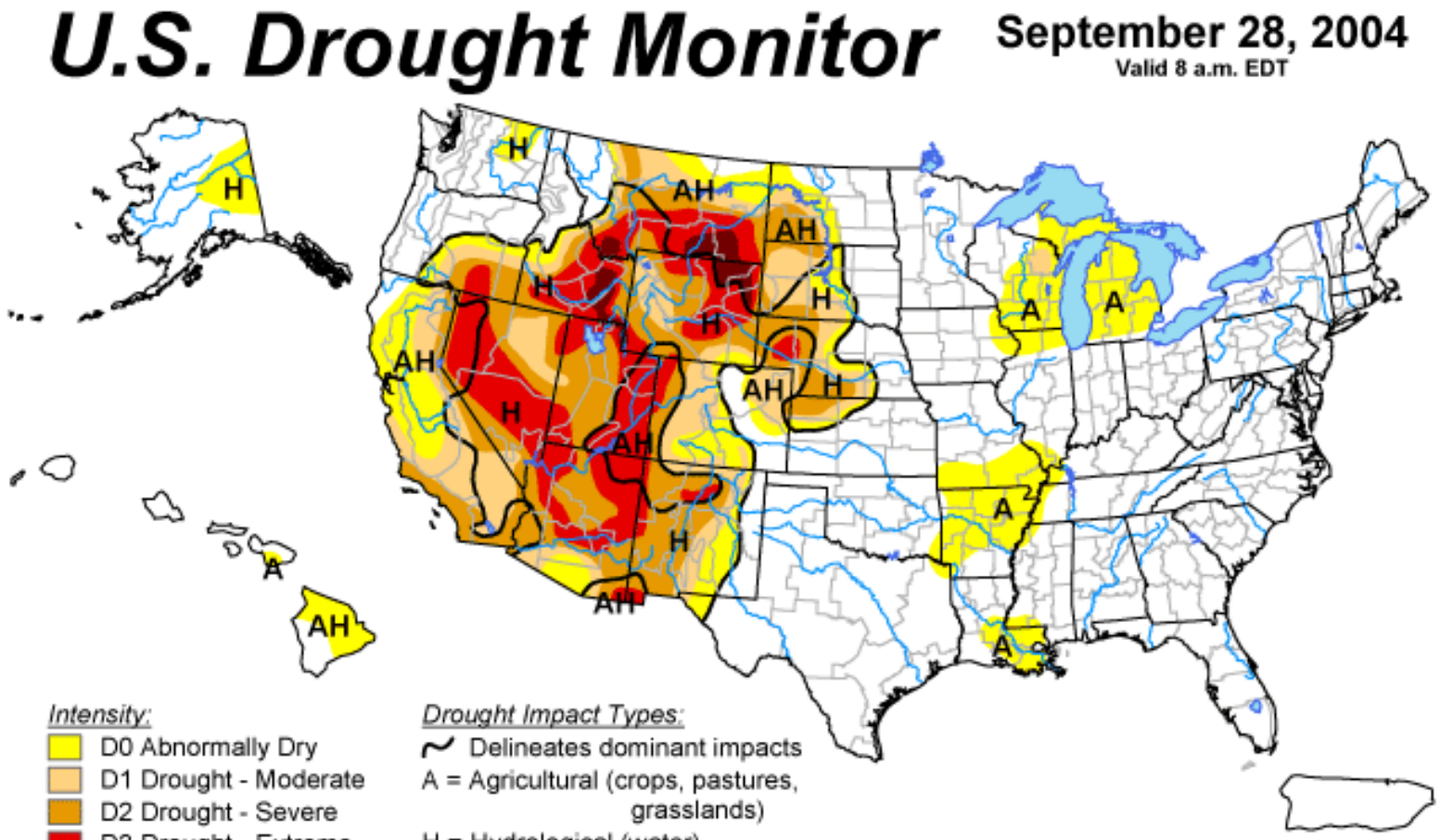


2004 Water Year Precipitation

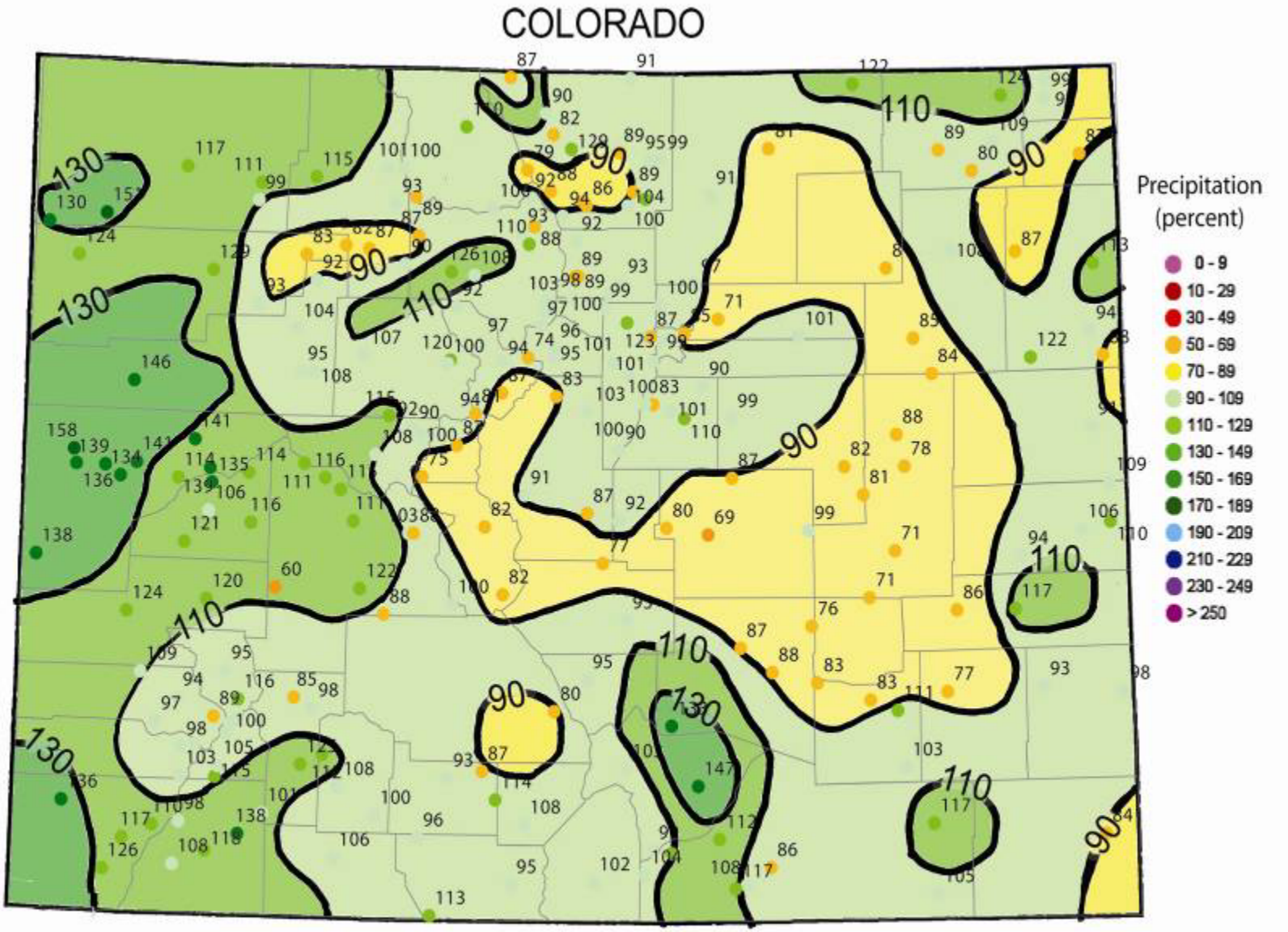


Water Year 2004 (October 2003 through September 2004) precipitation as a percent of the 1971-2000 average.

September 2004 Drought Monitor Map

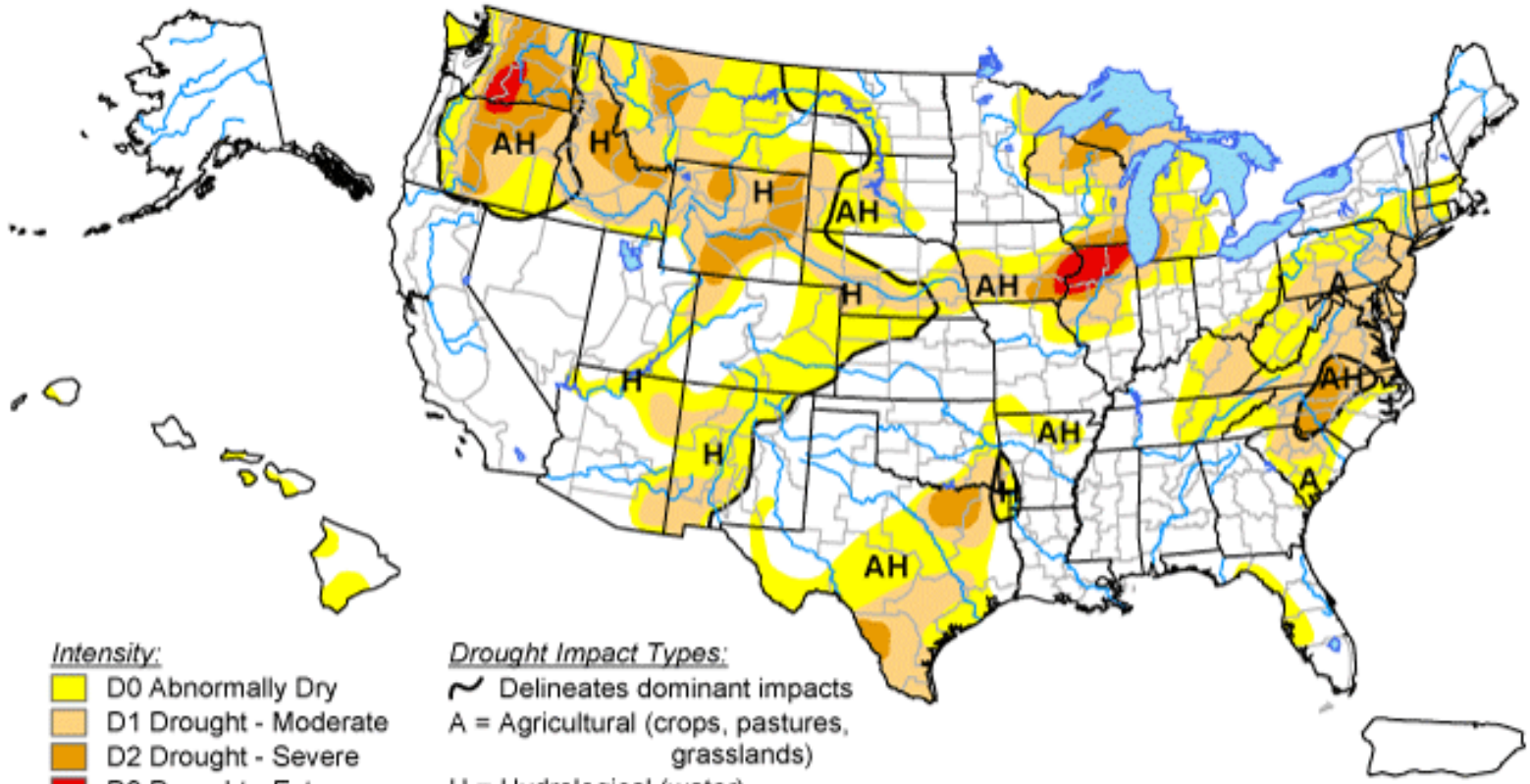


2005 Water Year Precipiation

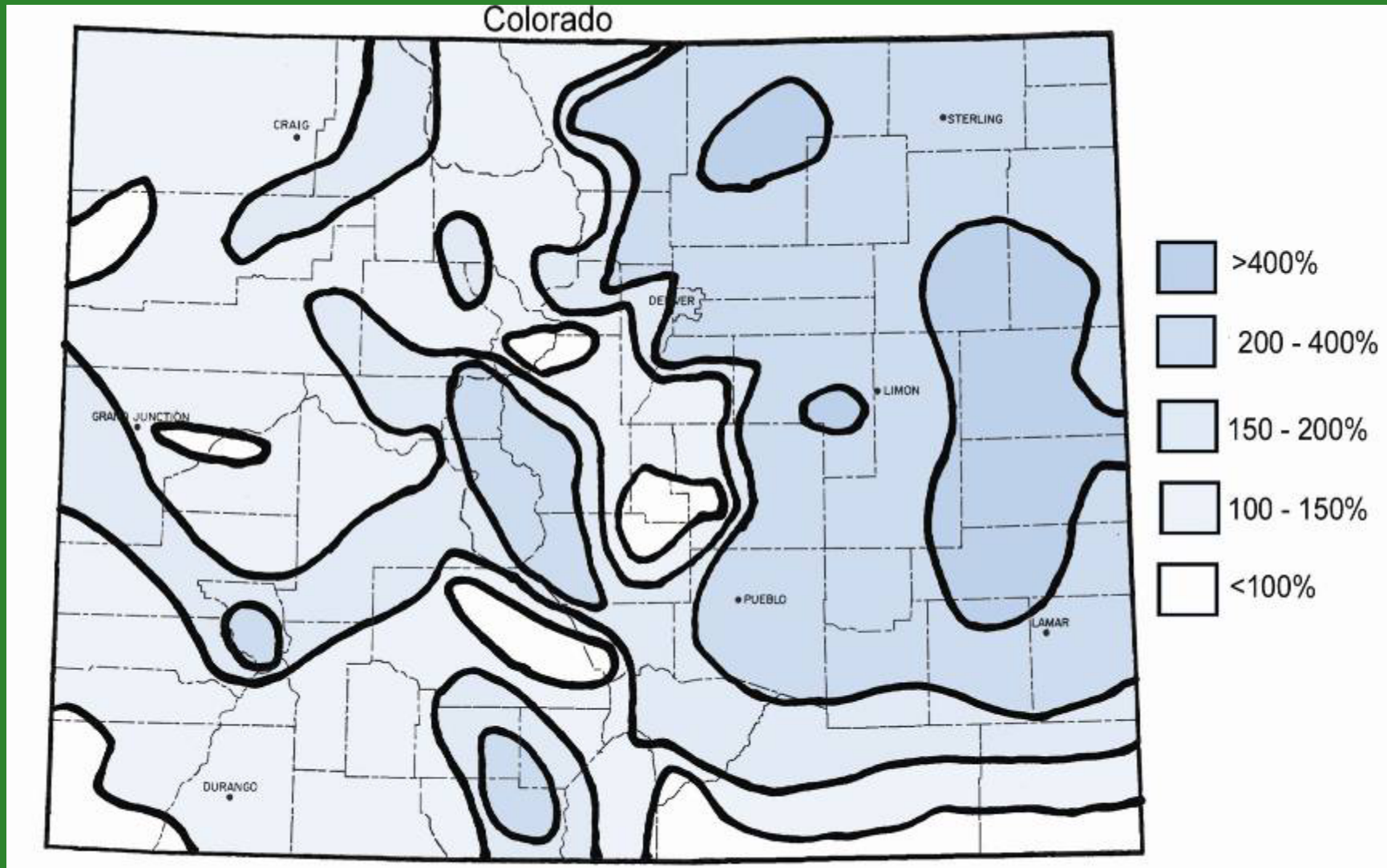


Water Year 2005 (Oct 04 - Sep 05) precipitation as a percent of the 1971-2000 average.

October 2005 Drought Monitor Map



Oct 2005 map of precipitation as percent of average

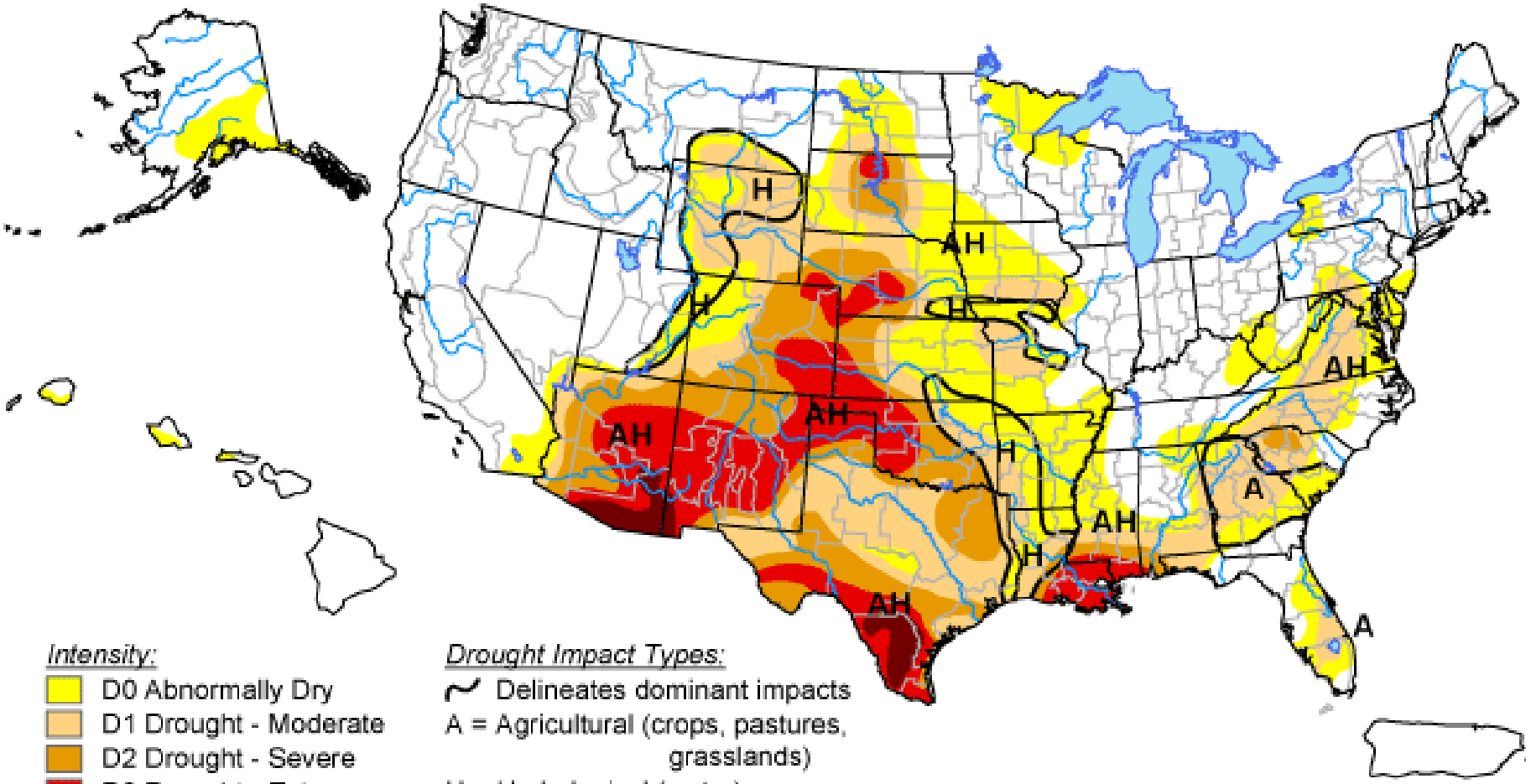


October 2005 precipitation as a percent of the 1971 - 2000 average.

What's the Status of Drought Now??

U.S. Drought Monitor

June 13, 2006
Valid 8 a.m. EDT



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:
- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

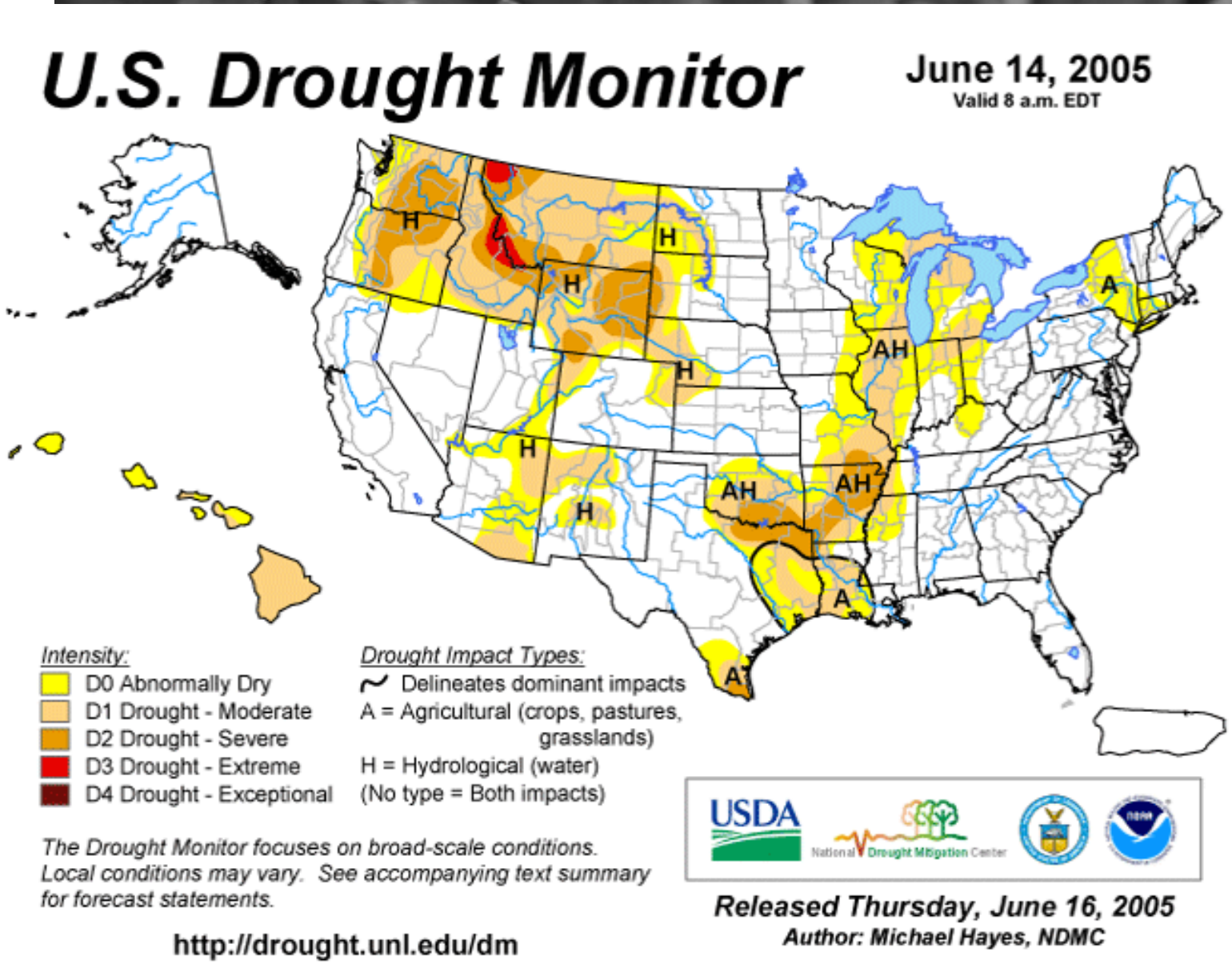
USDA National Drought Mitigation Center

Released Thursday, June 15, 2006

Author: Rich Tinker, Climate Prediction Center, NOAA

http://drought.unl.edu/dm

We've gone down hill since this time last year

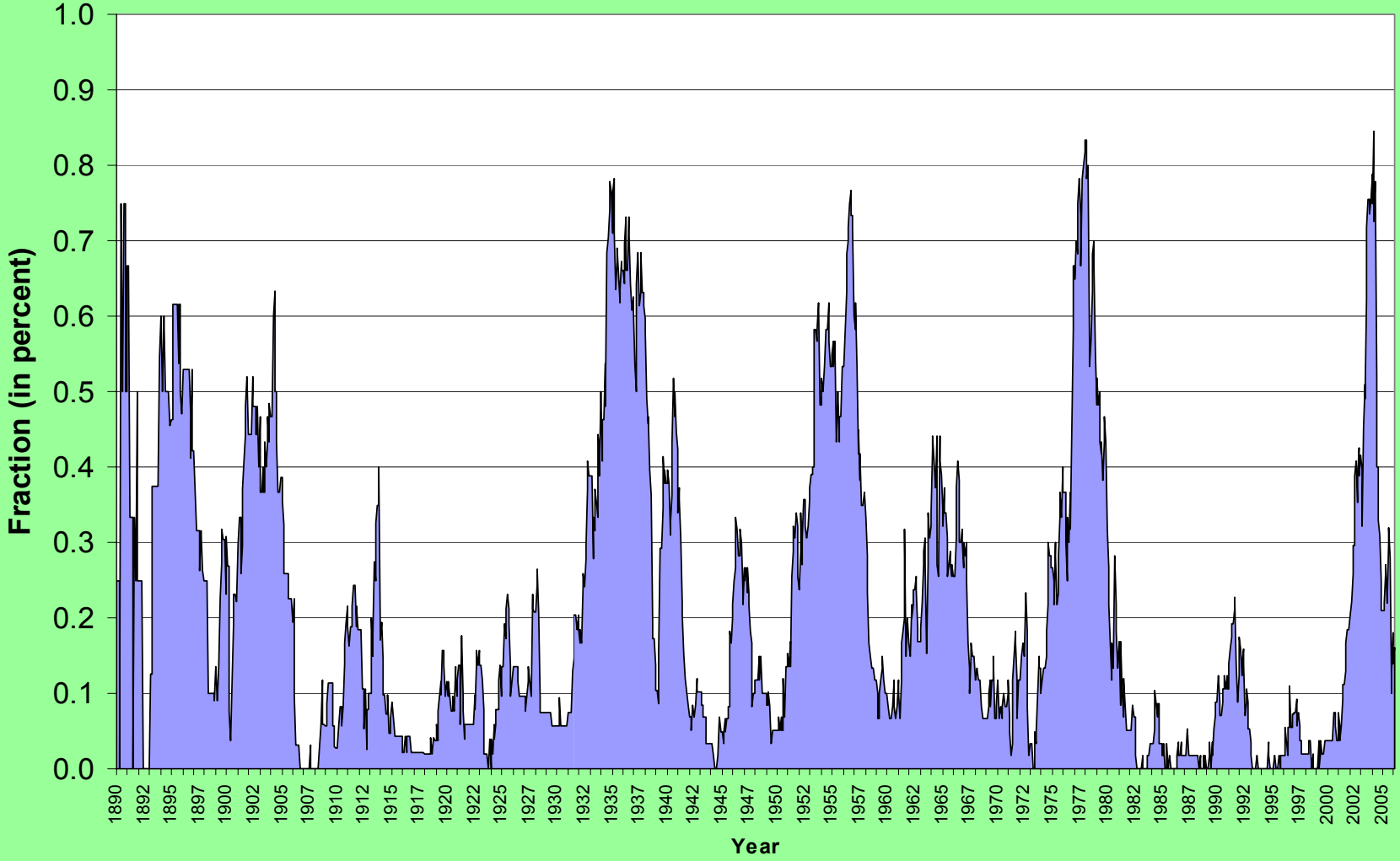


48-Month SPI

Fraction of Colorado in Drought

Based on 48 month SPI

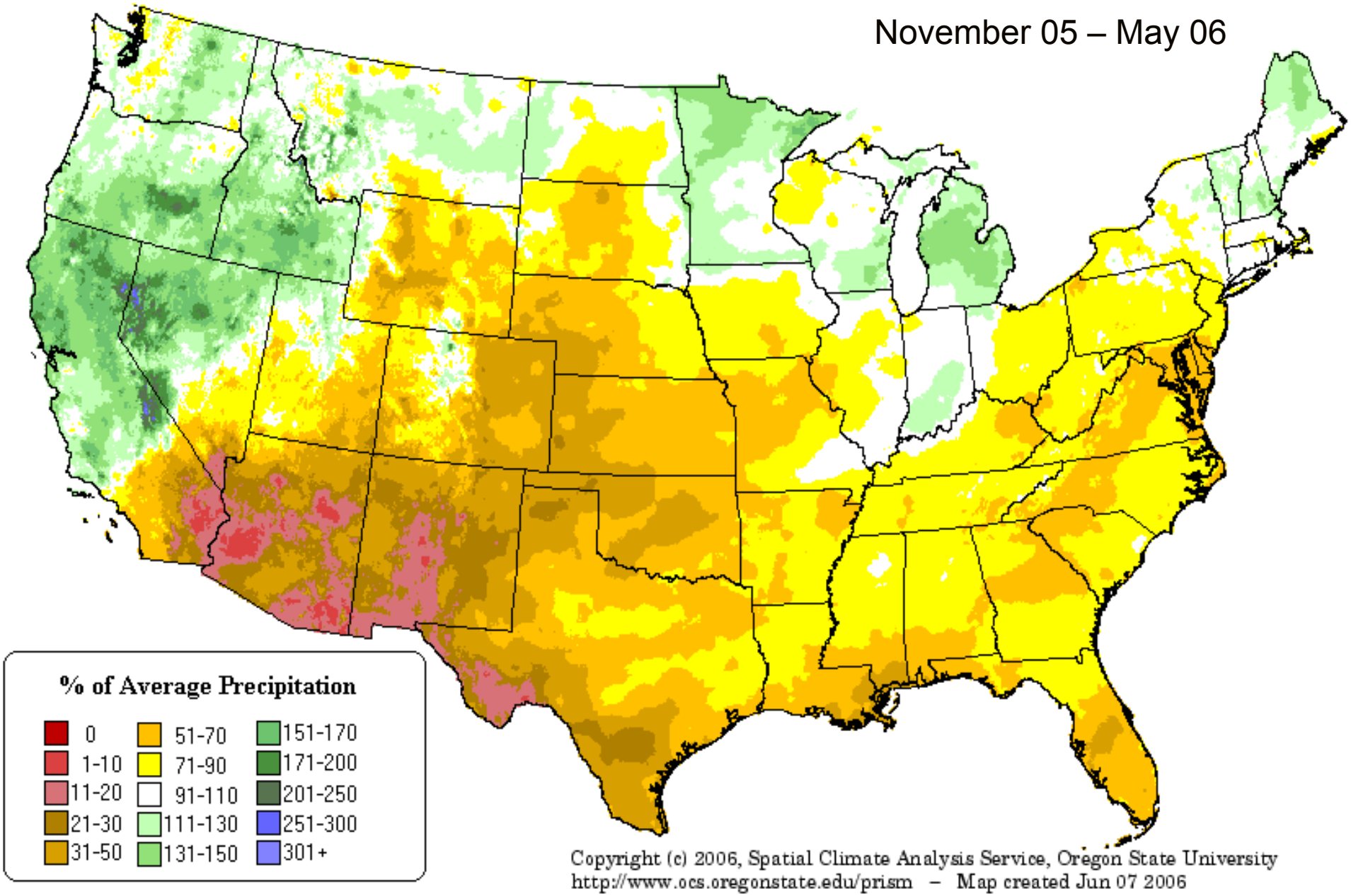
(1890 - April 2006)



7-month Percent of Average Precipitation: May 2006

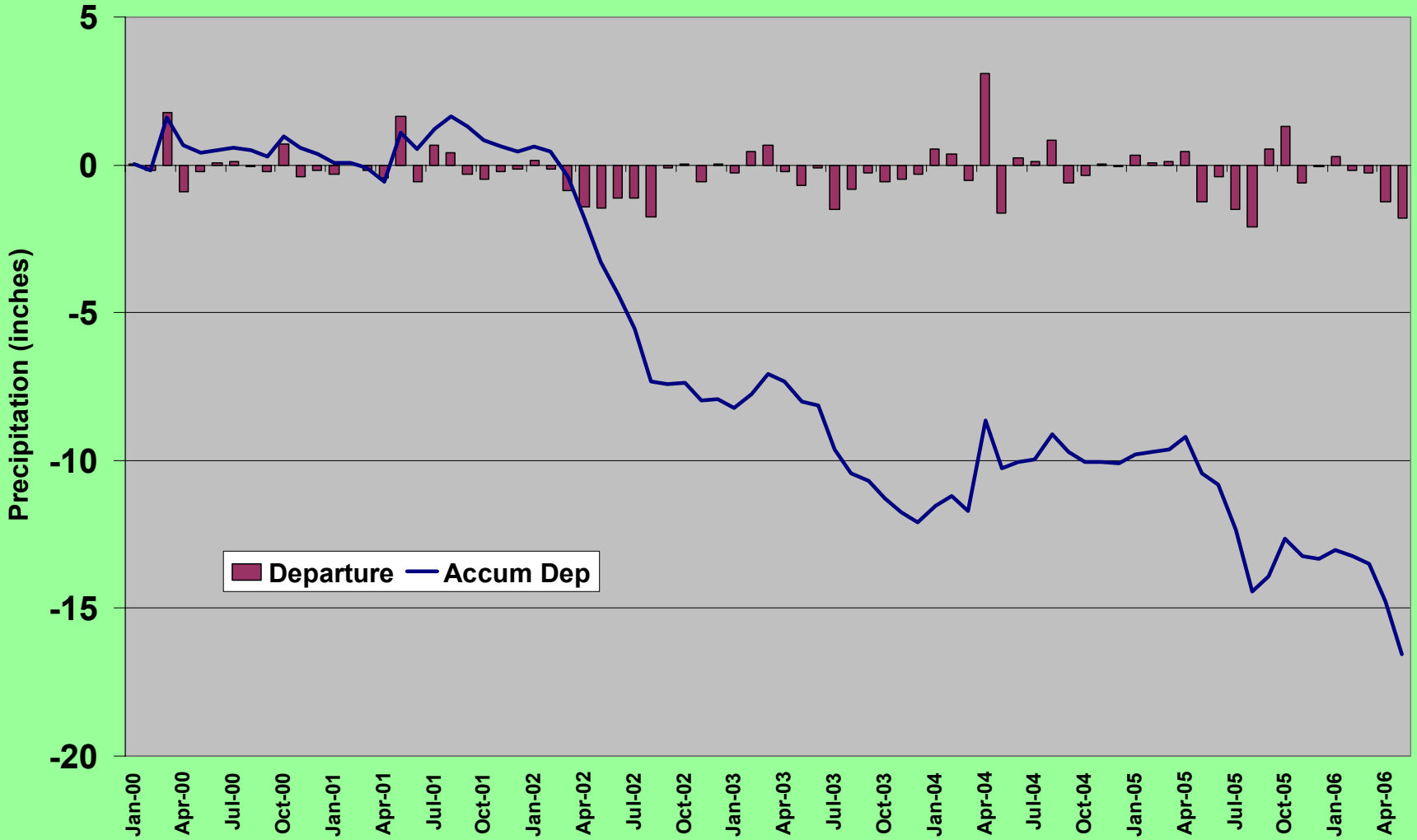
Provisional Data

November 05 – May 06

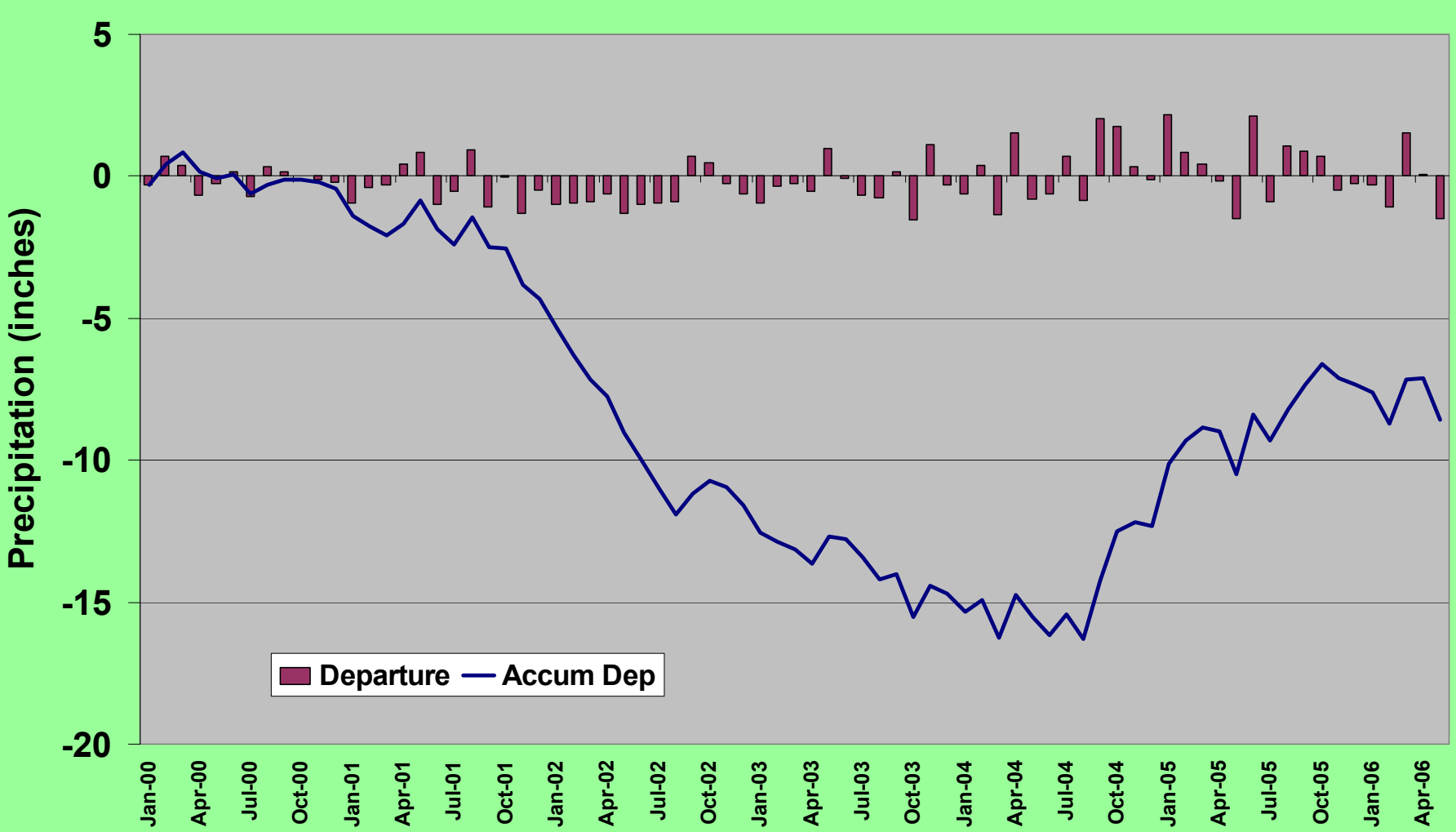


http://www.ocs.oregonstate.edu/prism – Map created Jun 07 2006

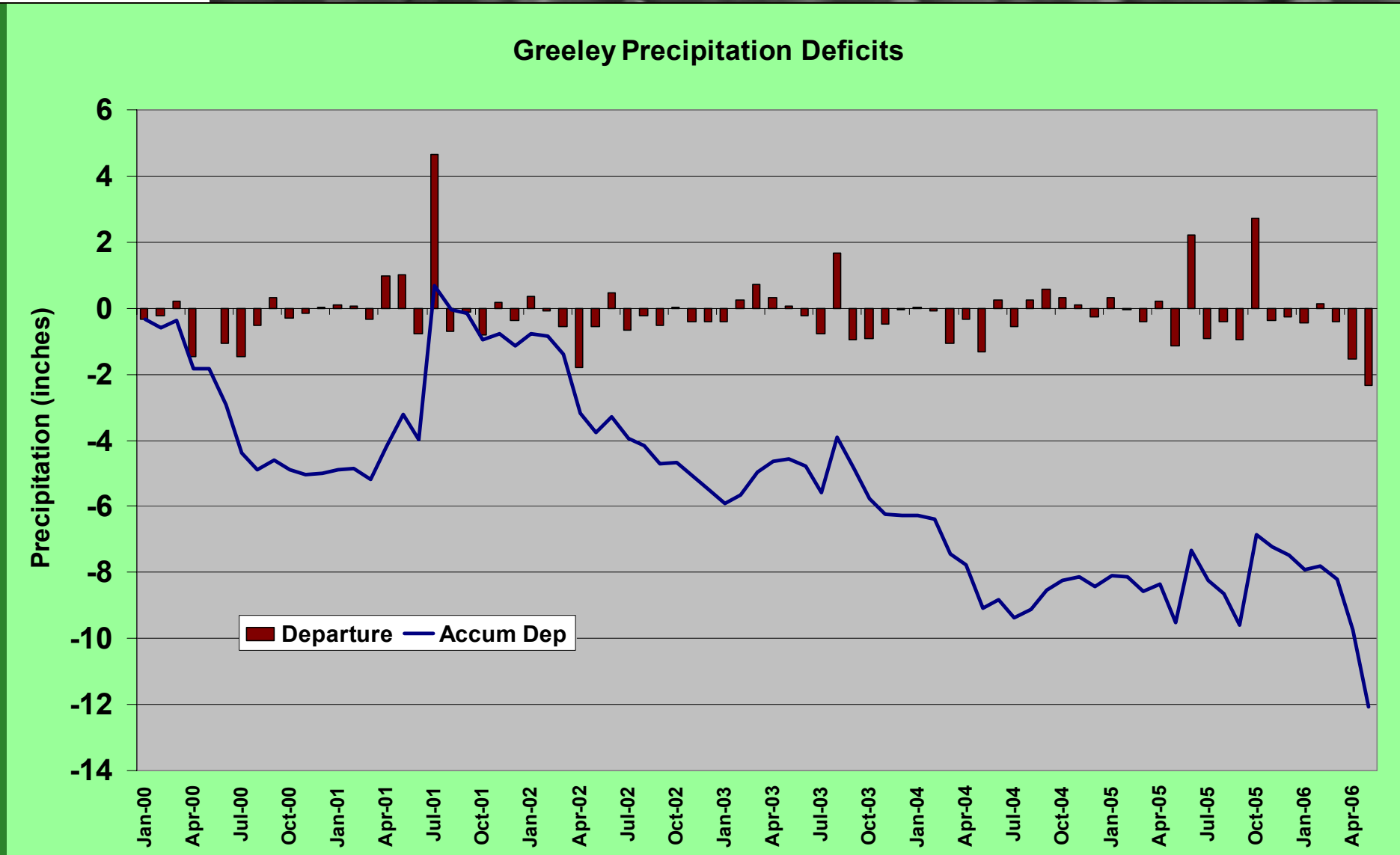
Pueblo Reservoir Precipitation Deficits



Altenbern Precipitation Deficits



Greeley Precipitation Deficits

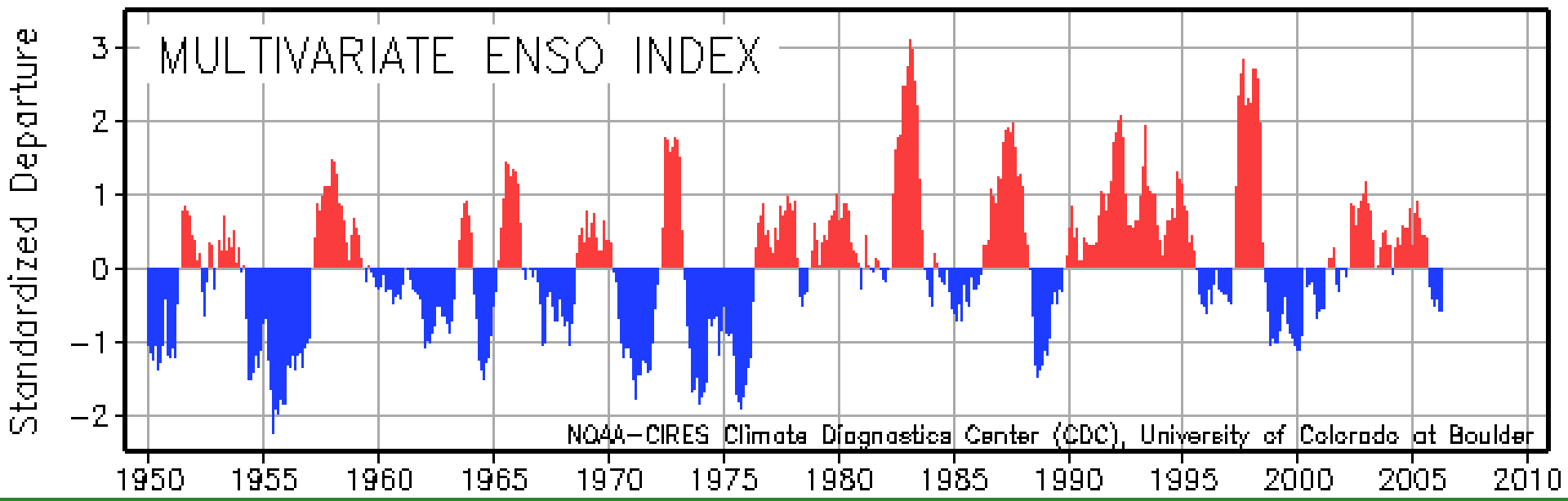


What Comes Next?

Drought or Flood?

Which Will It Be?

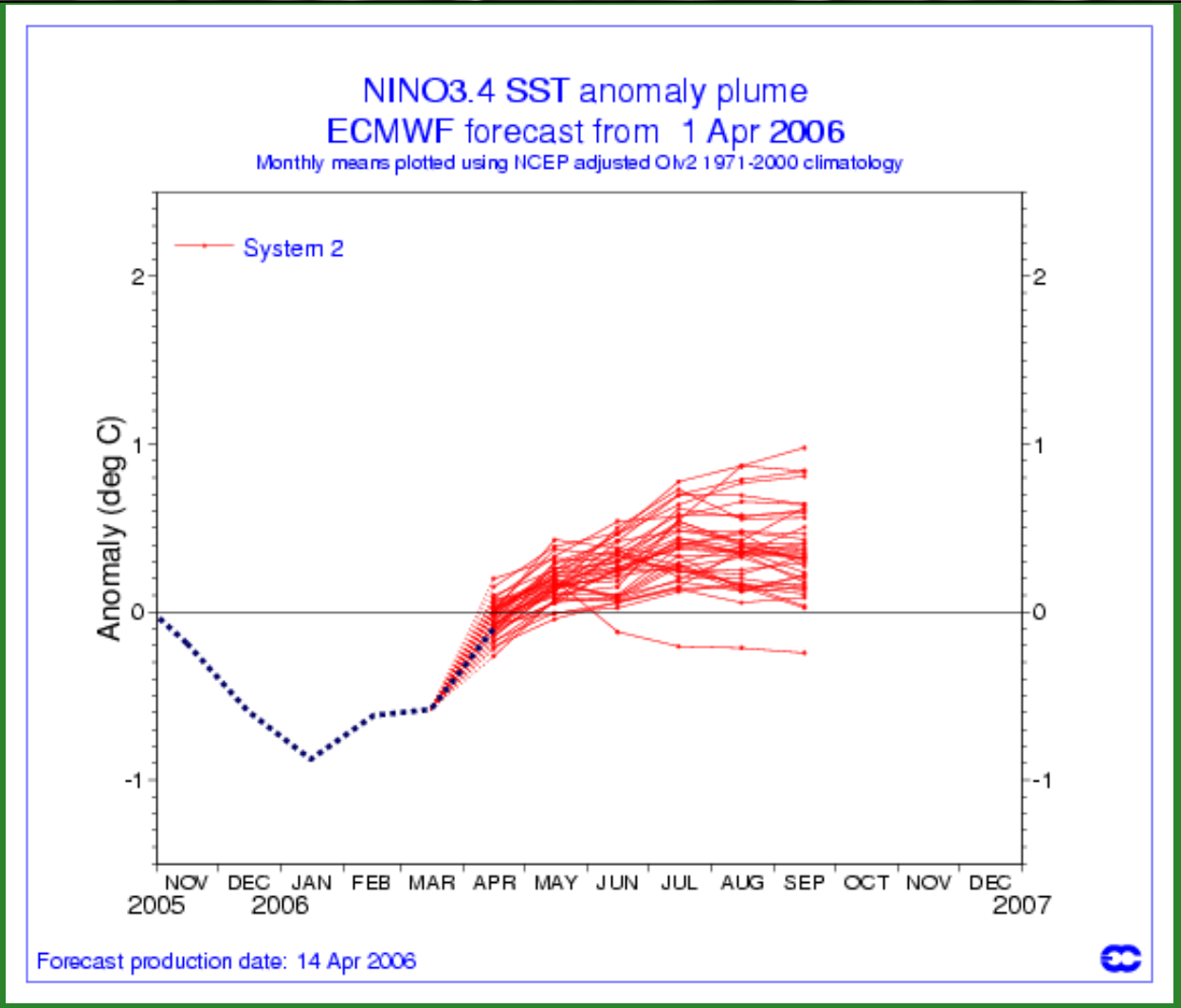
Multivariate ENSO Index (MEI)



Last update: June 9, 2006

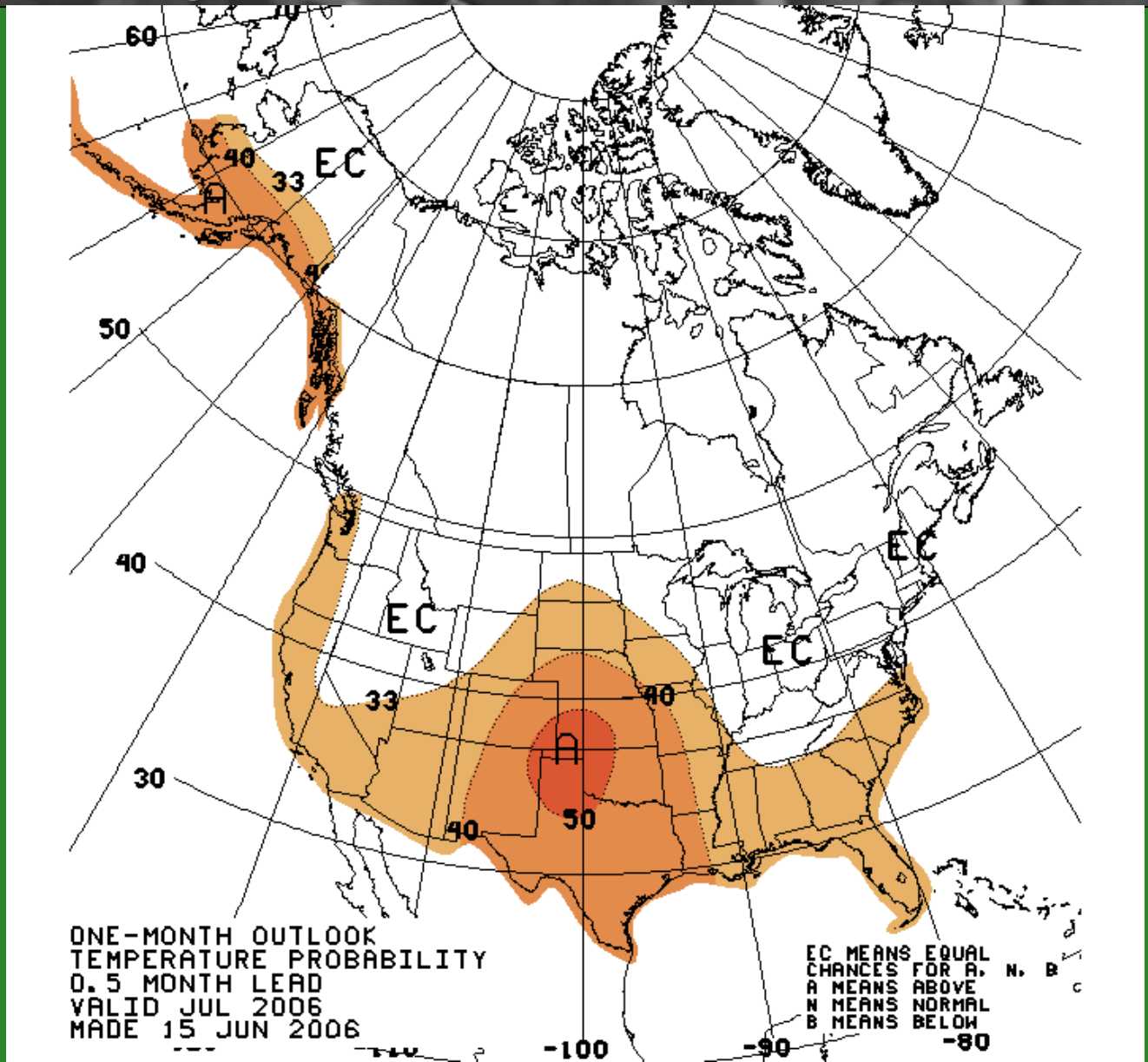
http://www.cdc.noaa.gov/people/klaus.wolter/MEI/

El Nino Forecast

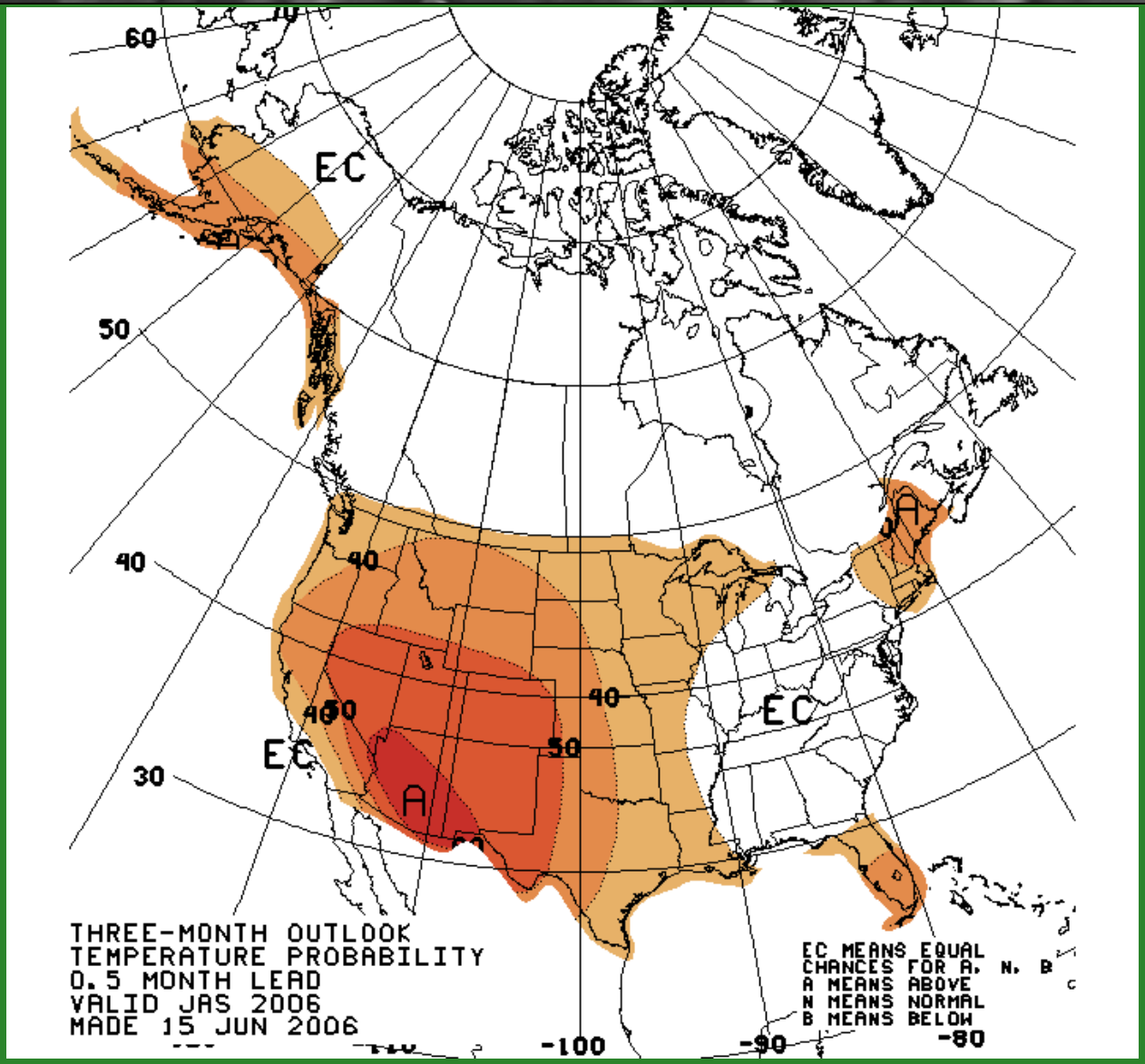


http://www.cdc.noaa.gov/people/klaus.wolter/SWcasts/

Temperature
July 2006

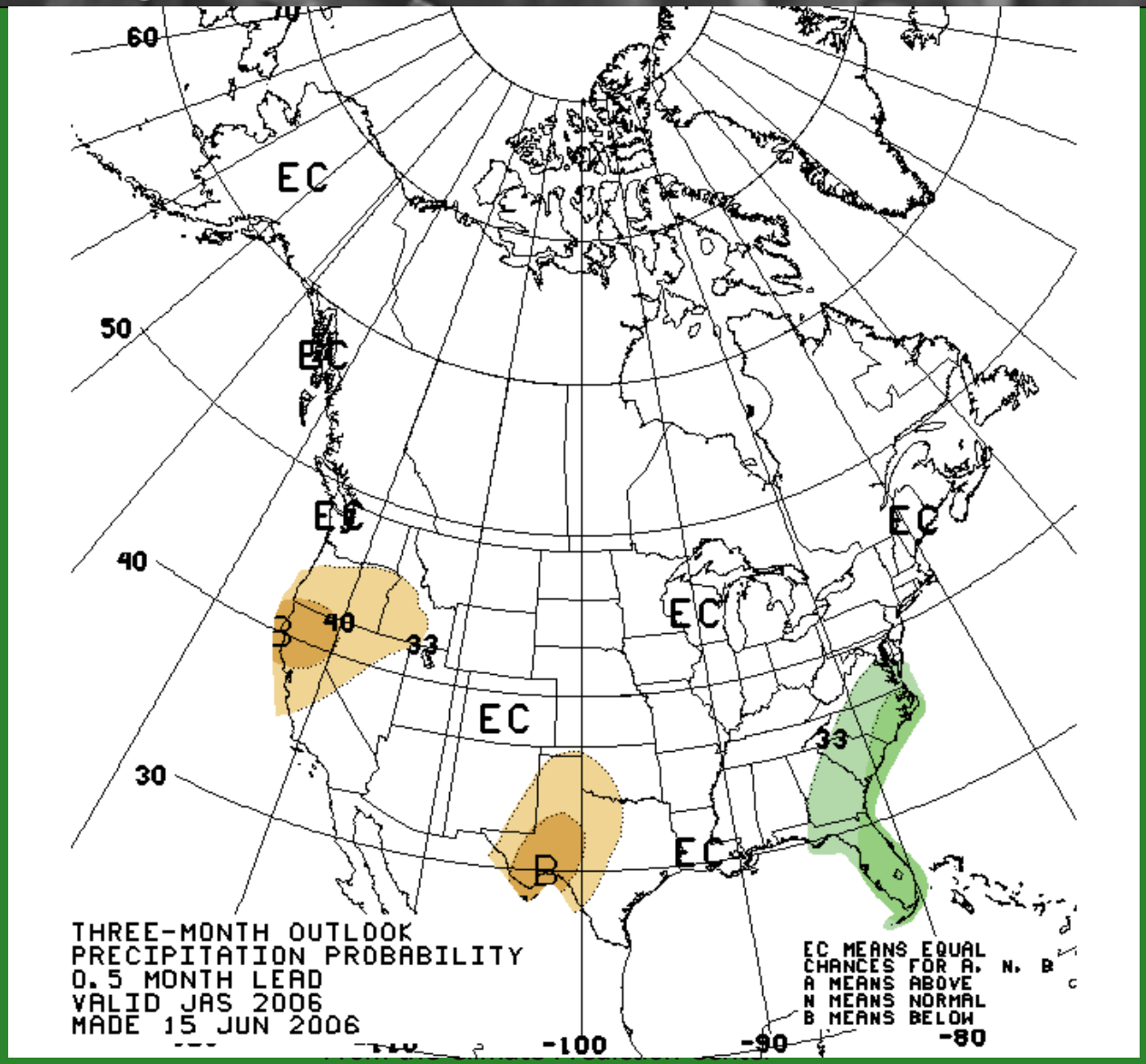


Temperature
Jul-Sep 2006



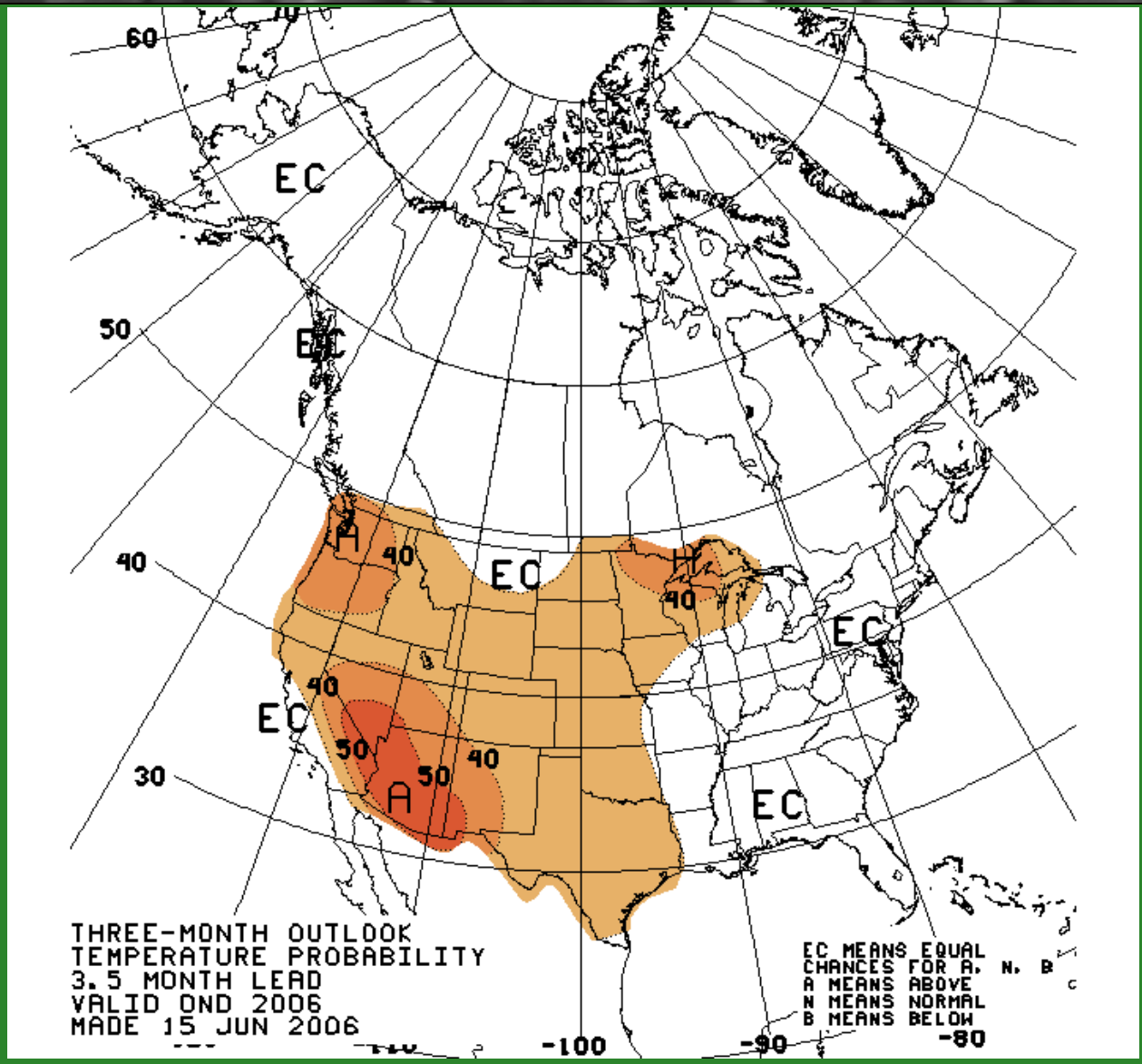
http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.html

Precipitation
Jul-Sep 2006



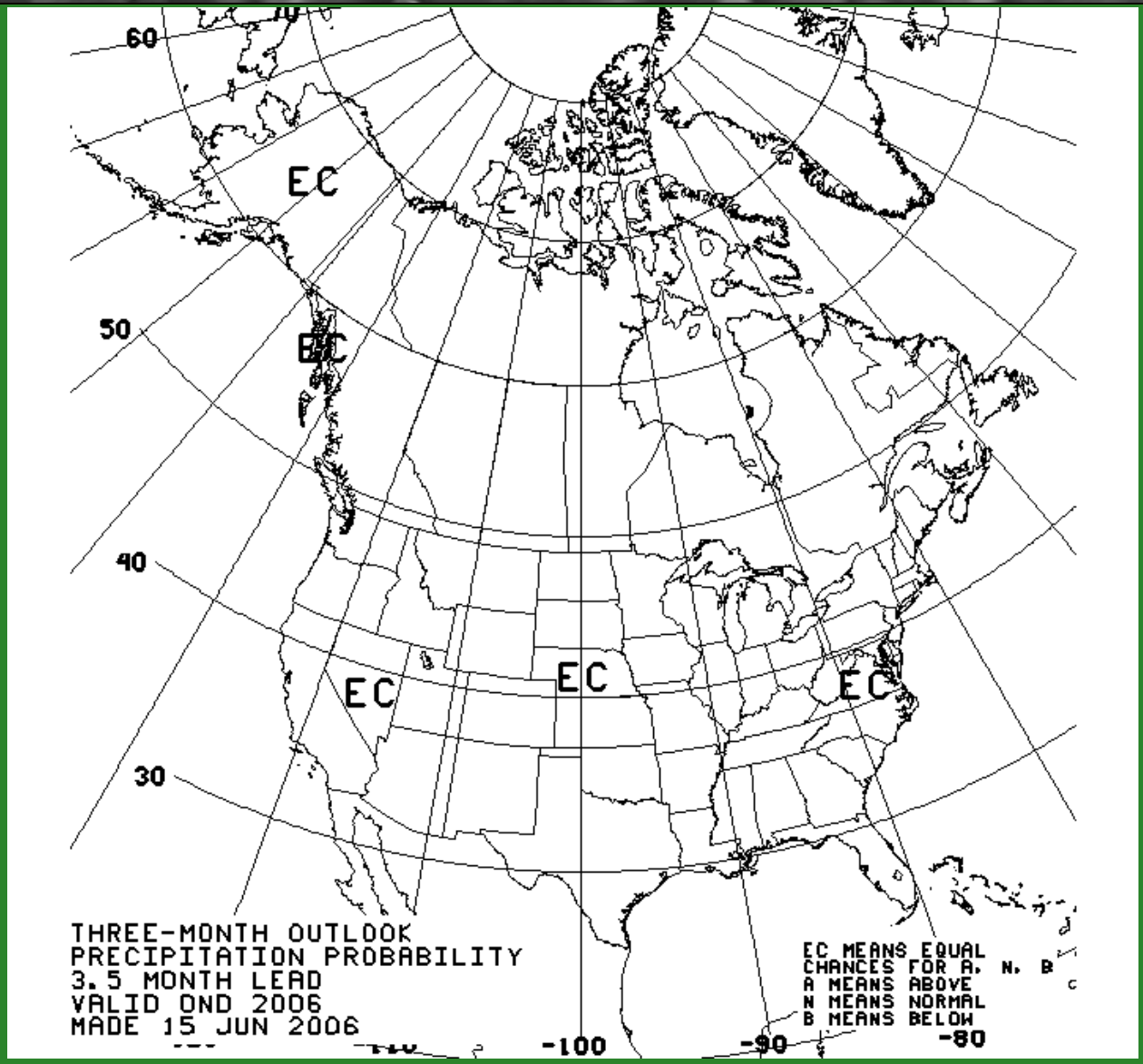
http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.html

Temperature
Oct-Dec 2006



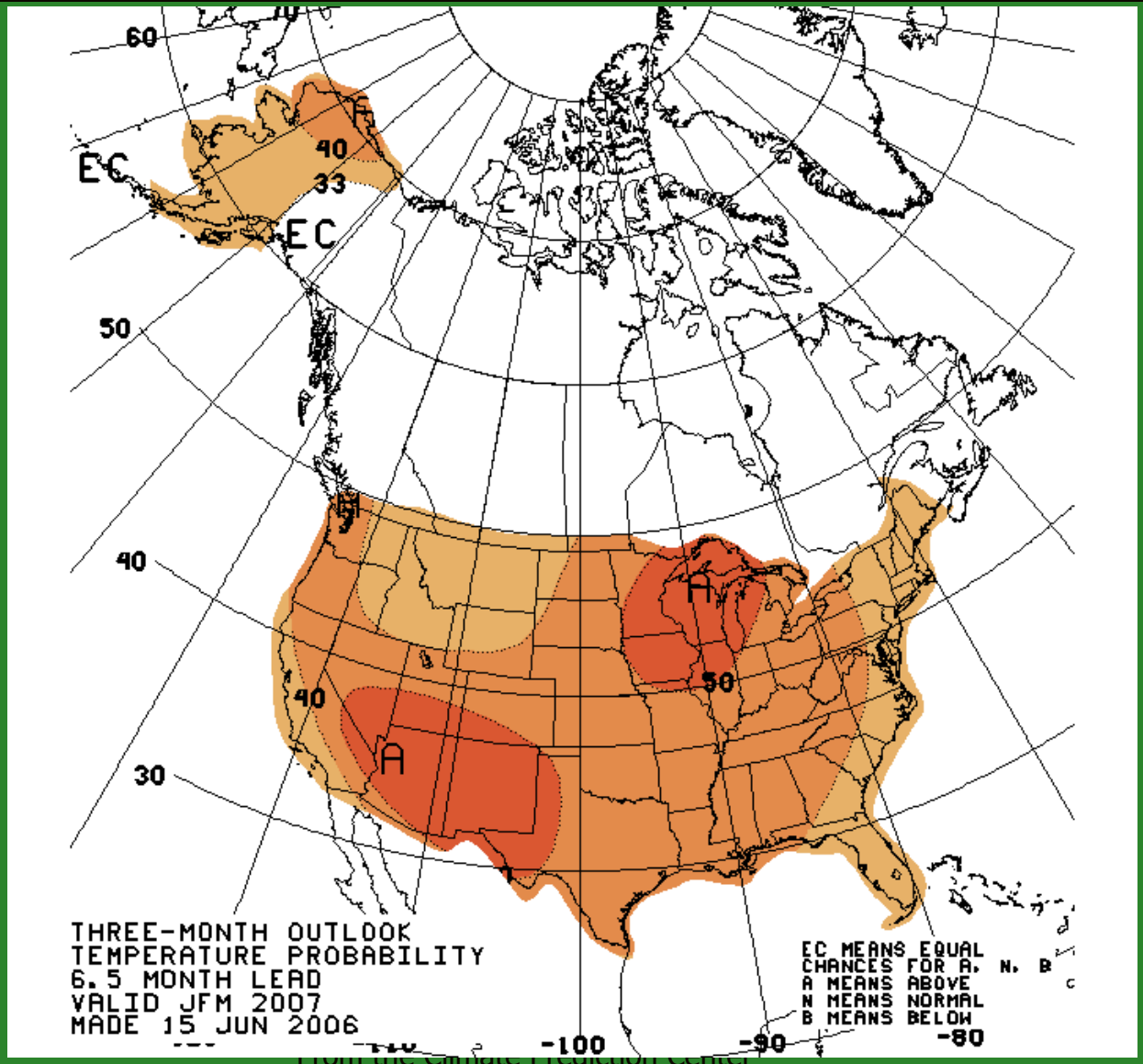
http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.html

Precipitation Oct-Dec 2006



http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.html

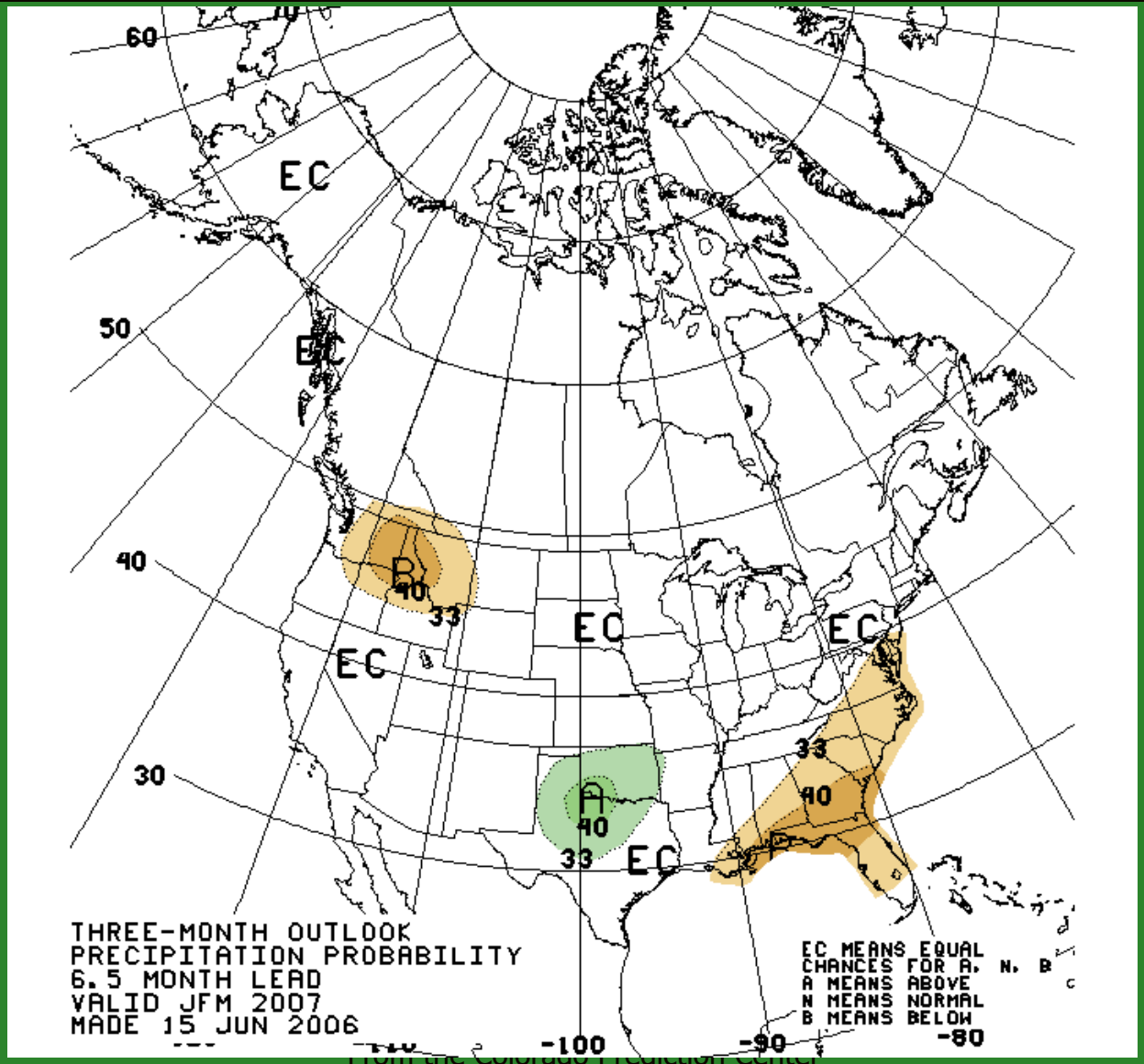
Temperature
Jan-Mar 2007



From the Climate Prediction Center

http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.html

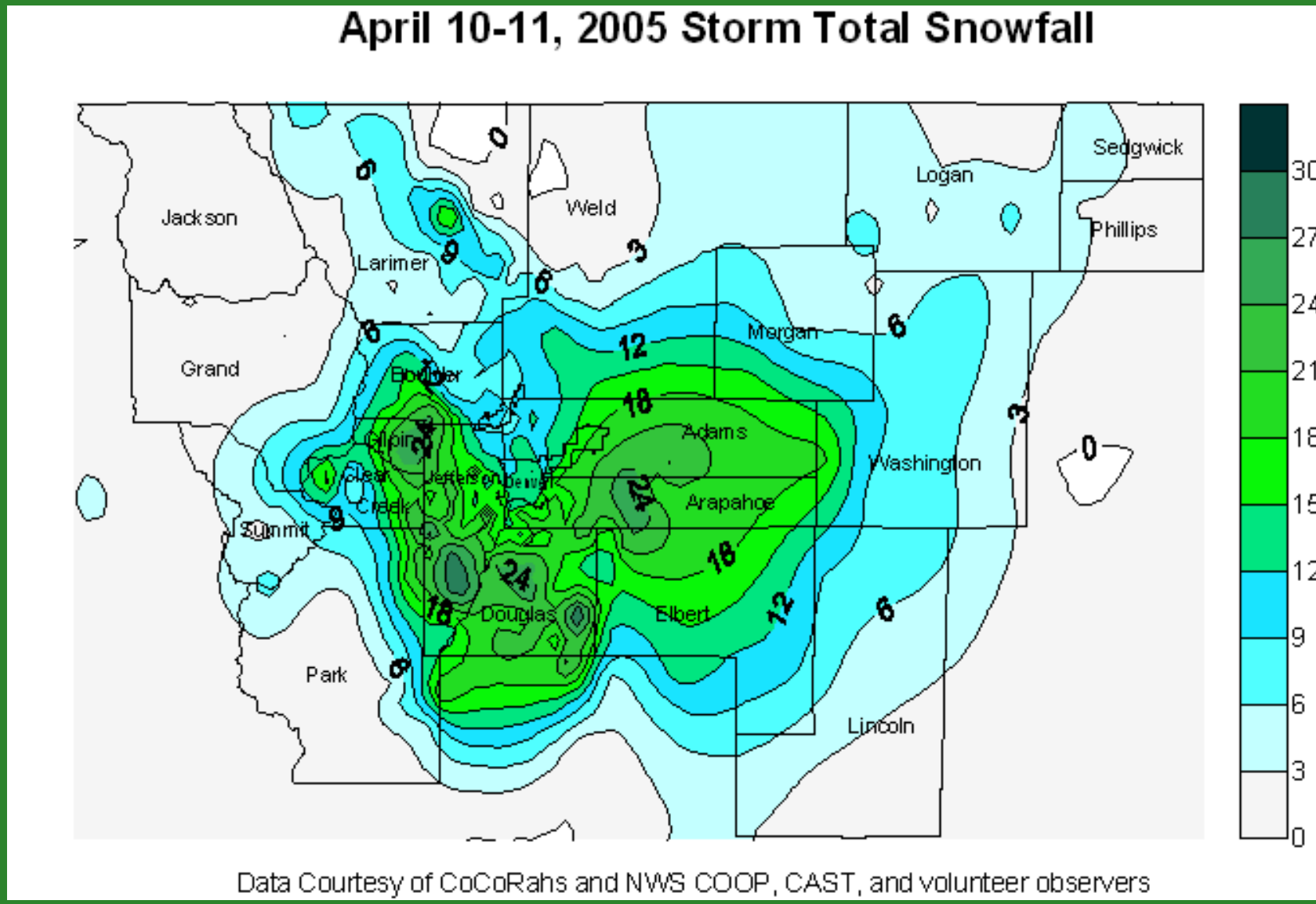
Precipitation Jan-Mar 2007



From the Colorado Prediction Center

http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.html

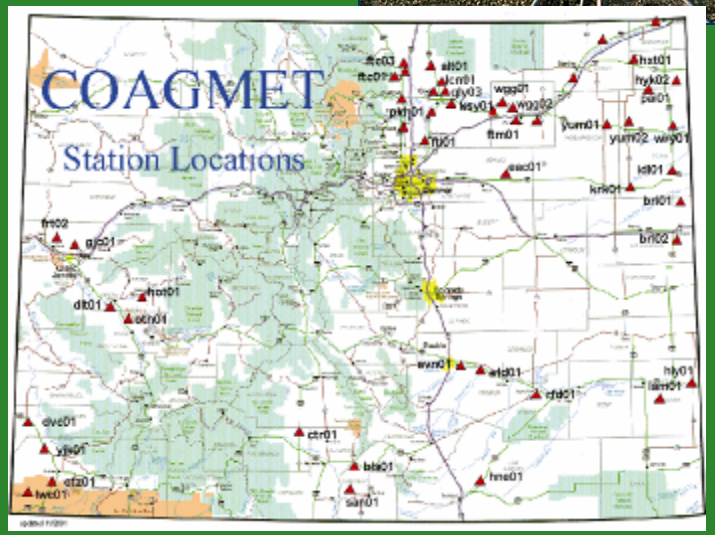
If we can't predict it, at least we can track it!



CoAgMet
Weather Data for Agriculture

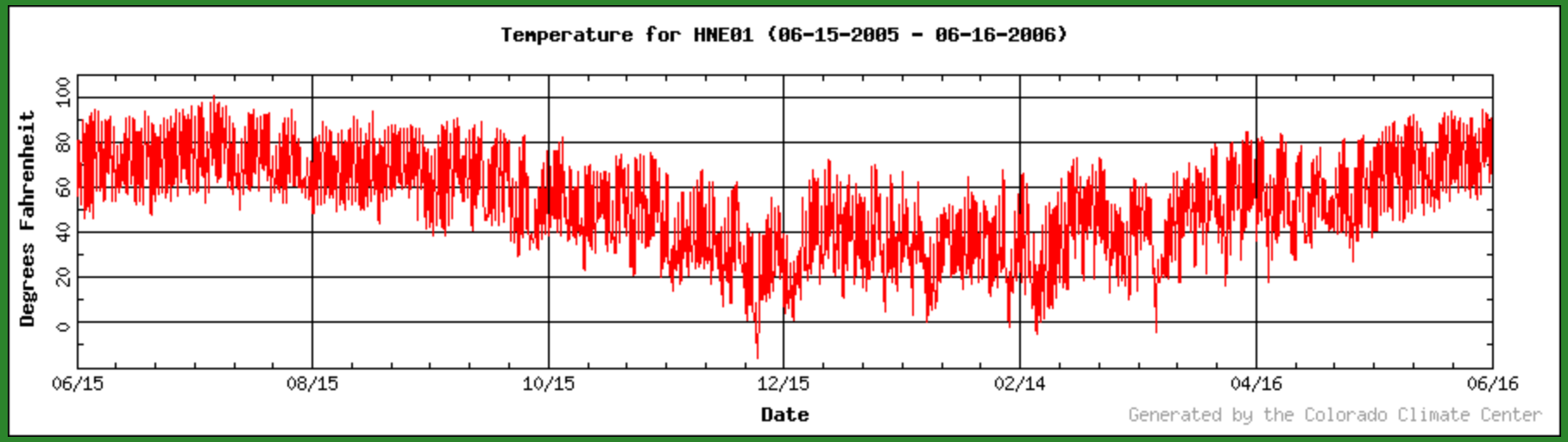
http://www.coagmet.com

- *Automated weather stations with daily and hourly readings of:*
  - *Temperature*
  - *Humidity*
  - *Wind*
  - *Precipitation*
  - *Solar Energy*
  - *Evapotranspiration*

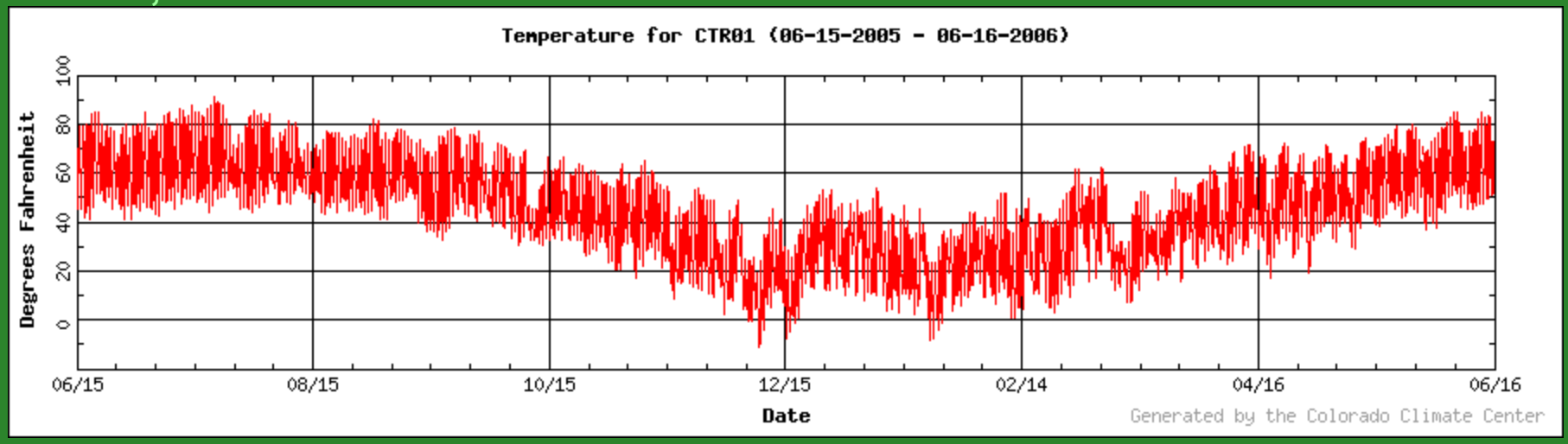


CoAgMet Temperatures

Hoehne, CO



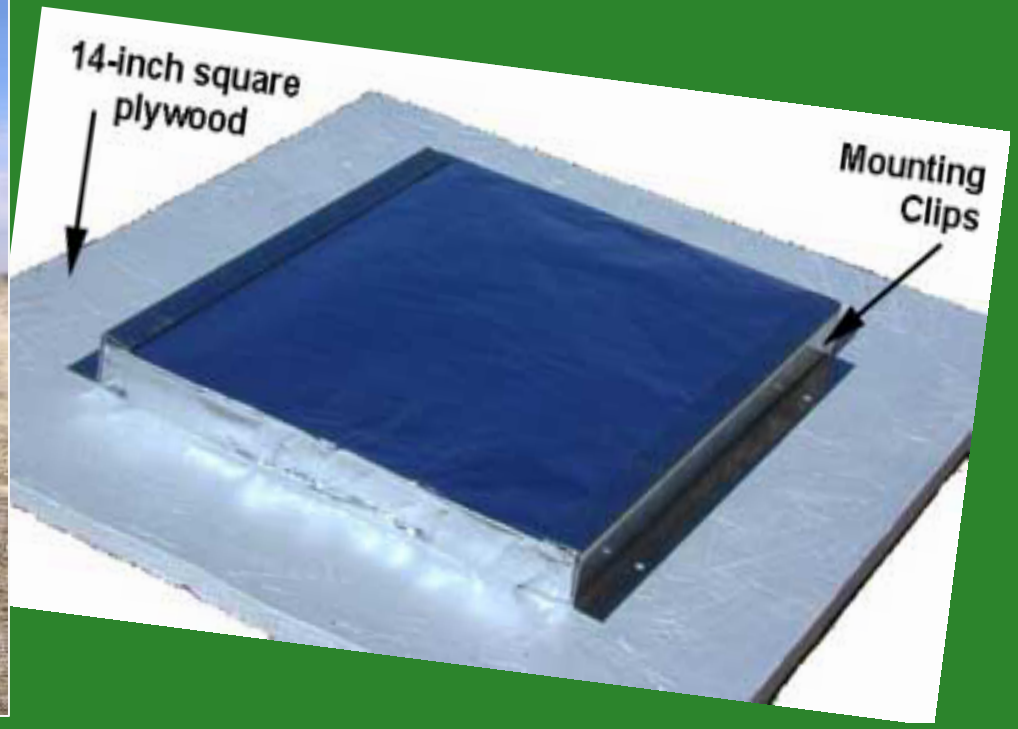
Center, CO



CoCoRaHS

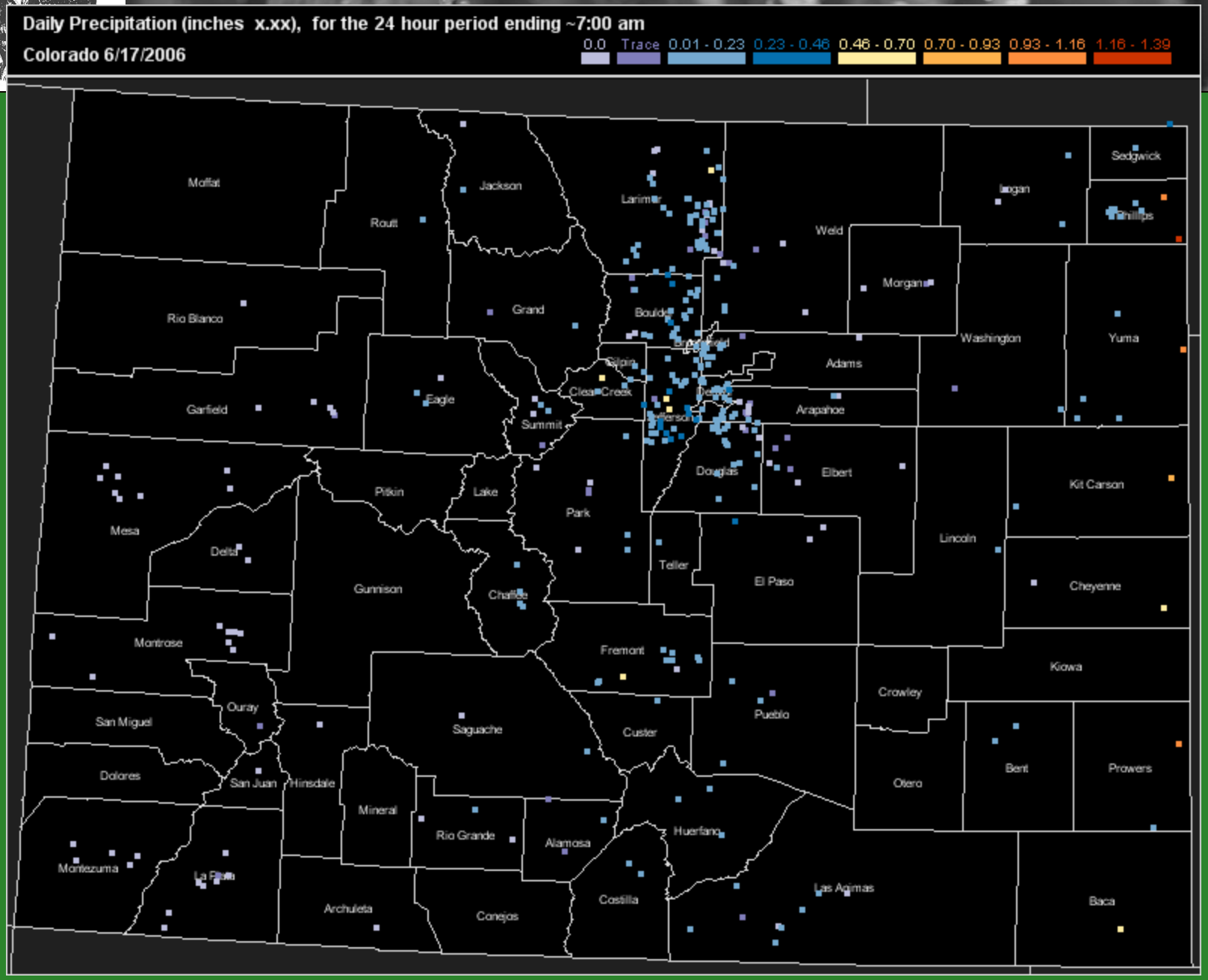
Community Collaborative Rain, Hail, and Snow Network

http://www.cocorahs.org

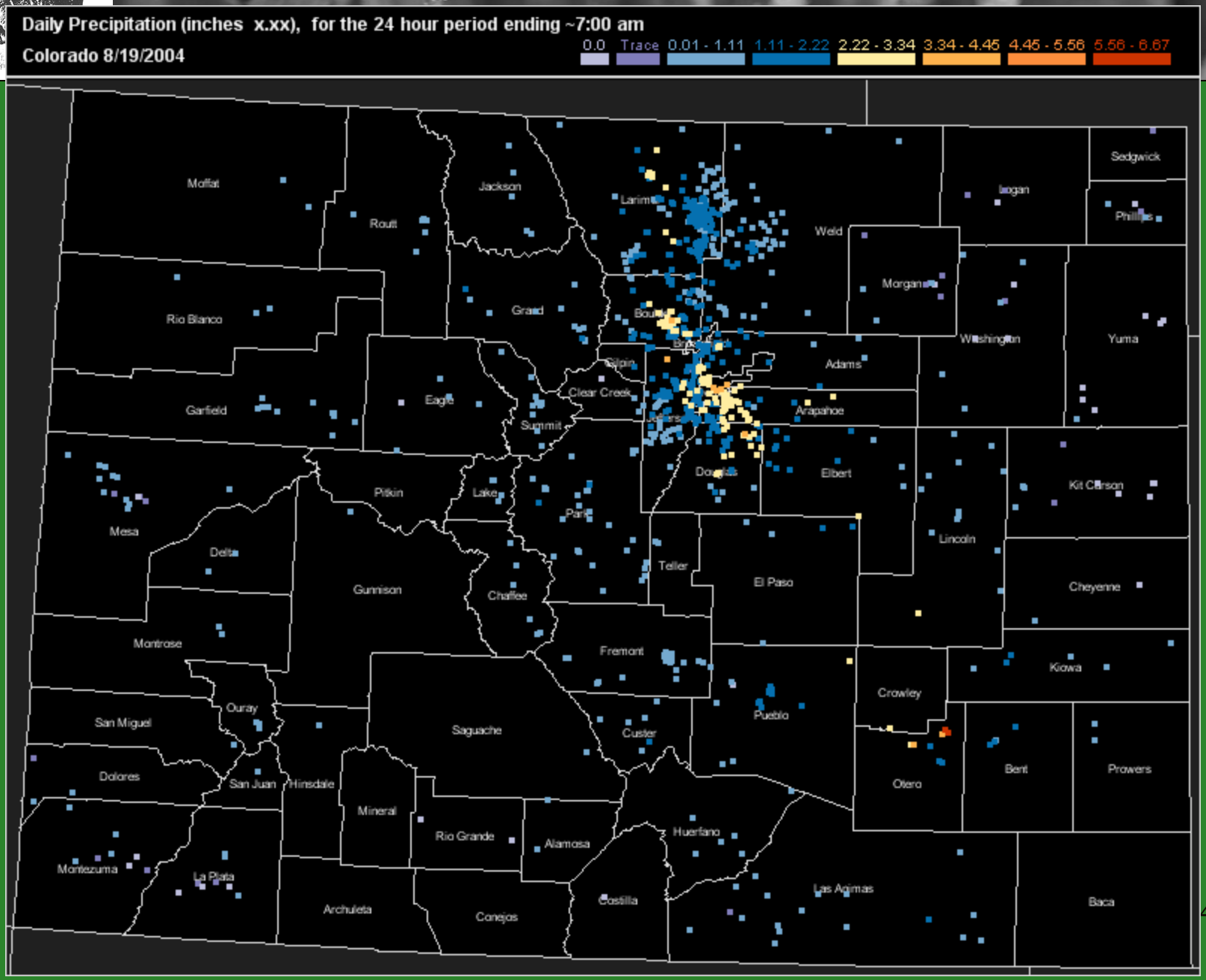


Support for this project provided by Informal Science Education Program, National Science Foundation and *many* local charter sponsors.

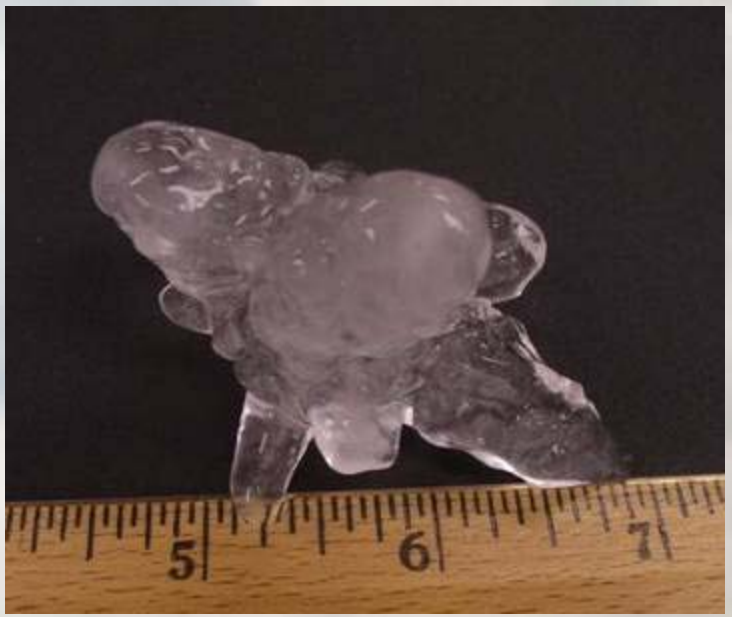
Colorado 6/17/06

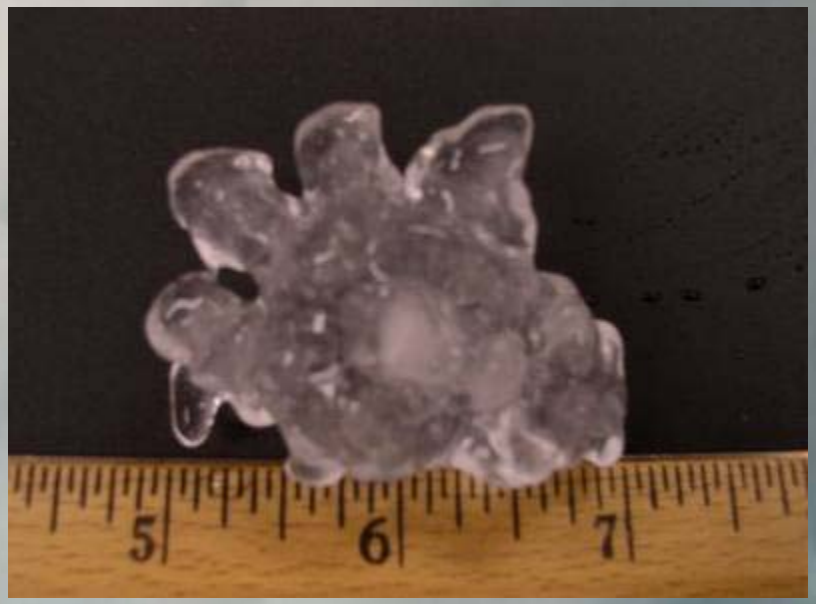


Colorado 8/19/2004



Clear Hail Stones



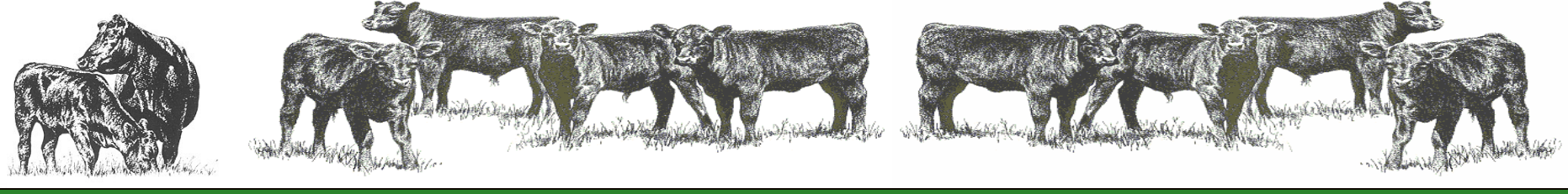


Photos courtesy of CoCoRaHS observer.


Damaged
Hail Pad
Large Hail ≥ 1"


And you can help too!


To help make it rain....
Sign up today!
Raingauges available today!
See me at the break.



Colorado Climate Center
Colorado State University

- *Data and Power Point Presentations available for downloading*
- *http://ccc.atmos.colostate.edu*

  click on "Drought"

  then click on "Presentations"

Colorado Climate Center

Colorado State University
Knowledge to Go Places