

Climate Update

**Nolan Doesken
State Climatologist
Colorado Climate Center**

**Atmospheric Science Department
Colorado State University**

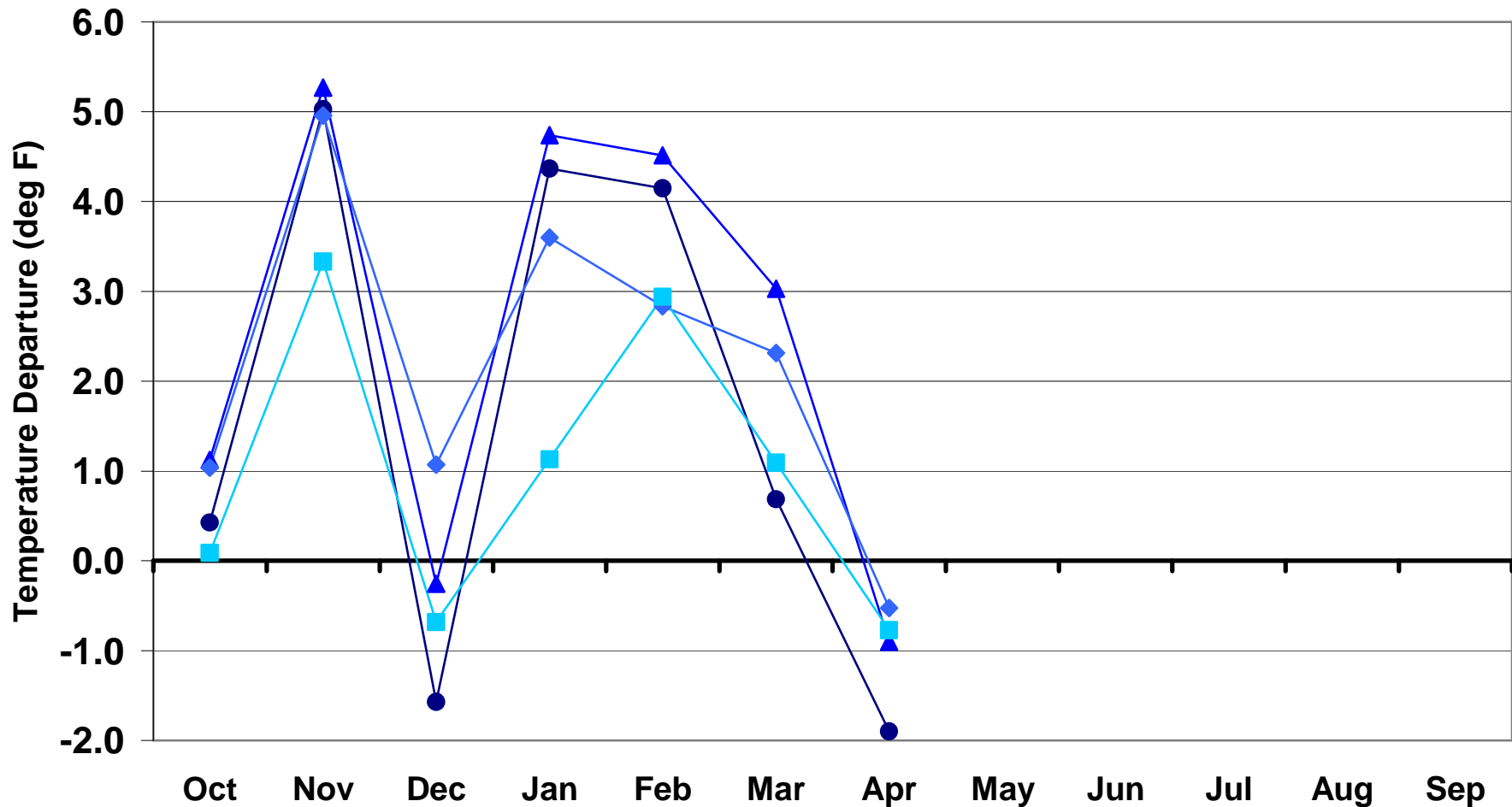
Presented to
Water Availability Task Force
May 27, 2009
Denver, CO

Prepared by Wendy Ryan



Water Year 2009 Temperature Departures

Water Year 2009

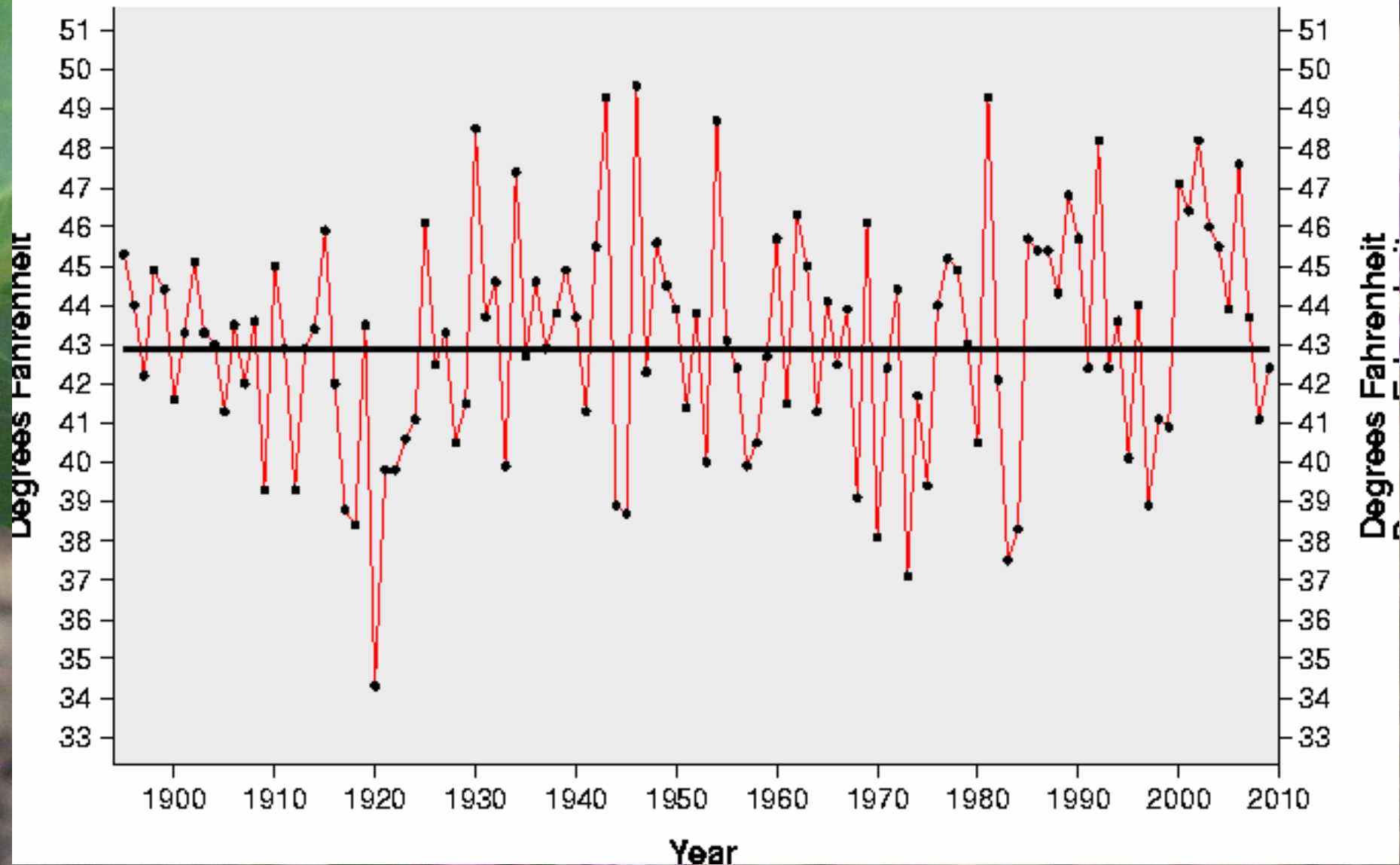


● Eastern Plains ▲ Foothills ◆ Mountains ■ Western Valleys

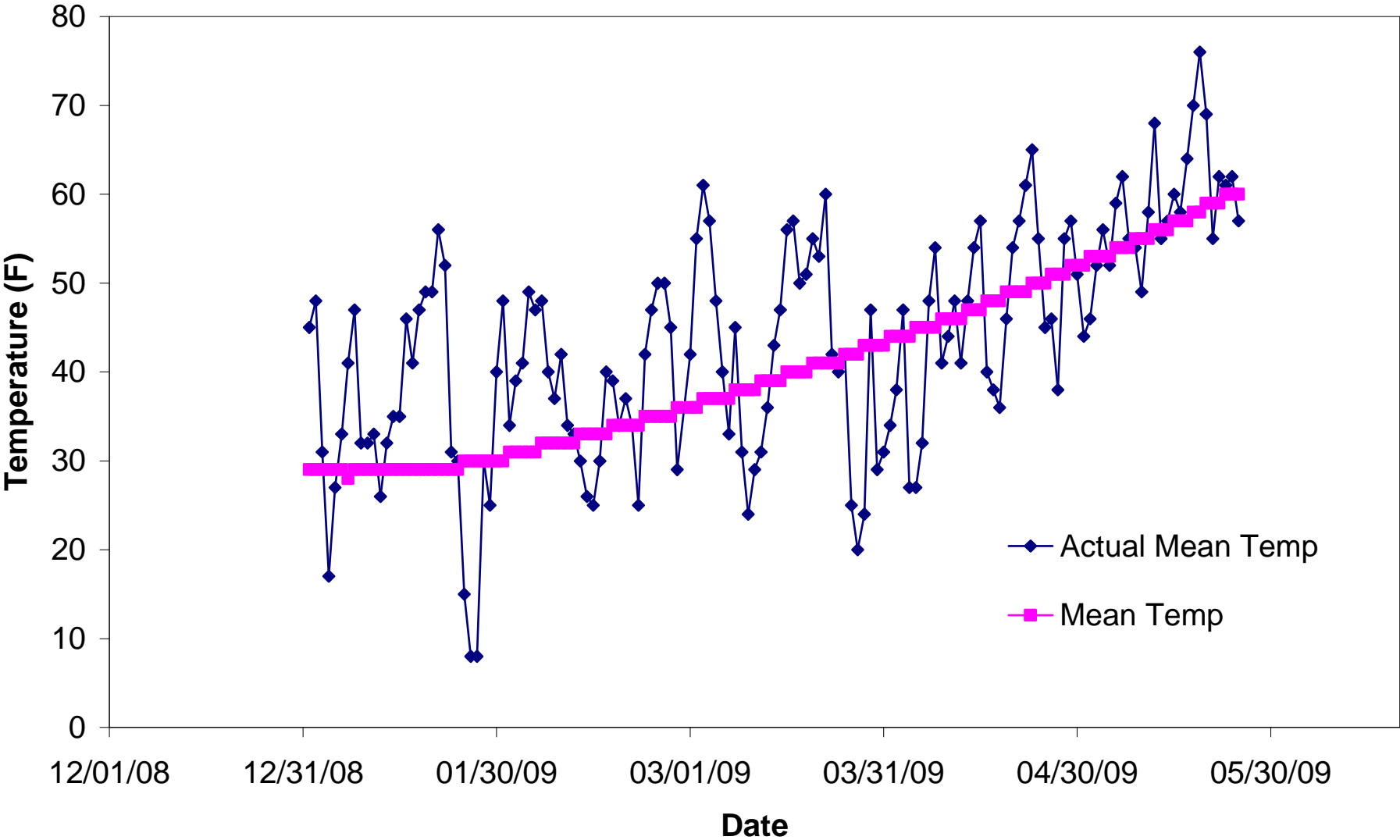
April Average Temperature History for Colorado (NCDC)

— **Actual Temperature**
— **Average Temperature**

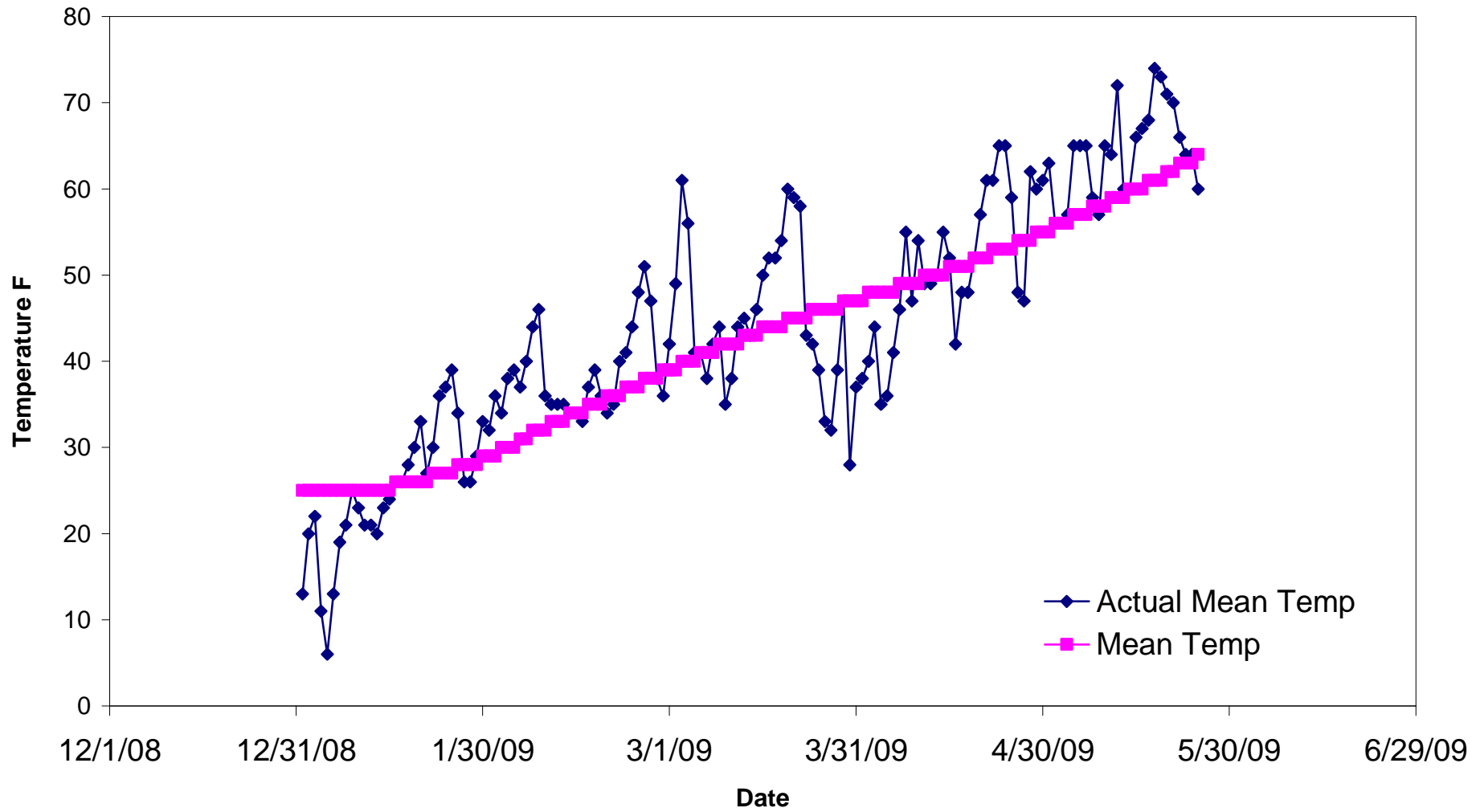
Rank: 42.4 degrees is 42nd coolest
for period of record 1895-2009



Denver, CO Jan 1 - May 25 2009 Mean and Actual Daily Temperature



Grand Junction Jan 1 - May 25 2009 Mean and Actual Daily Temperatures

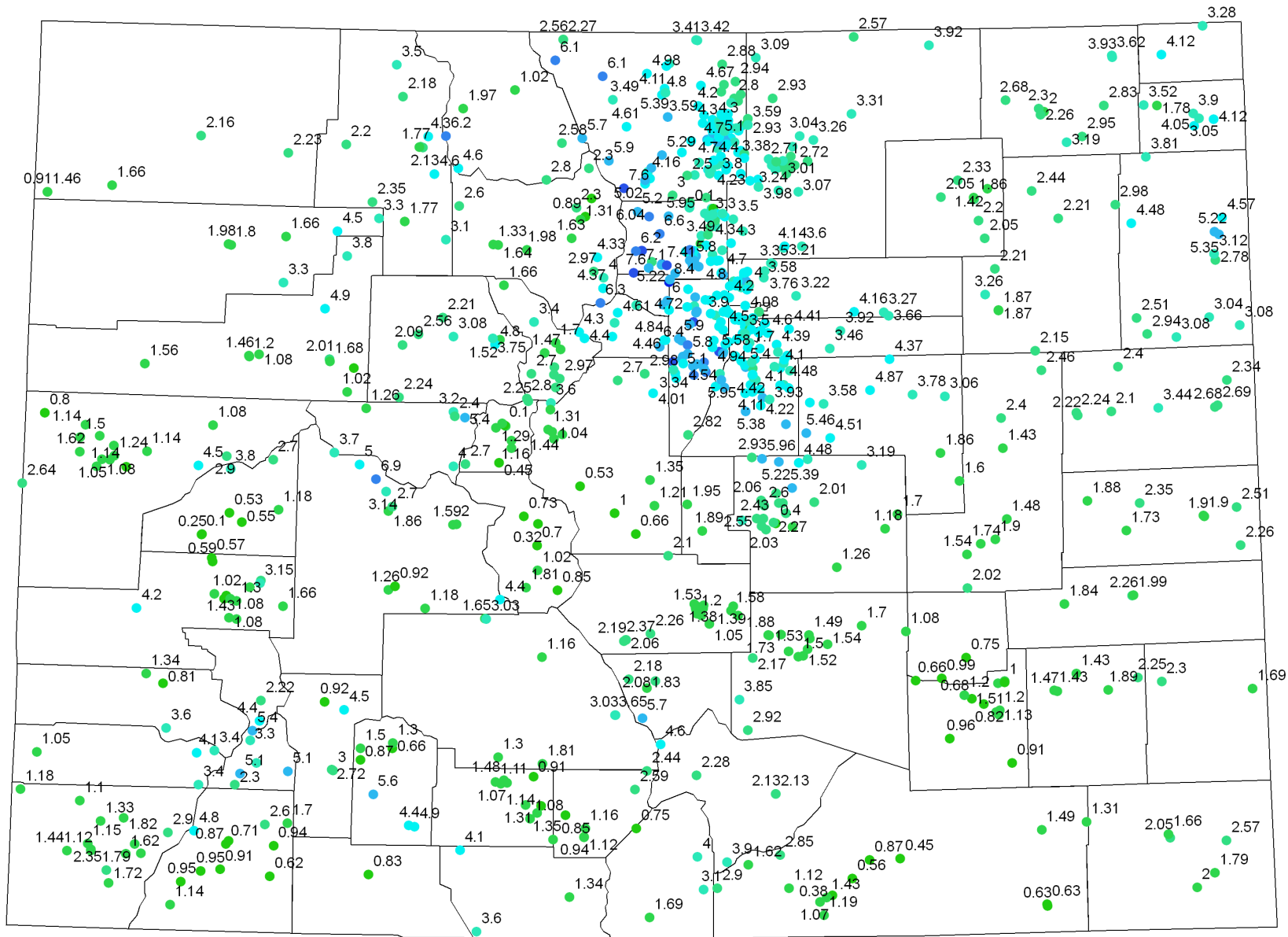


April 2009 Precipitation

Legend

Apr_09_all.txt Event
April

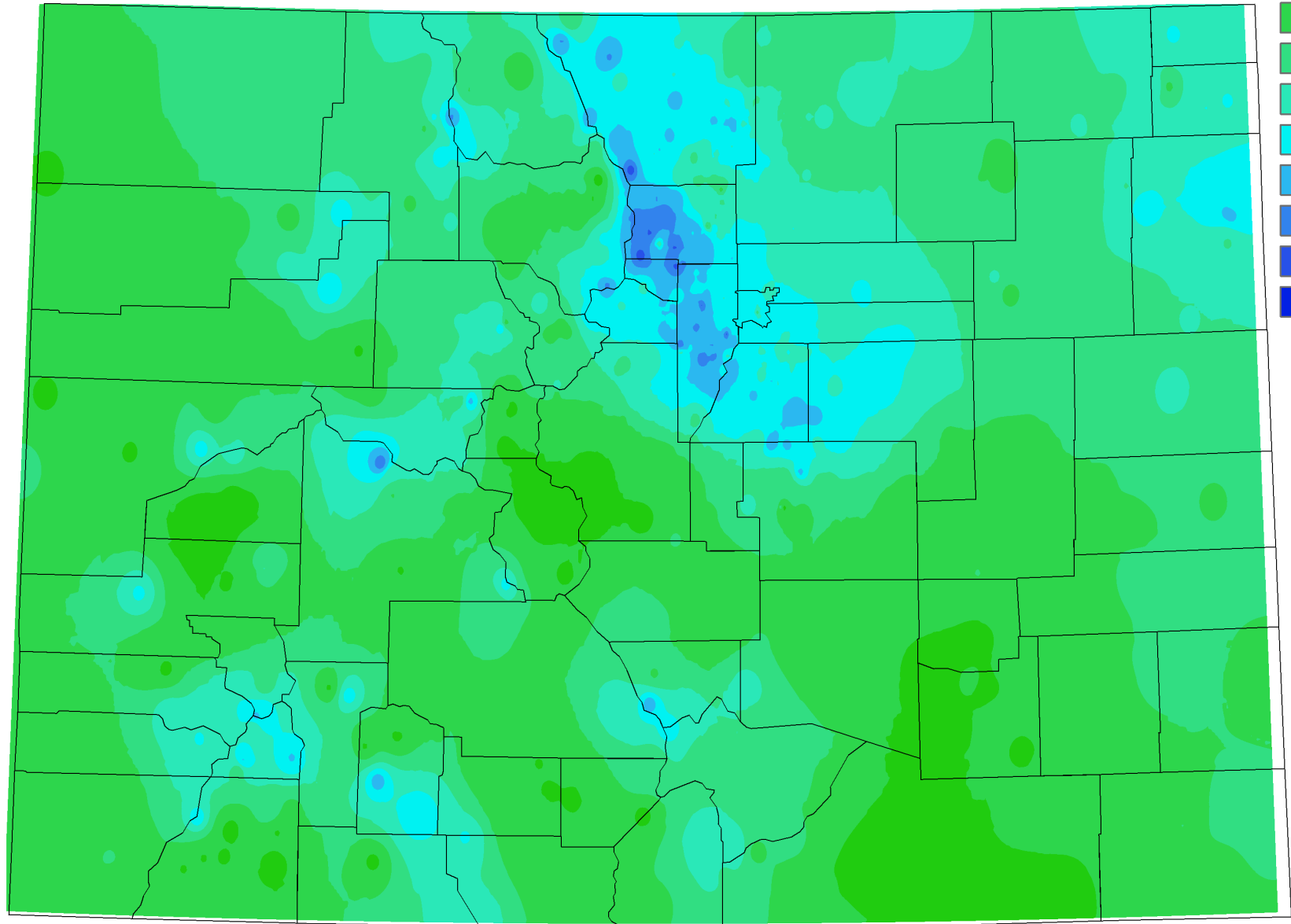
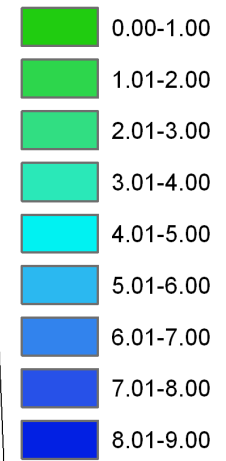
- 0.00 - 1.00
- 1.01 - 2.00
- 2.01 - 3.00
- 3.01 - 4.00
- 4.01 - 5.00
- 5.01 - 6.00
- 6.01 - 7.00
- 7.01 - 8.00
- 8.01 - 9.00



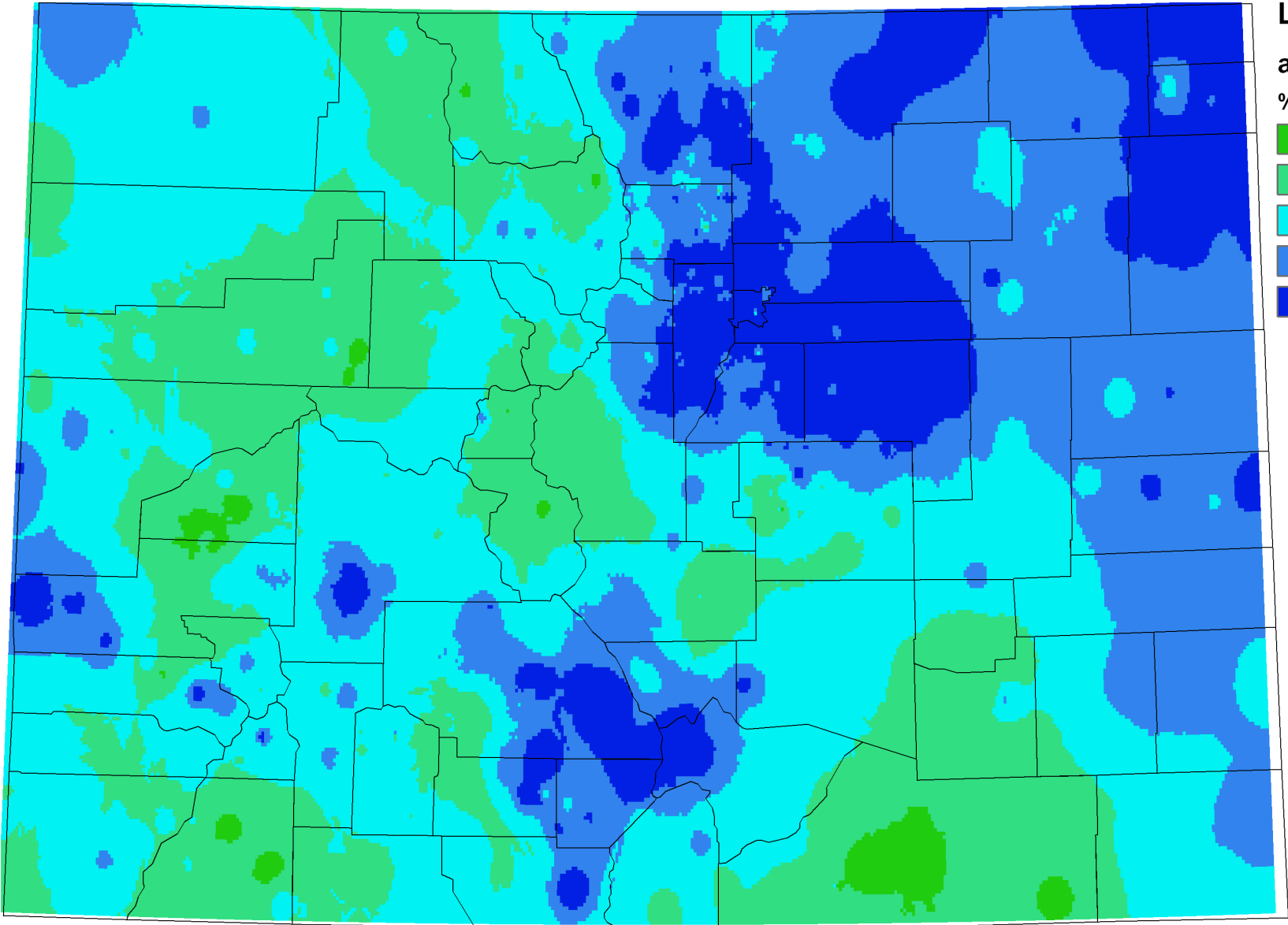
April 2009 Precipitation

Legend

April



April 2009 Precipitation as Percent of Normal



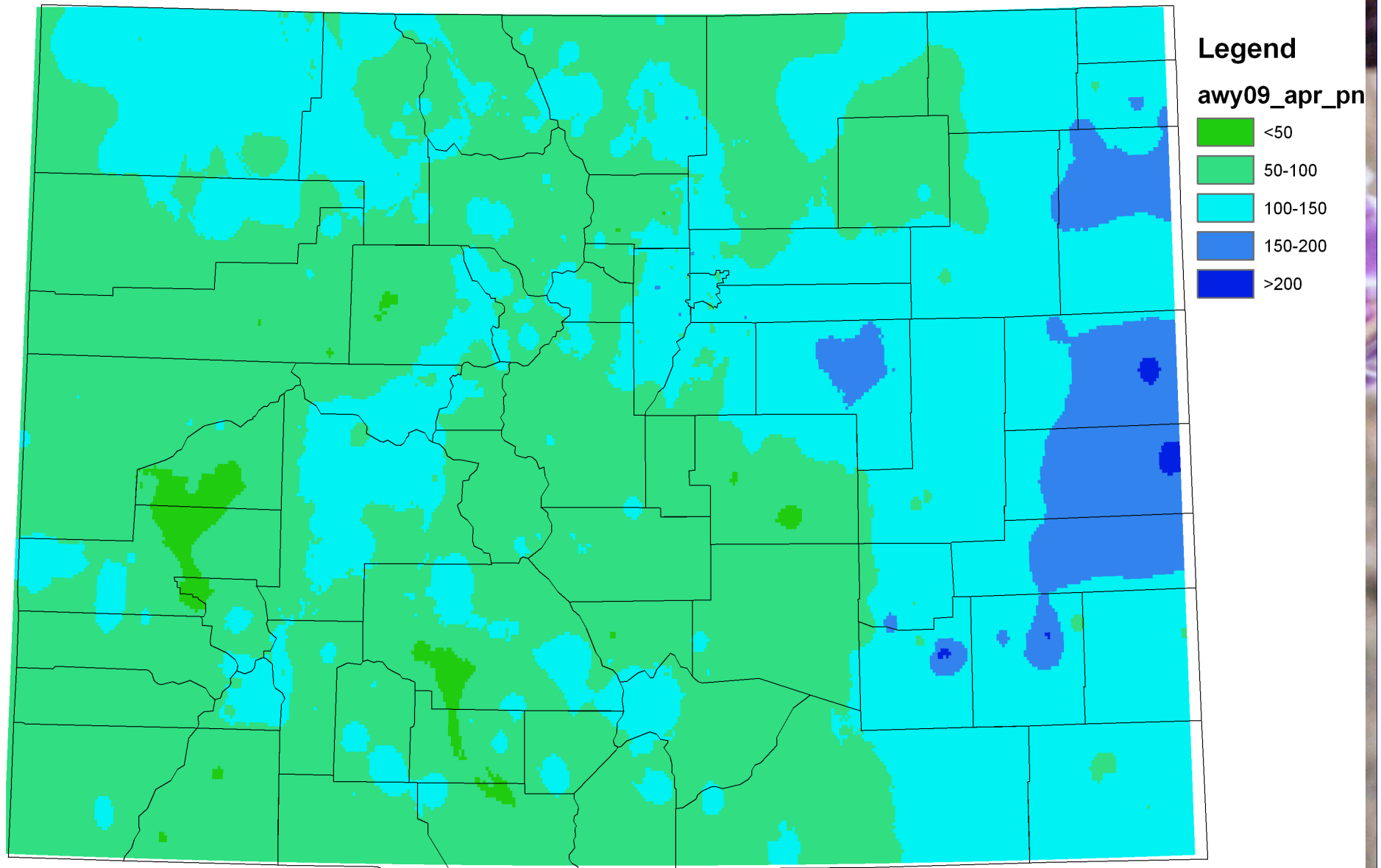
Legend

apr_09_pn

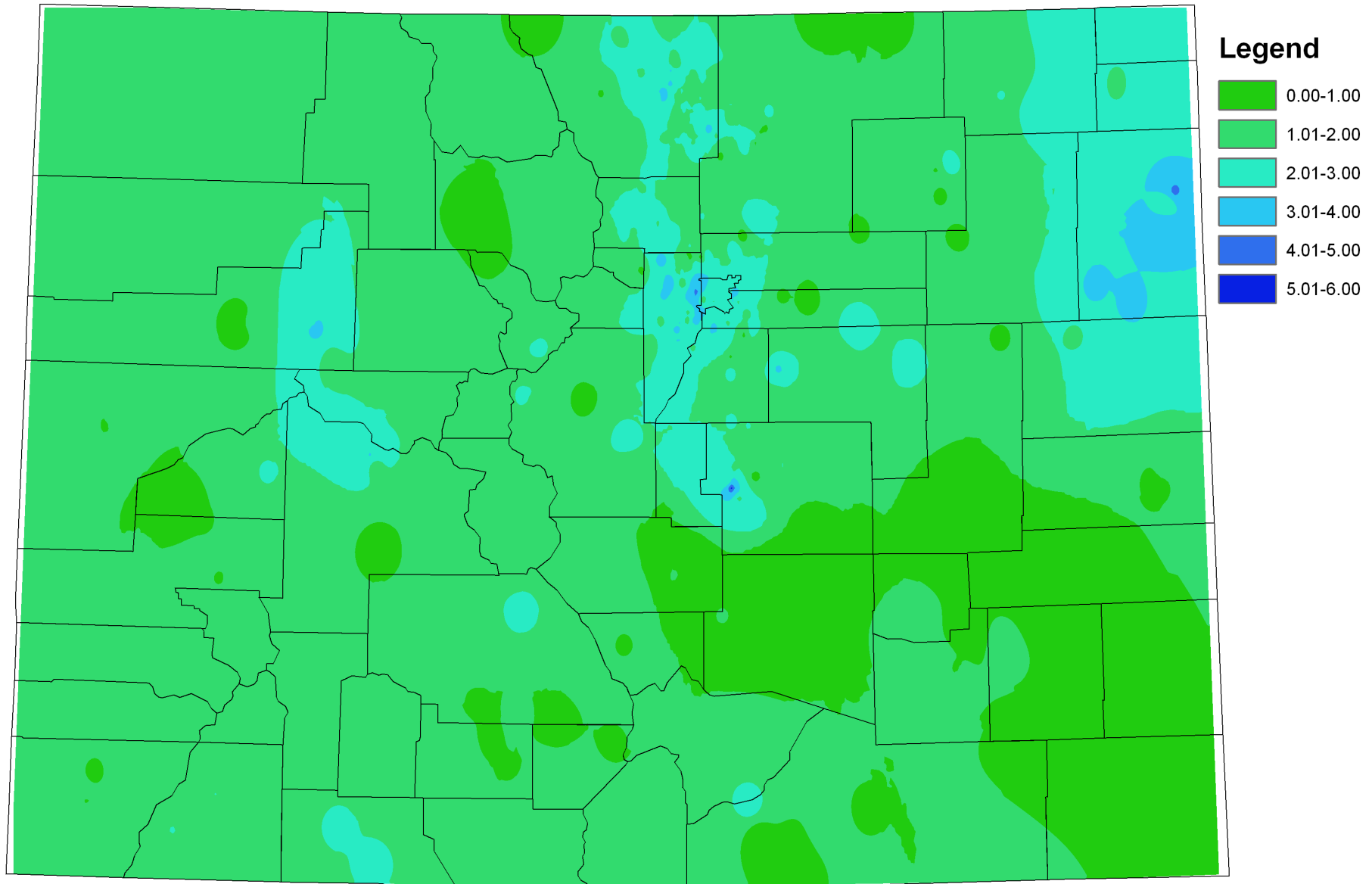
% normal

- <50
- 50-100
- 100-150
- 150-200
- >200

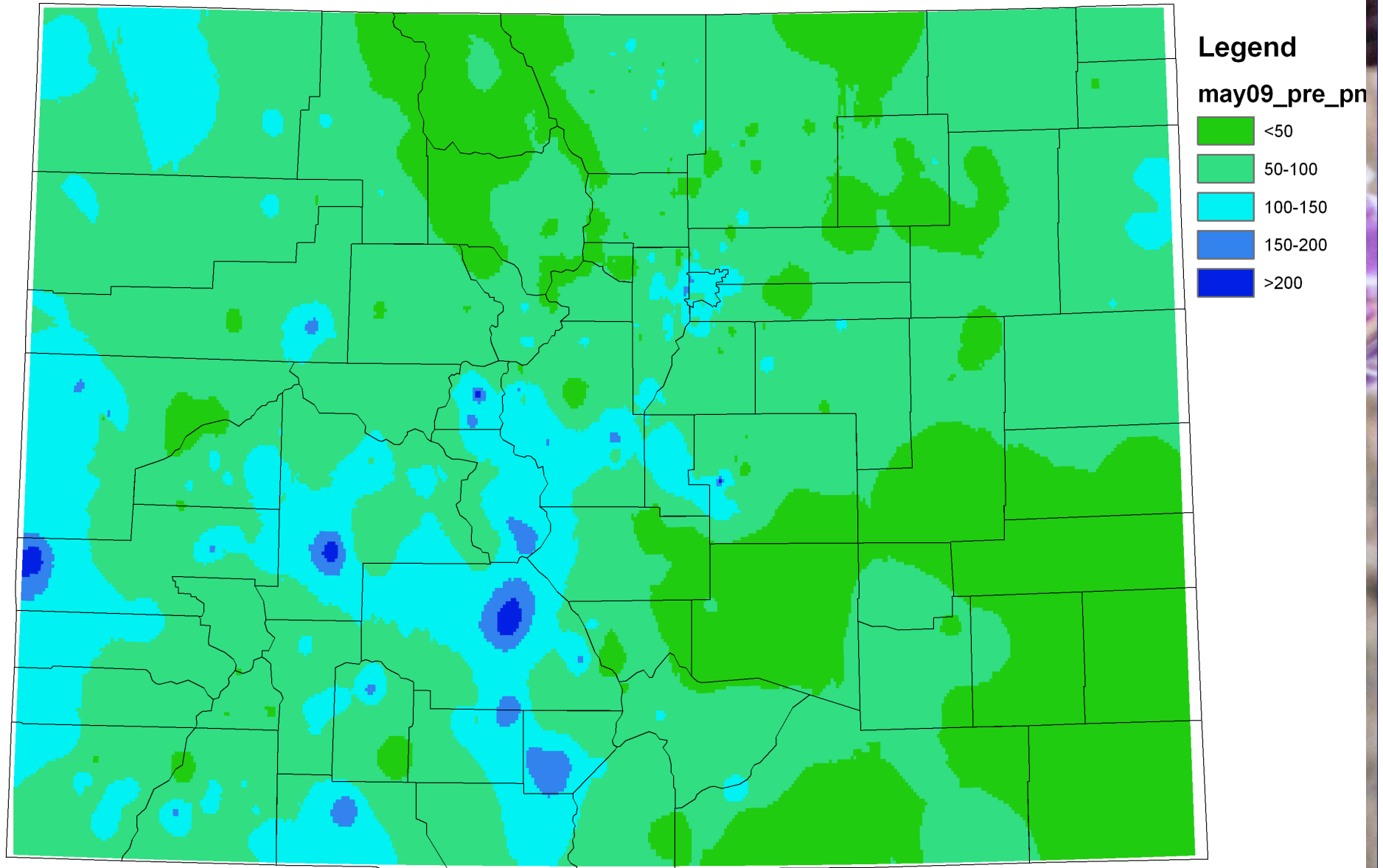
Water Year 2009 Precipitation as Percent of Normal Oct 08 - Apr 09



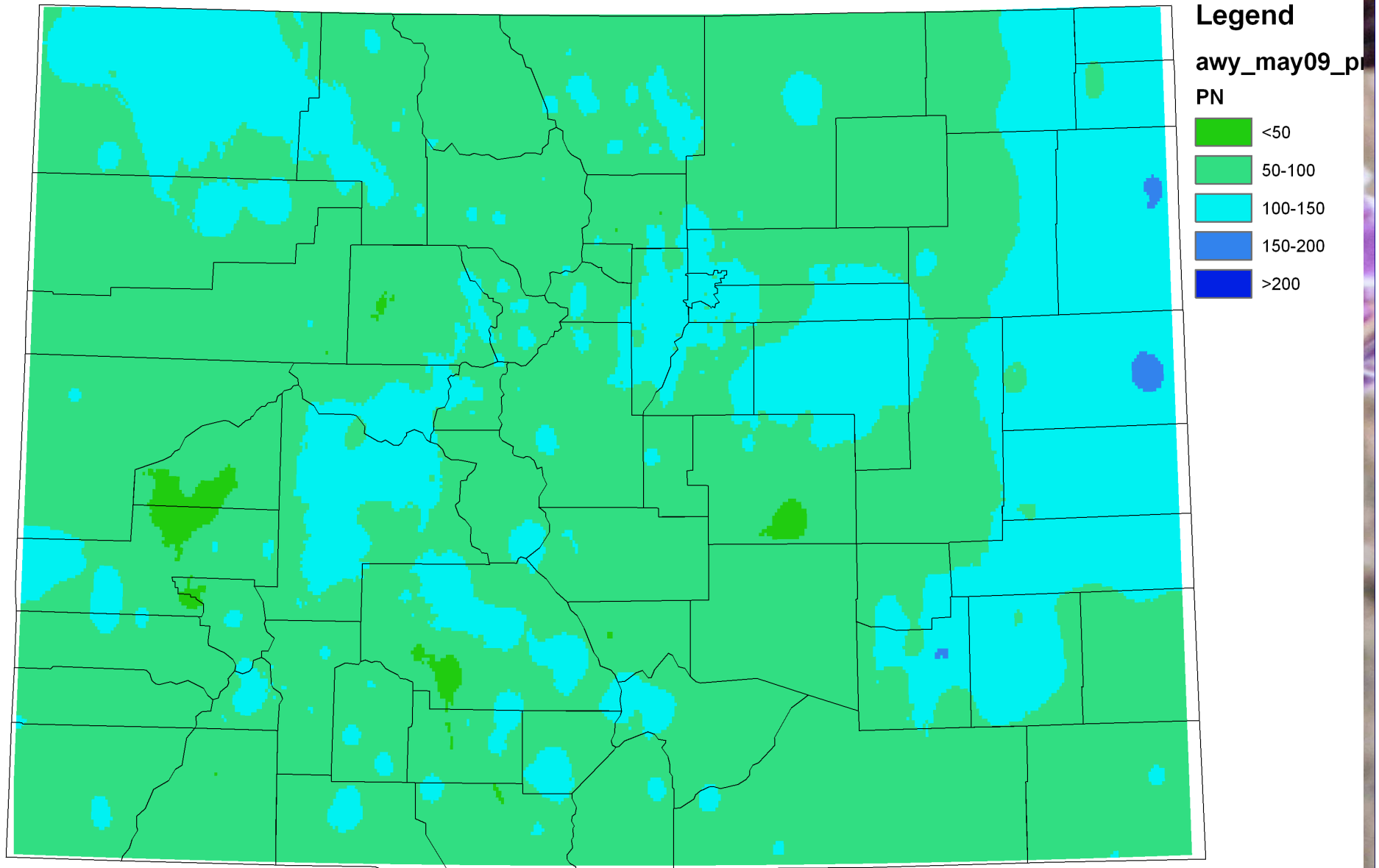
May 1 -26, 2009 Preliminary Precipitation Totals



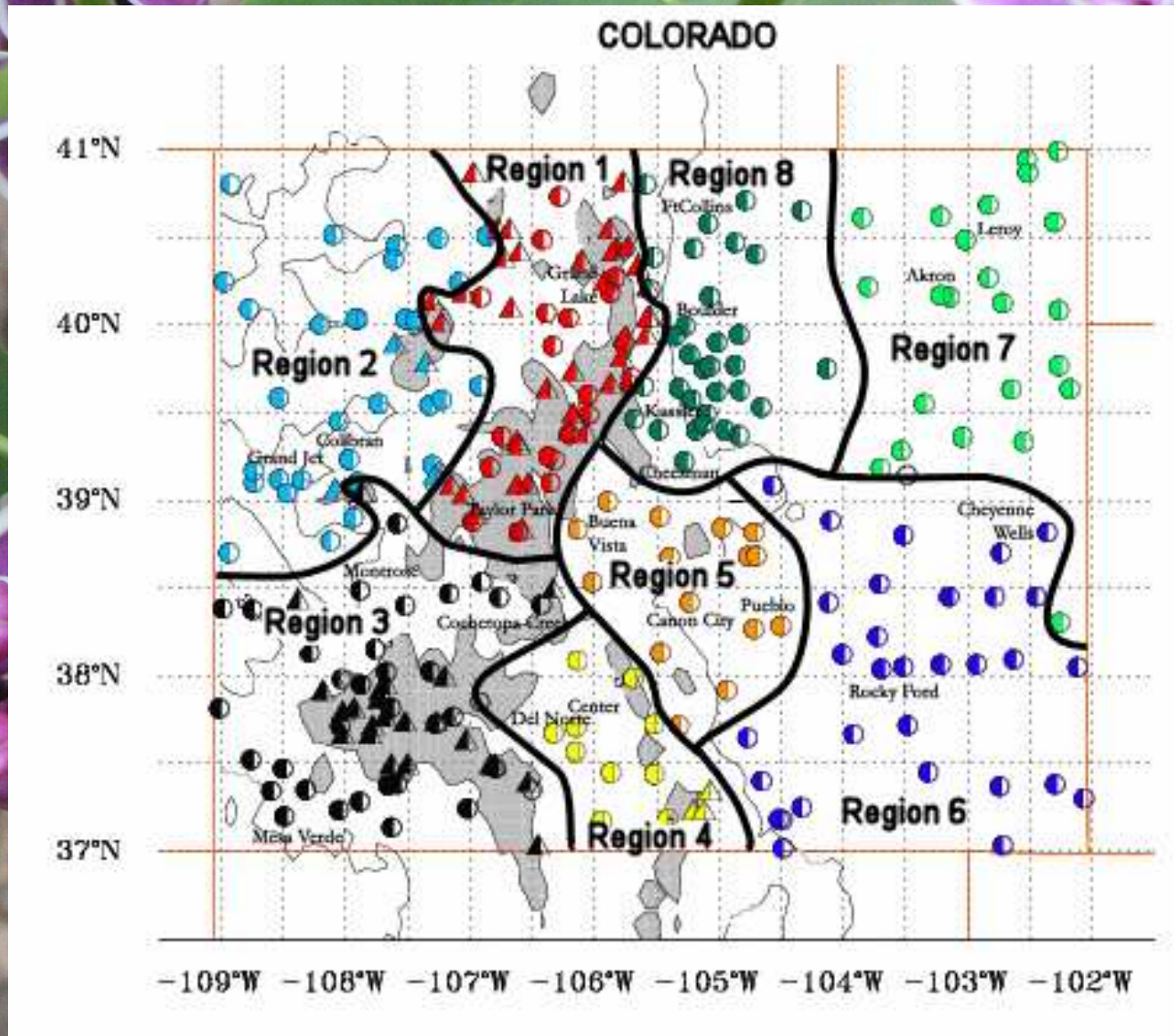
May 1 -26, 2009 Preliminary Precipitation as Percentage of May Normal



Water Year Precipitation as Percent of Normal Oct 1, 2008 - May 26, 2009

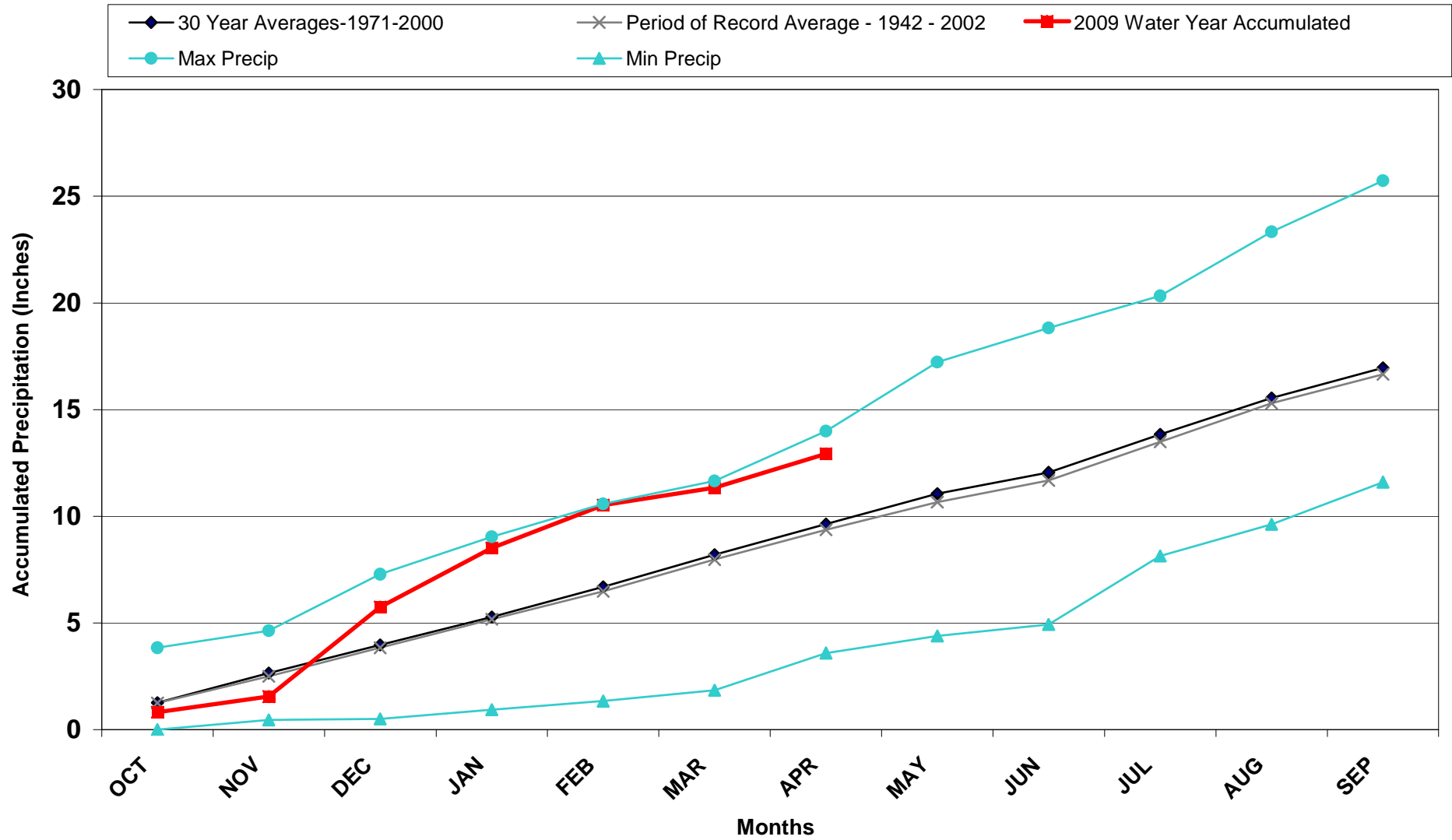


Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO



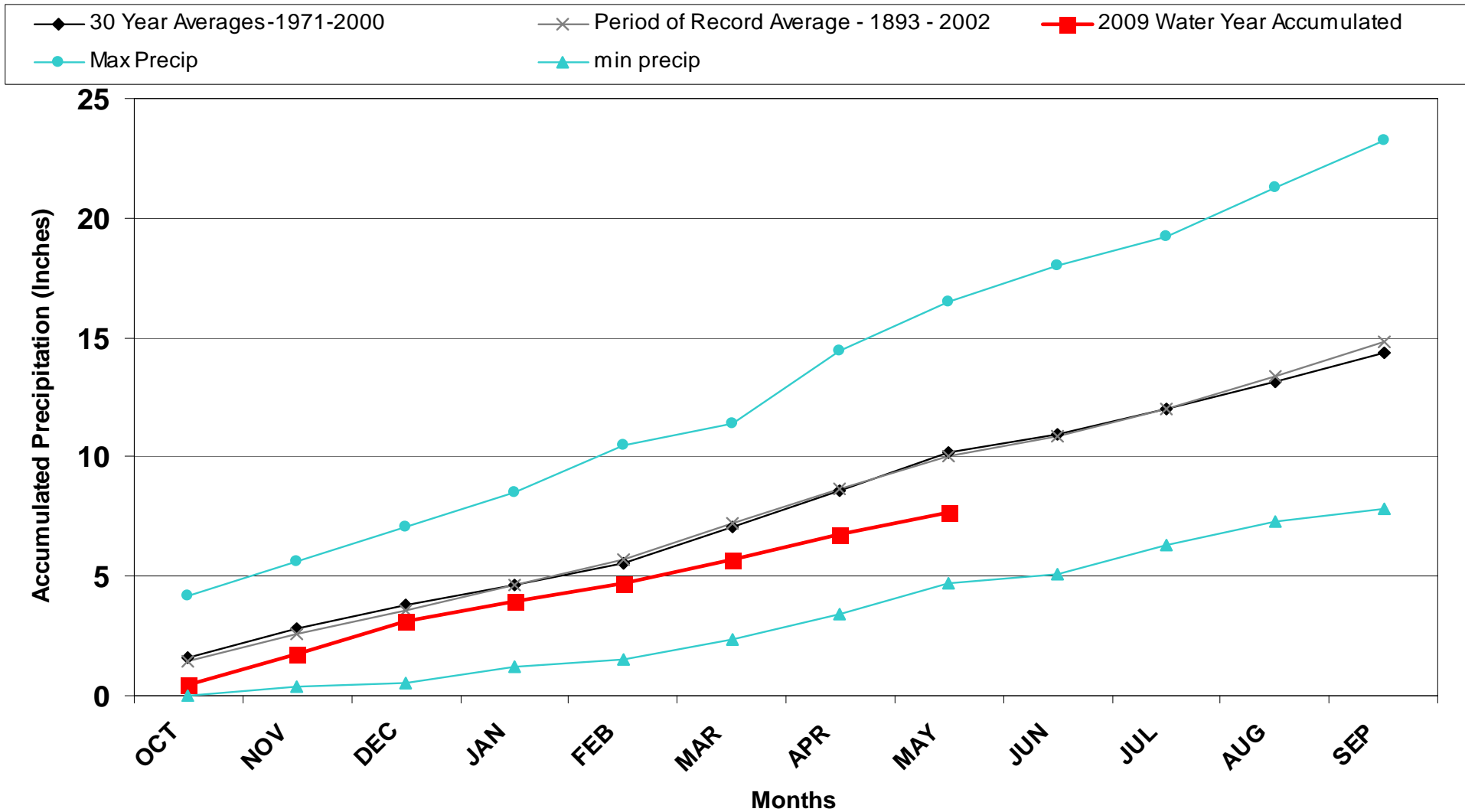
Division 1 – Taylor Park

Taylor Park 2009 Water Year



Division 2 – Collbran

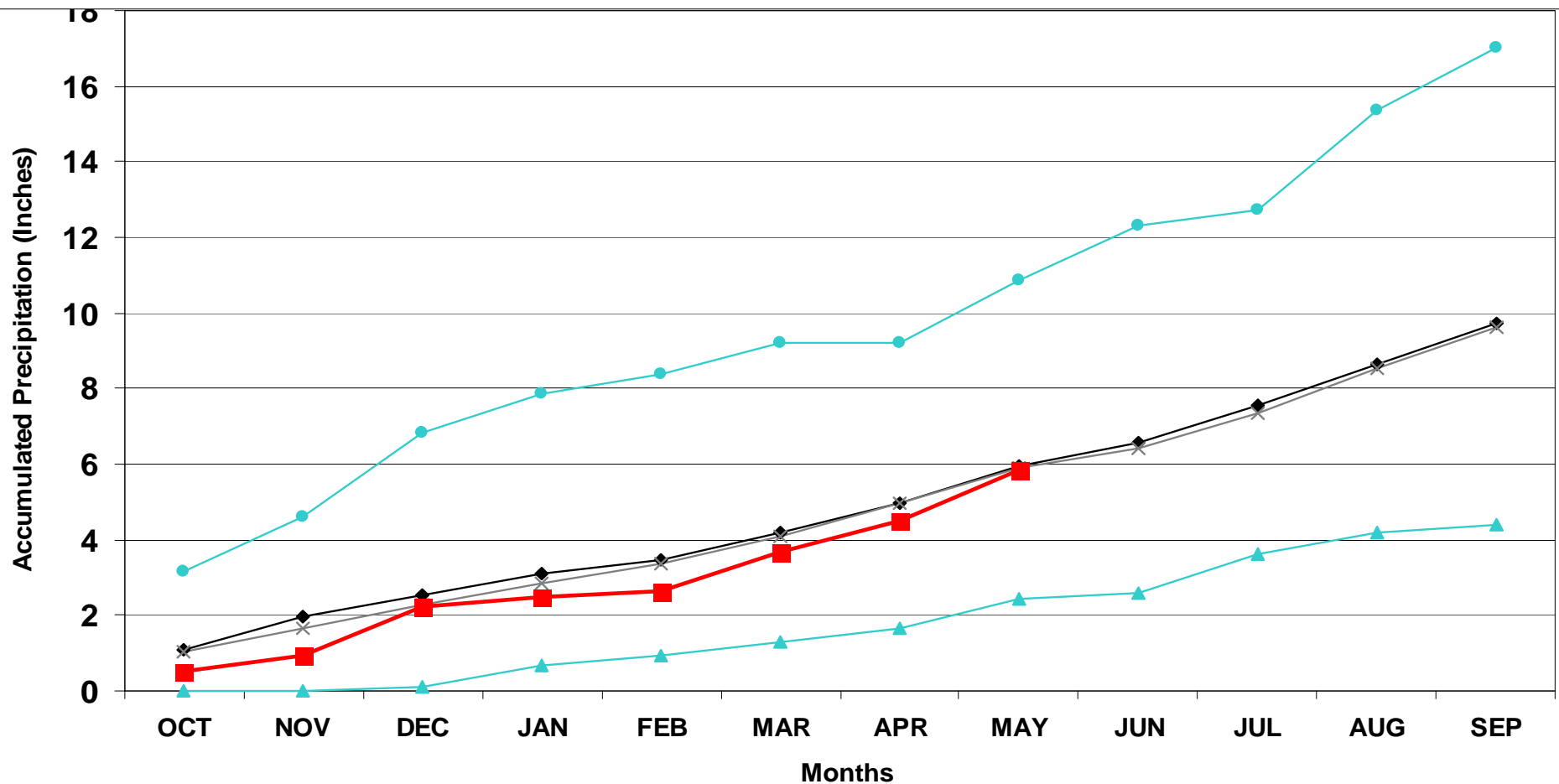
Collbran 2SW 2009 Water Year



Division 3 – Montrose

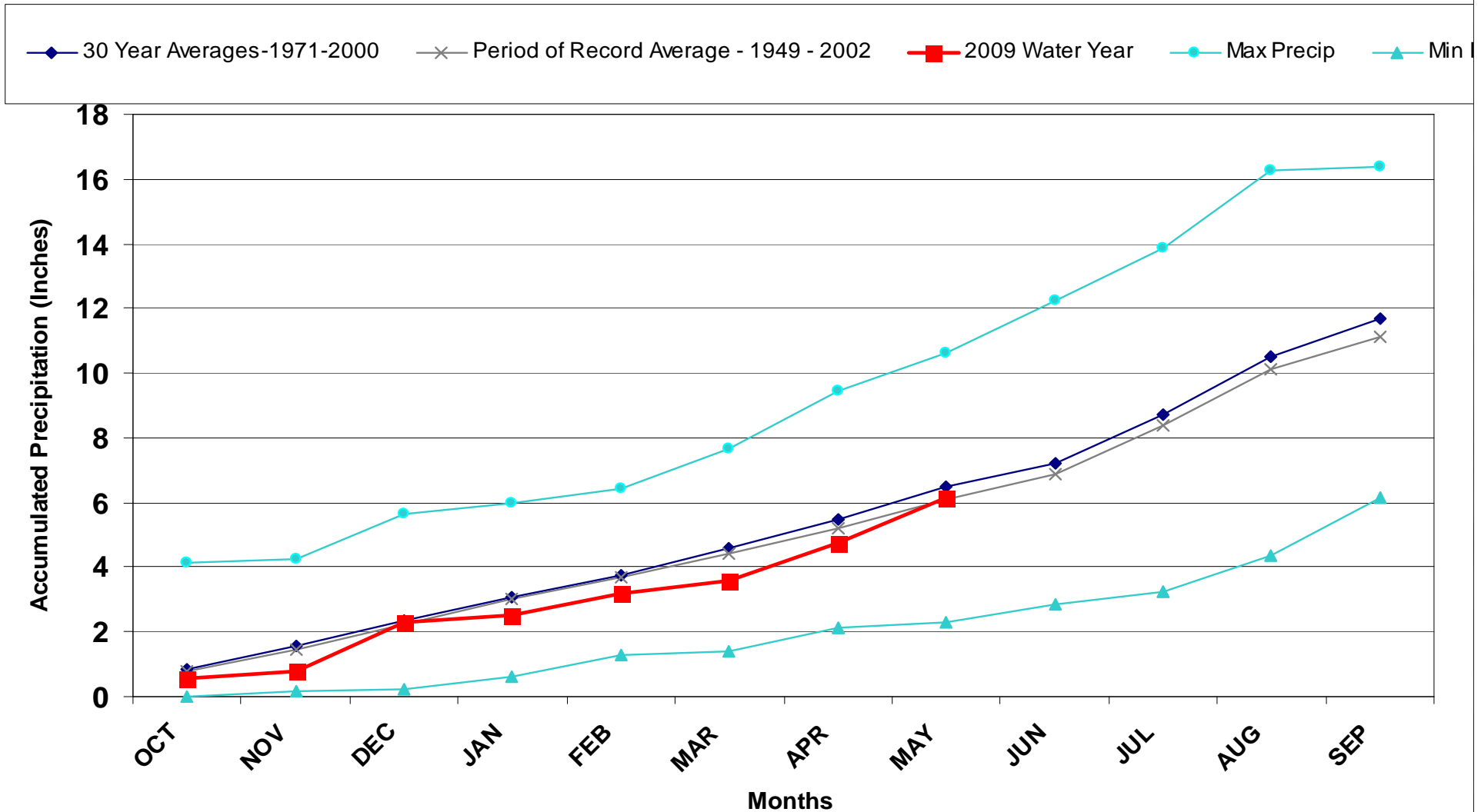
Montrose #2 2009 Water Year

◆ 30 Year Averages-1971-2000 ✕ Period of Record Average - 1893- 2002 ■ 2009 Water Year Accumulated ● Max Precip ▲ Mir



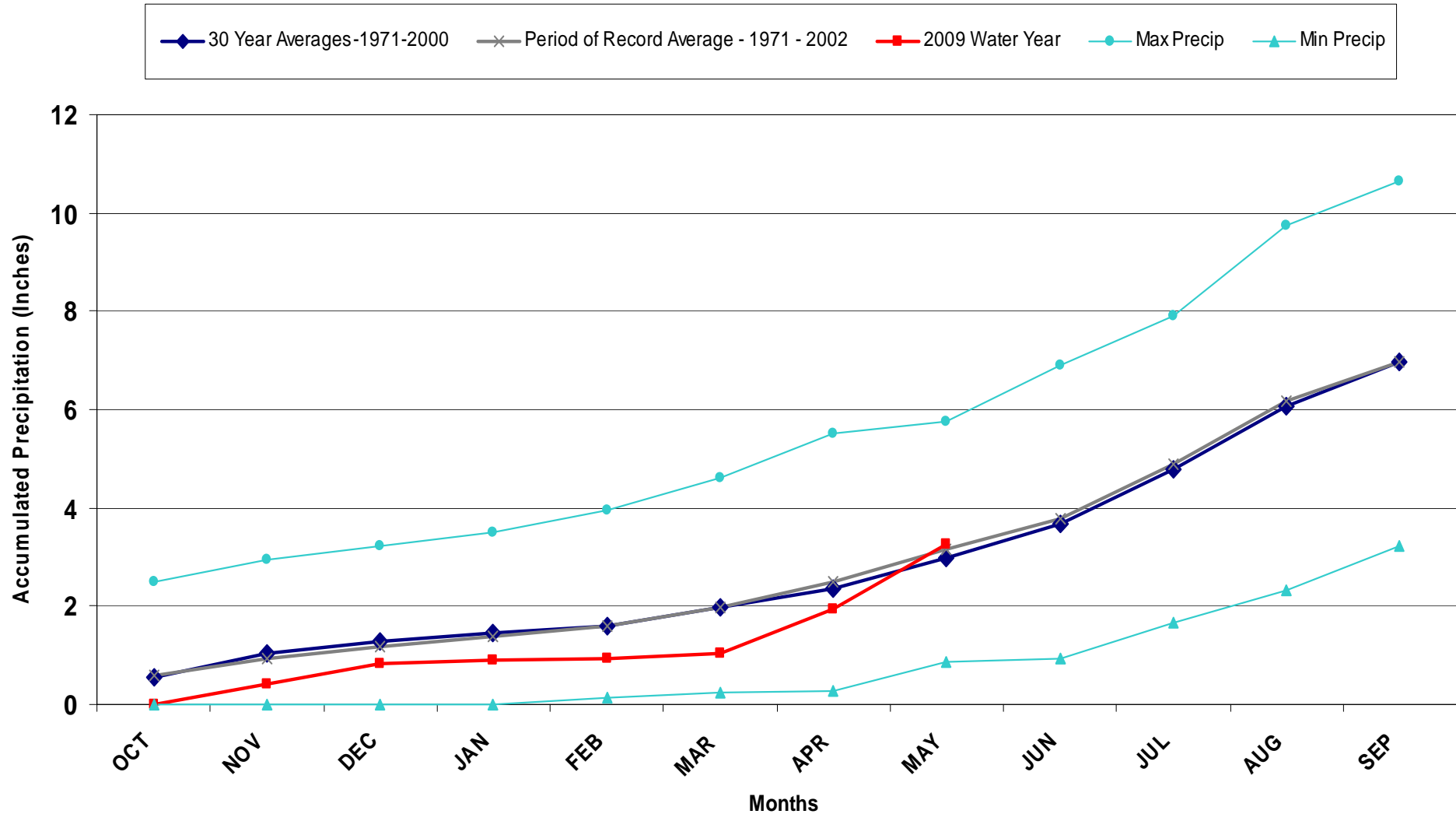
Division 3 – Cochetopa Creek

Cochetopa Creek 2009 Water Year



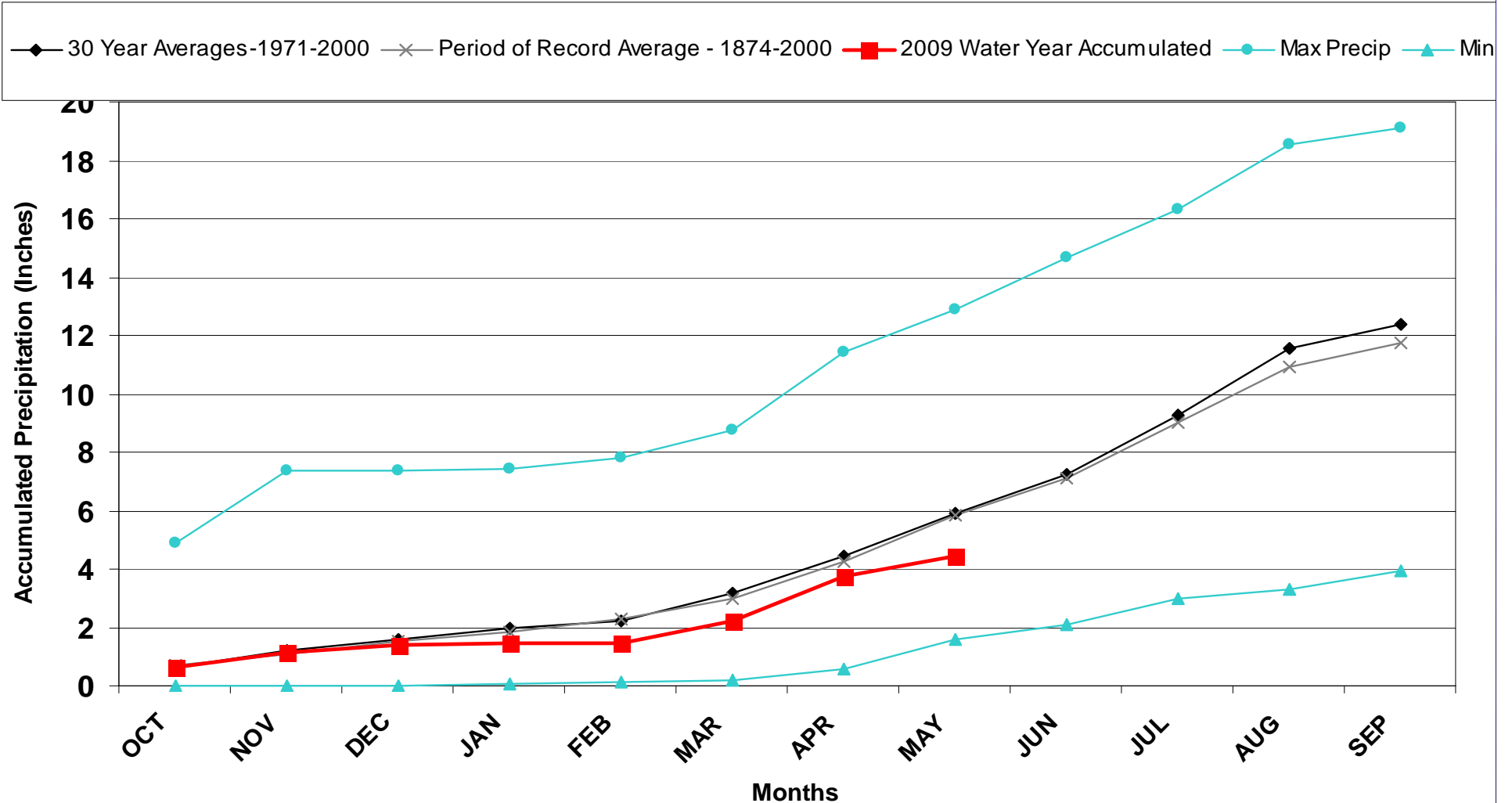
Division 4 – Center

Center 4SSW 2009 Water Year



Division 5 – Pueblo

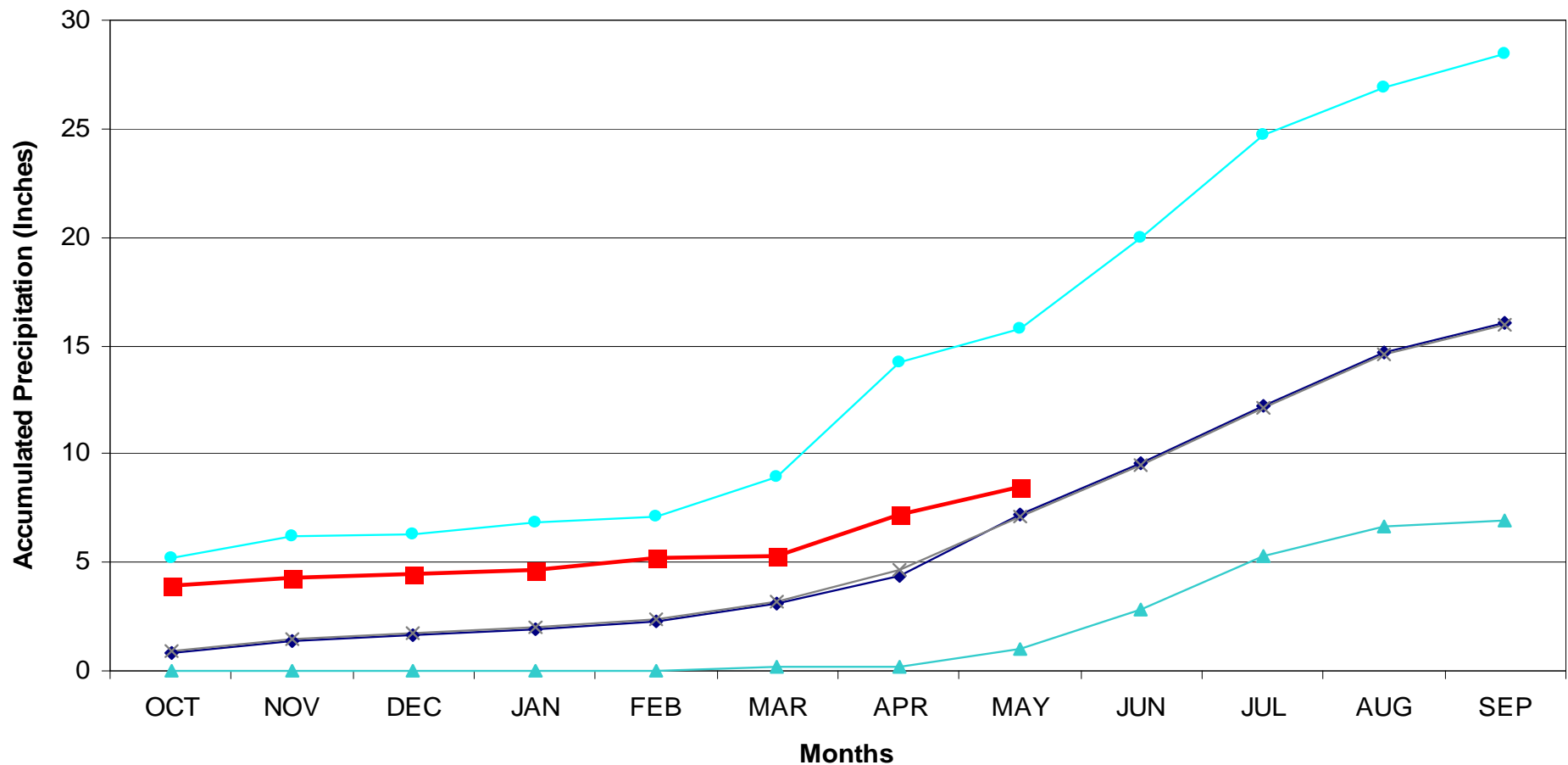
Pueblo WSO 2009 Water Year



Division 6 – Cheyenne Wells

Cheyenne Wells 2009 Water Year

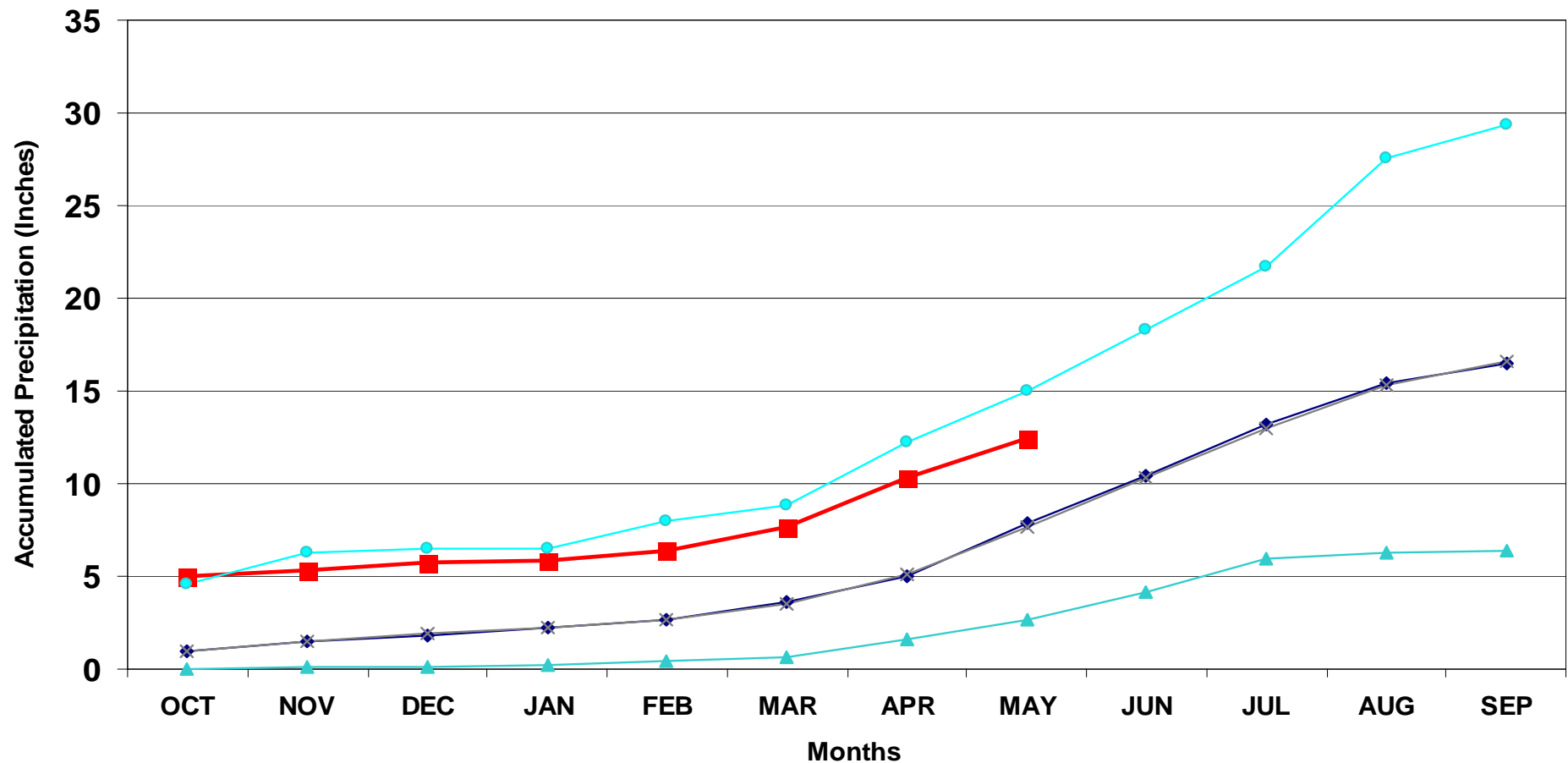
◆ 30 Year Averages-1971-2000 ✕ Period of Record Average - 1971 - 2002 ■ 2009 Water Year ● Max_Precip ▲ Min pr



Division 6 - Burlington

Burlington 2009 Water Year

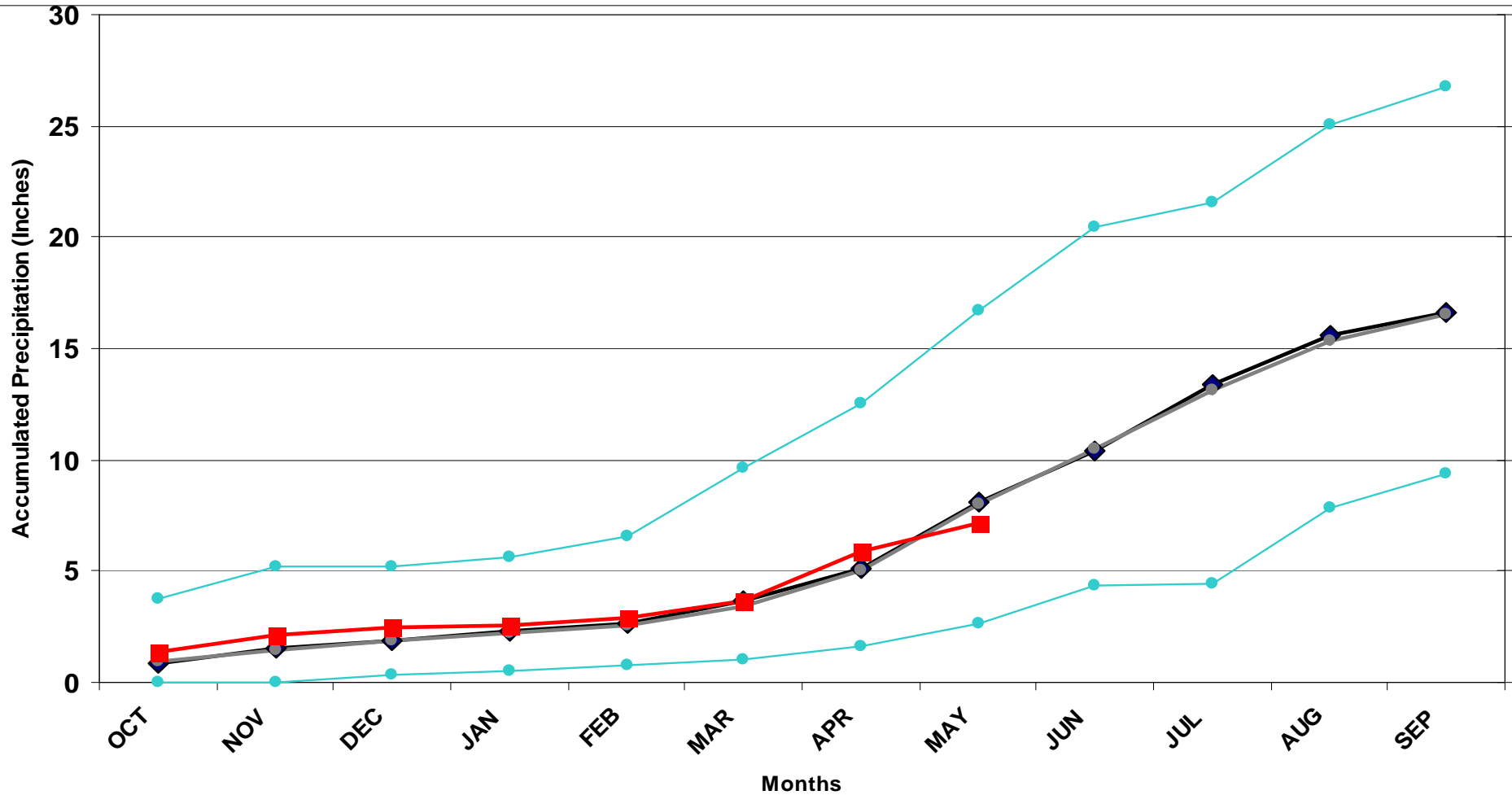
◆ 30 Year Averages-1971-2000 ✕ Period of Record Average - 1892-2002 ■ 2009 Water Year ● Max Precip ▲ Min Pr



Division 7 – Akron

Akron 4E 2009 Water Year

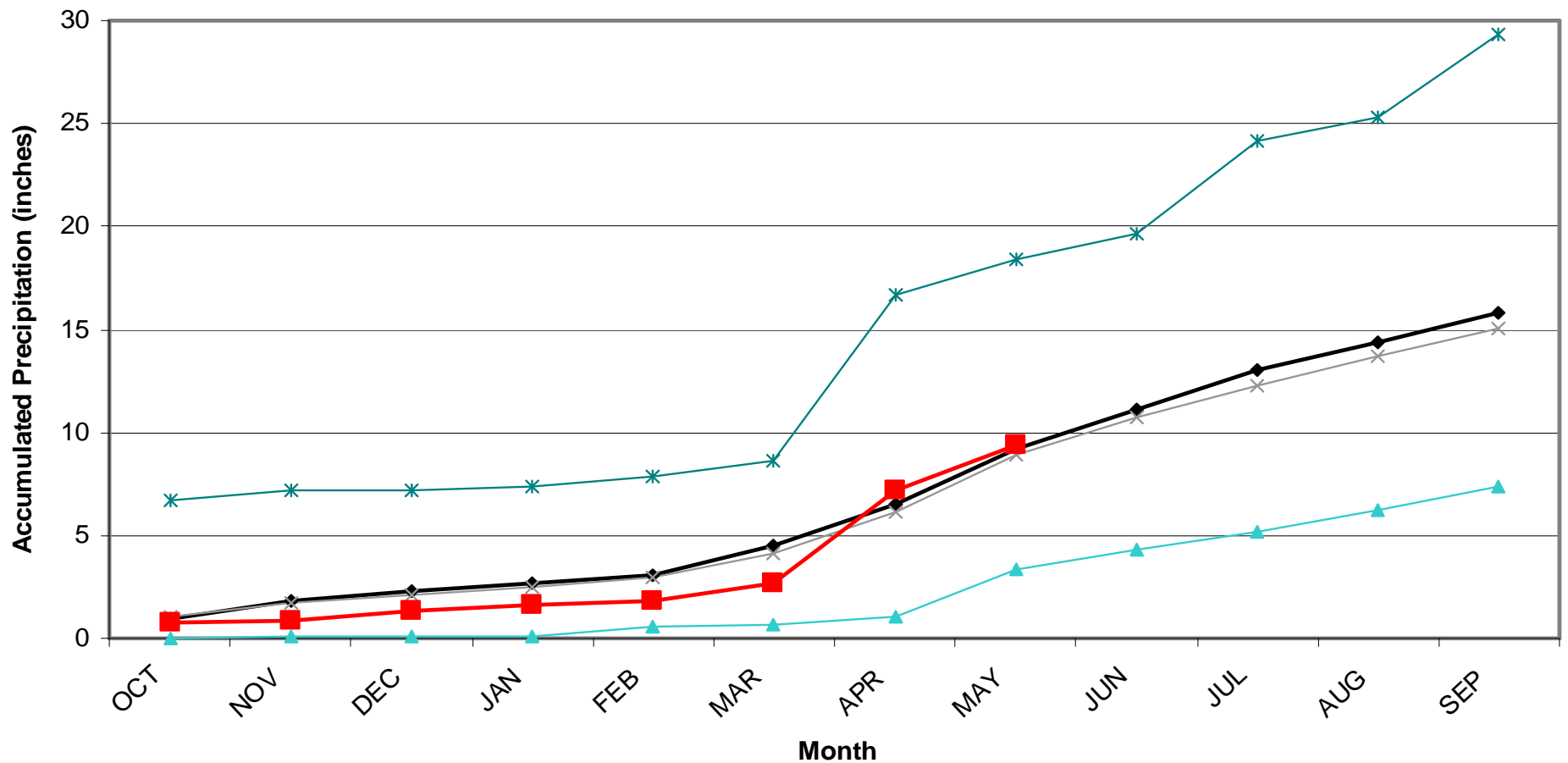
◆ 30 Year Averages-1971-2000 ● Period of Record Average - 1906 - 2002 ■ 2009 Water Year Accumulated
● Max Precip ● Min Precip Year of Max



Division 8 – Fort Collins

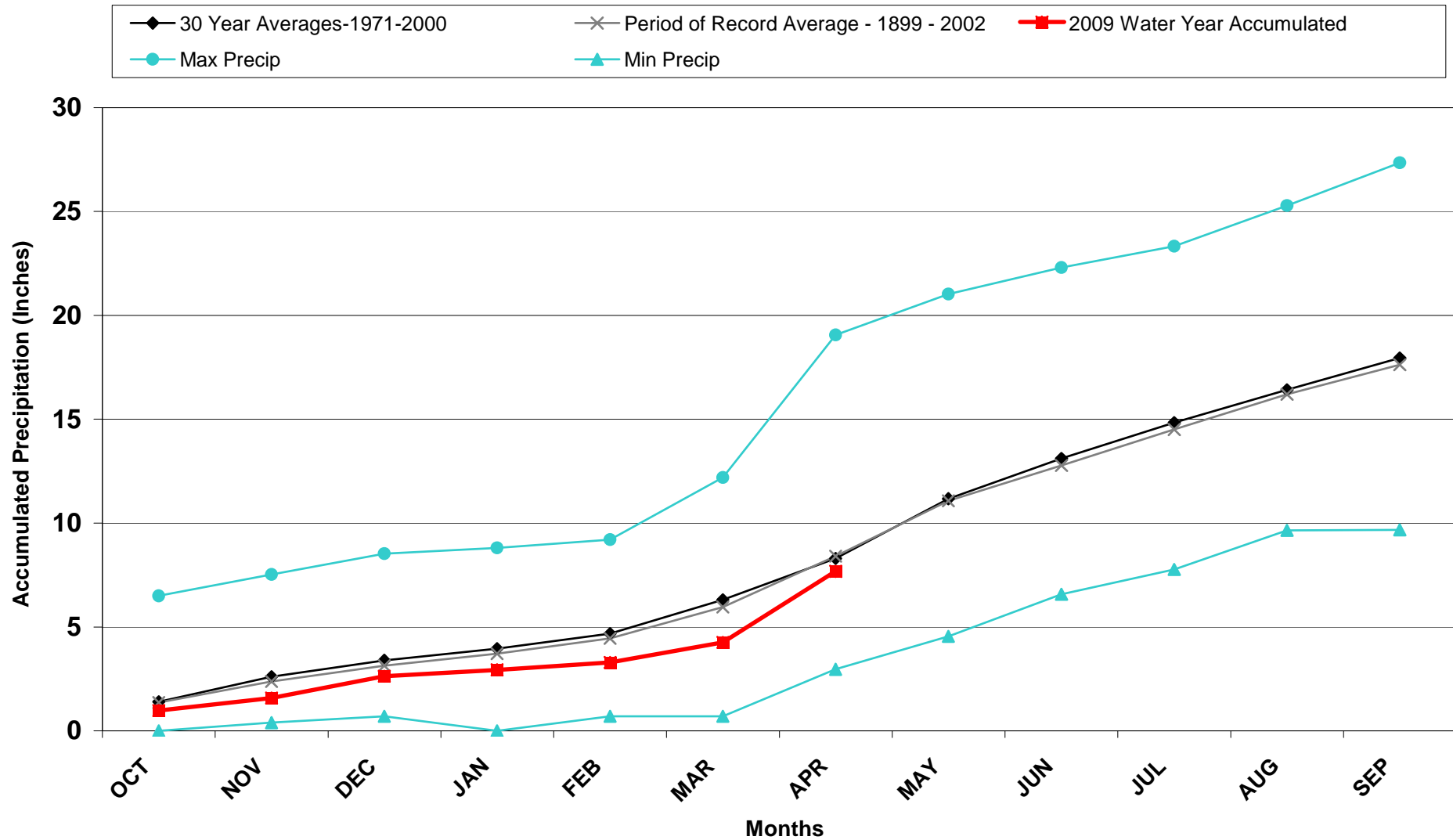
Fort Collins 2009 Water Year

◆ 30 Year Averages-1971-2000 × Period of Record Average - 1890 - 2002 ■ 2009 Water Year * Max Precip ▲ Min P



Division 8 – Kassler

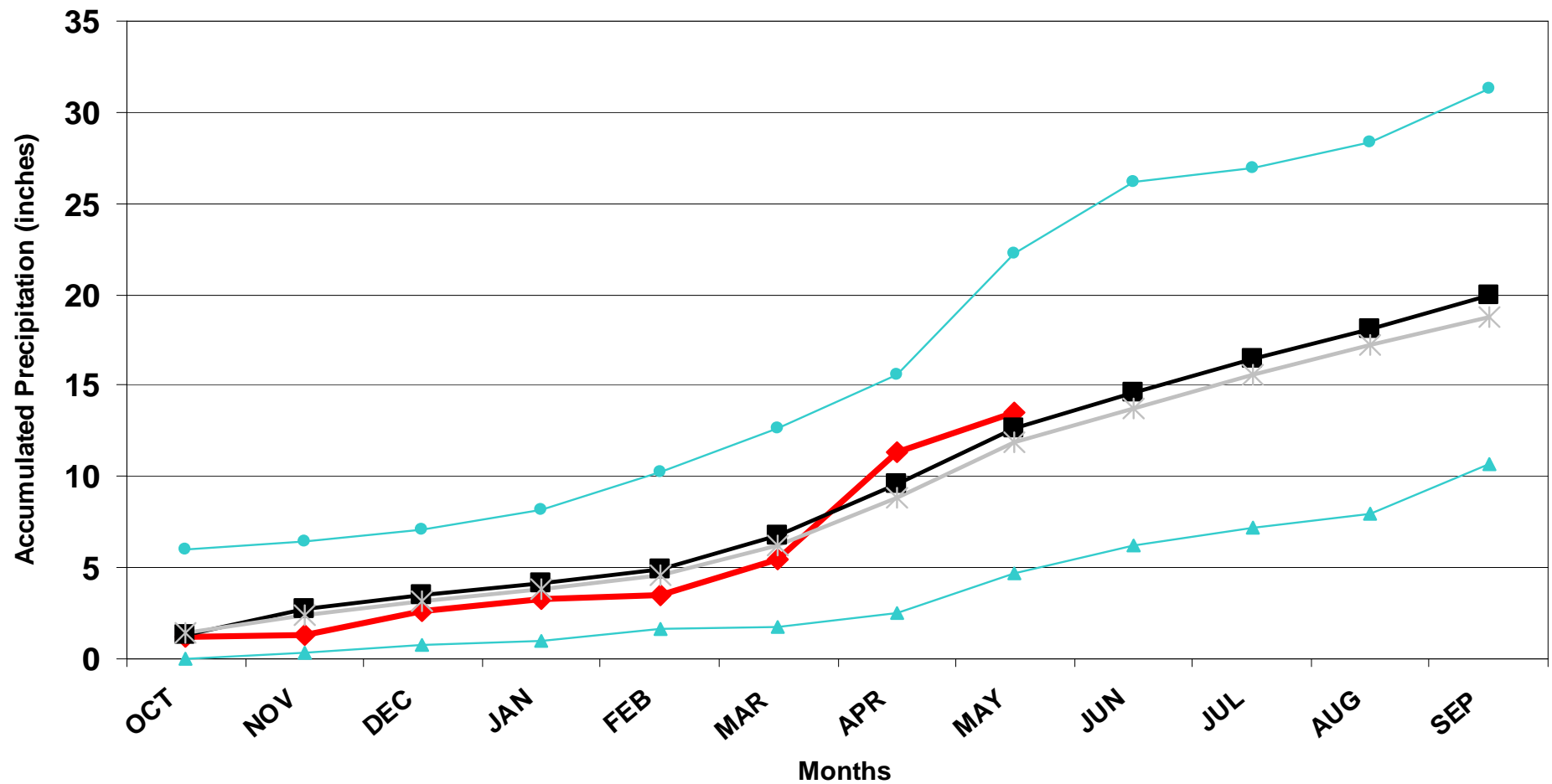
Kassler 2009 Water Year



Division 8 - Boulder

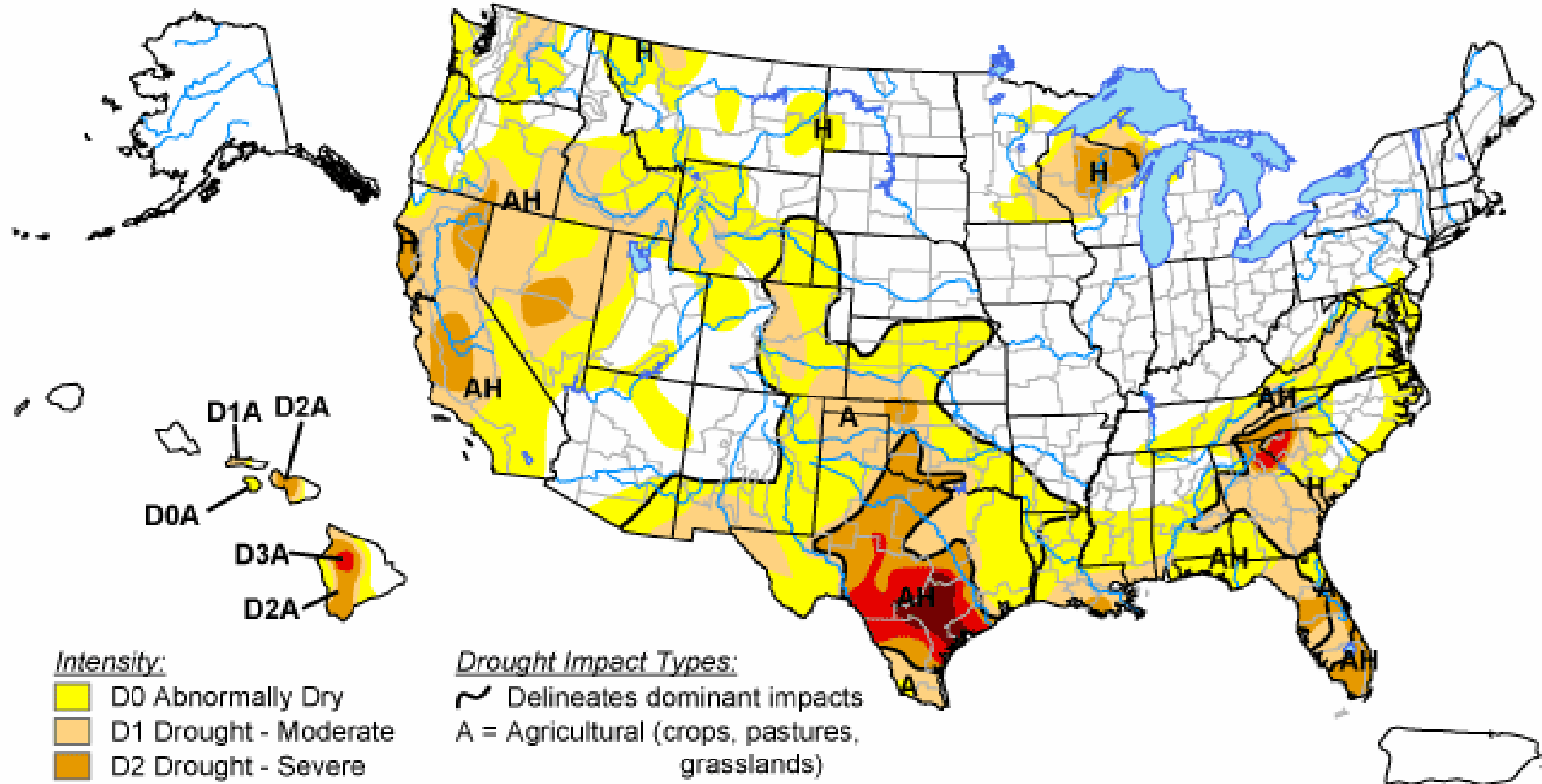
Boulder 2009 Water Year

◆ 2009 Water Year ■ 30 Year Averages-1971-2000 * Period of Record Average - 1894-2002 ● Max Precip ▲ Min Pr








U.S. Drought Monitor


March 17, 2009
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.

<http://drought.unl.edu/dm>

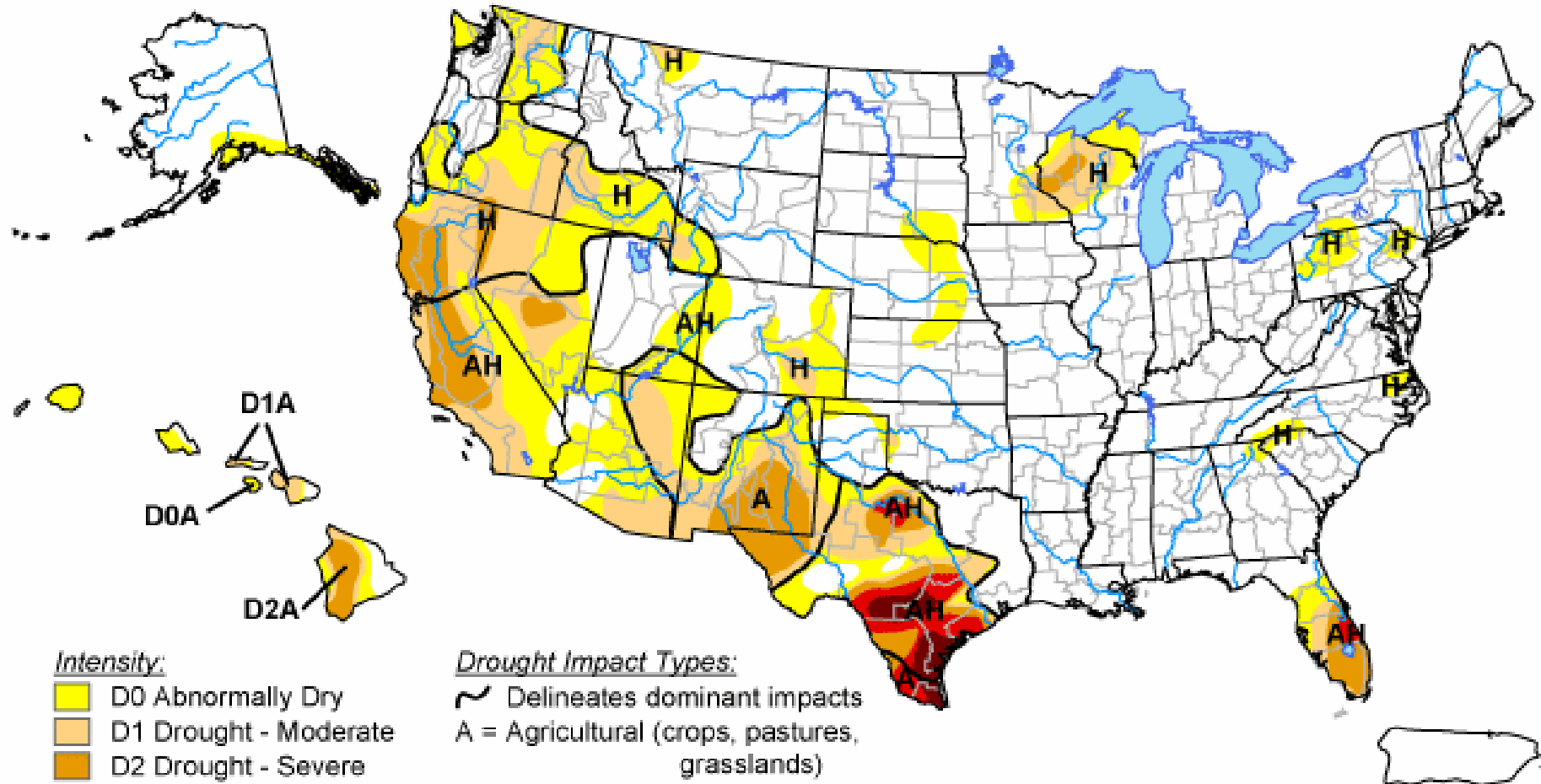


Released Thursday, March 19, 2009






Author: Laura Edwards, Western Regional Climate Center

U.S. Drought Monitor


May 19, 2009
Valid 8 a.m. EDT



Intensity:

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

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- H = Hydrological (water)

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

<http://drought.unl.edu/dm>



Released Thursday, May 21, 2009

Authors: M. Rosencrans, D. Miskus, A. Artusa, CPC/NOAA

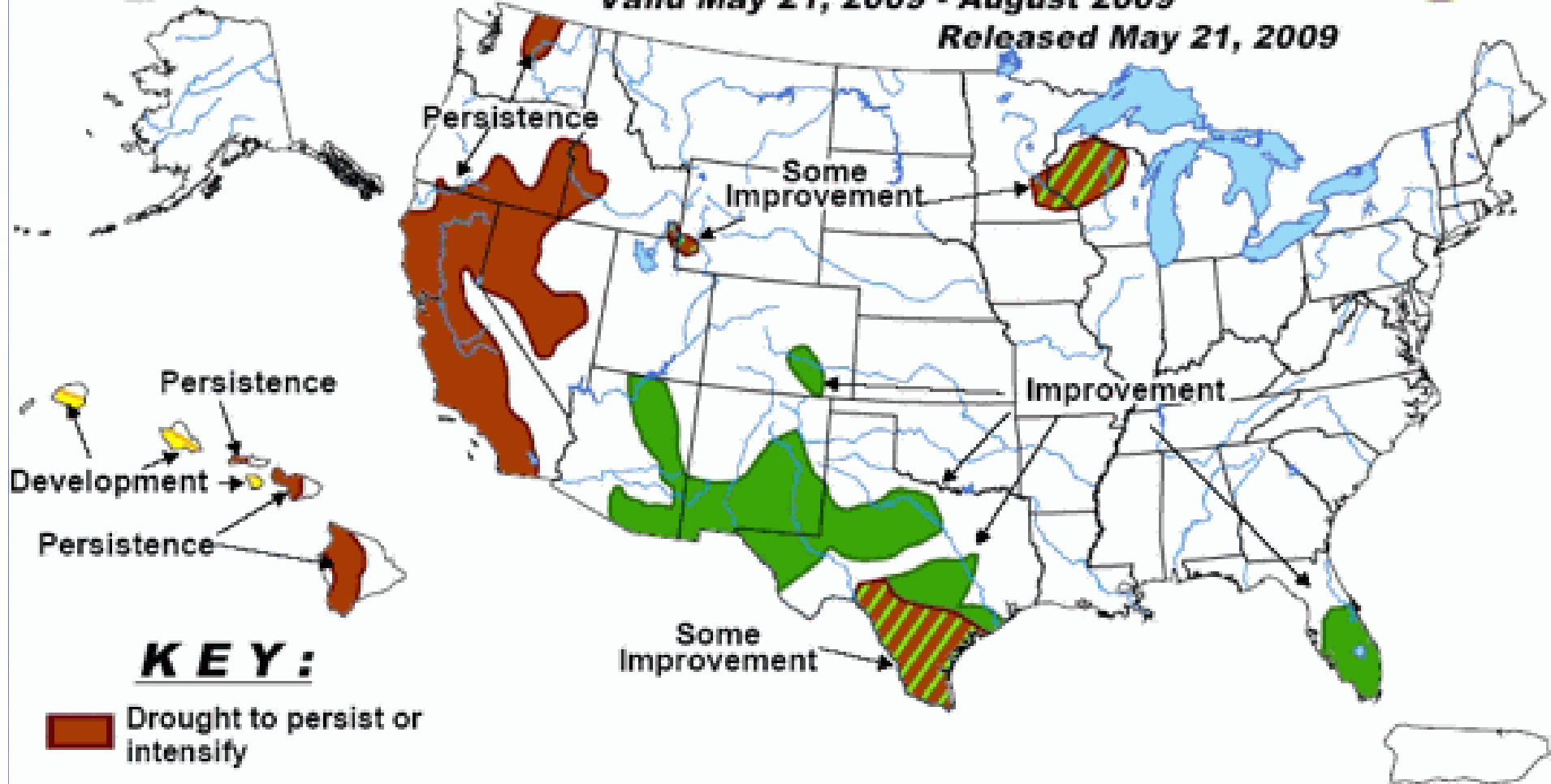


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid May 21, 2009 - August 2009

Released May 21, 2009

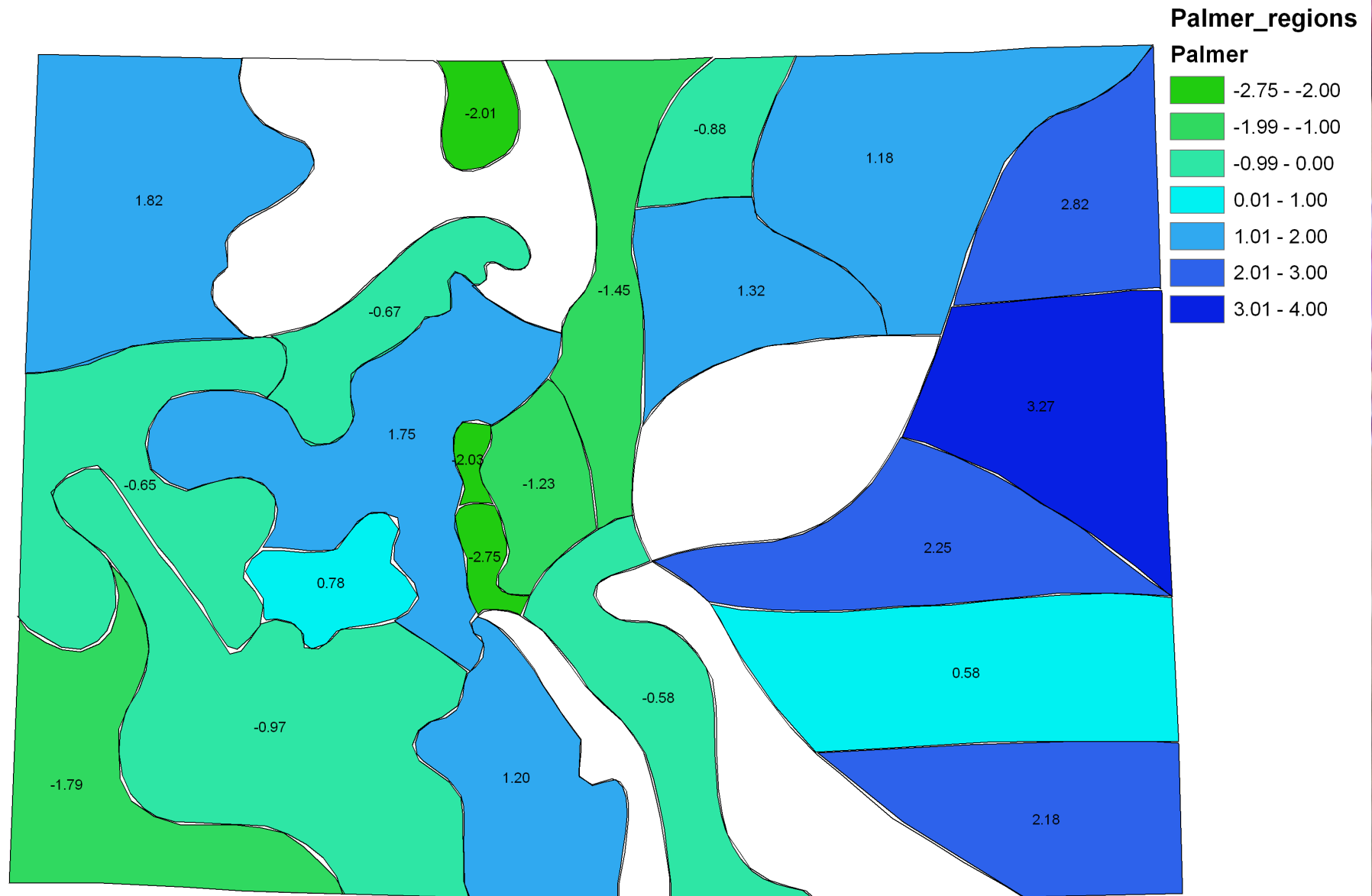


KEY:

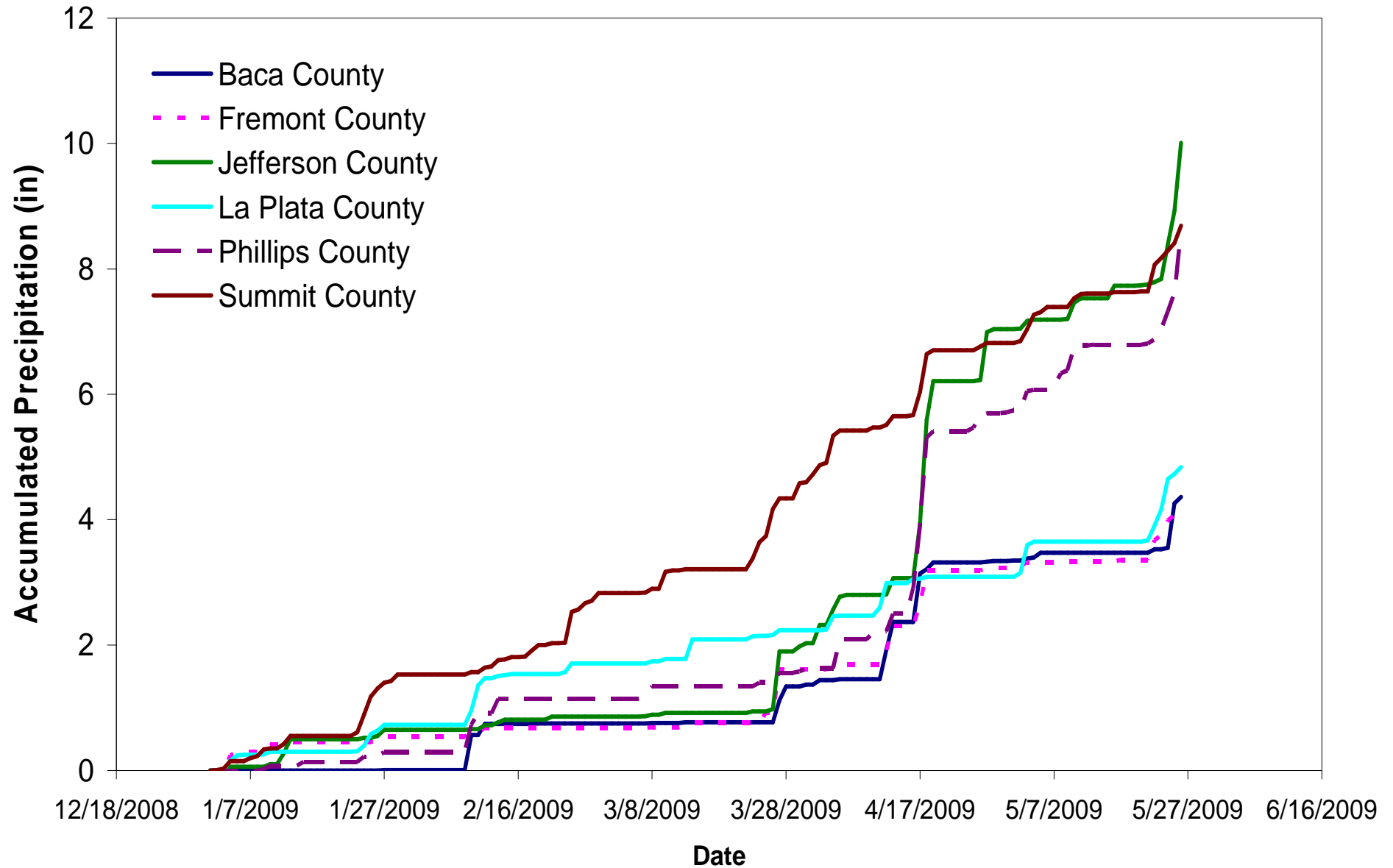
-  Drought to persist or intensify
-  Drought ongoing, some improvement
-  Drought likely to improve, impacts ease
-  Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events – such as individual storms – cannot be accurately forecast more than a few days in advance. Use caution for applications – such as crops – that can be affected by such events. “Ongoing” drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

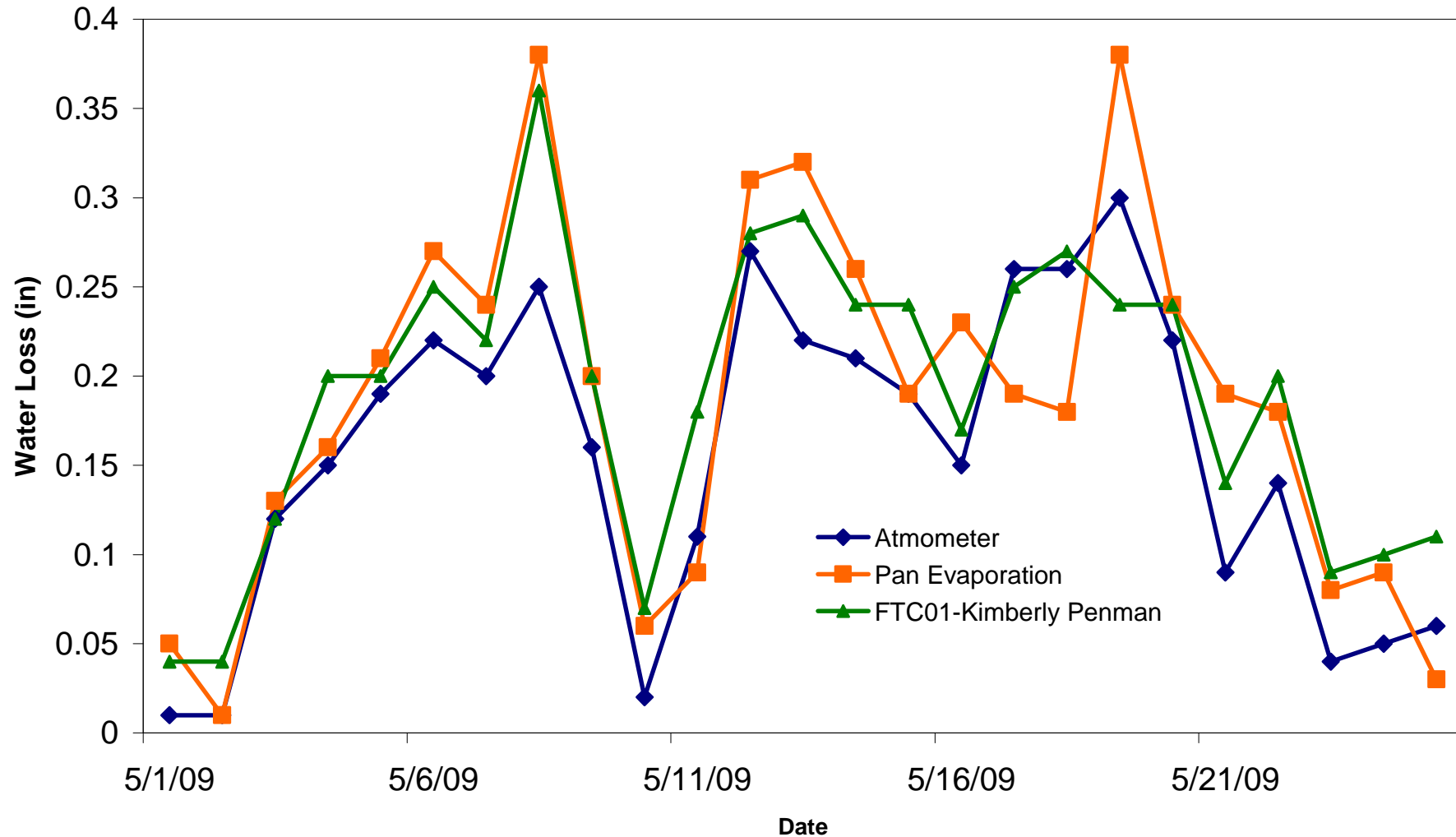
Modified Palmer Drought Index April 2009



CoCoRaHS Accumulated Daily Precipitation for Selected Counties (Jan 1 - May 26, 2009)



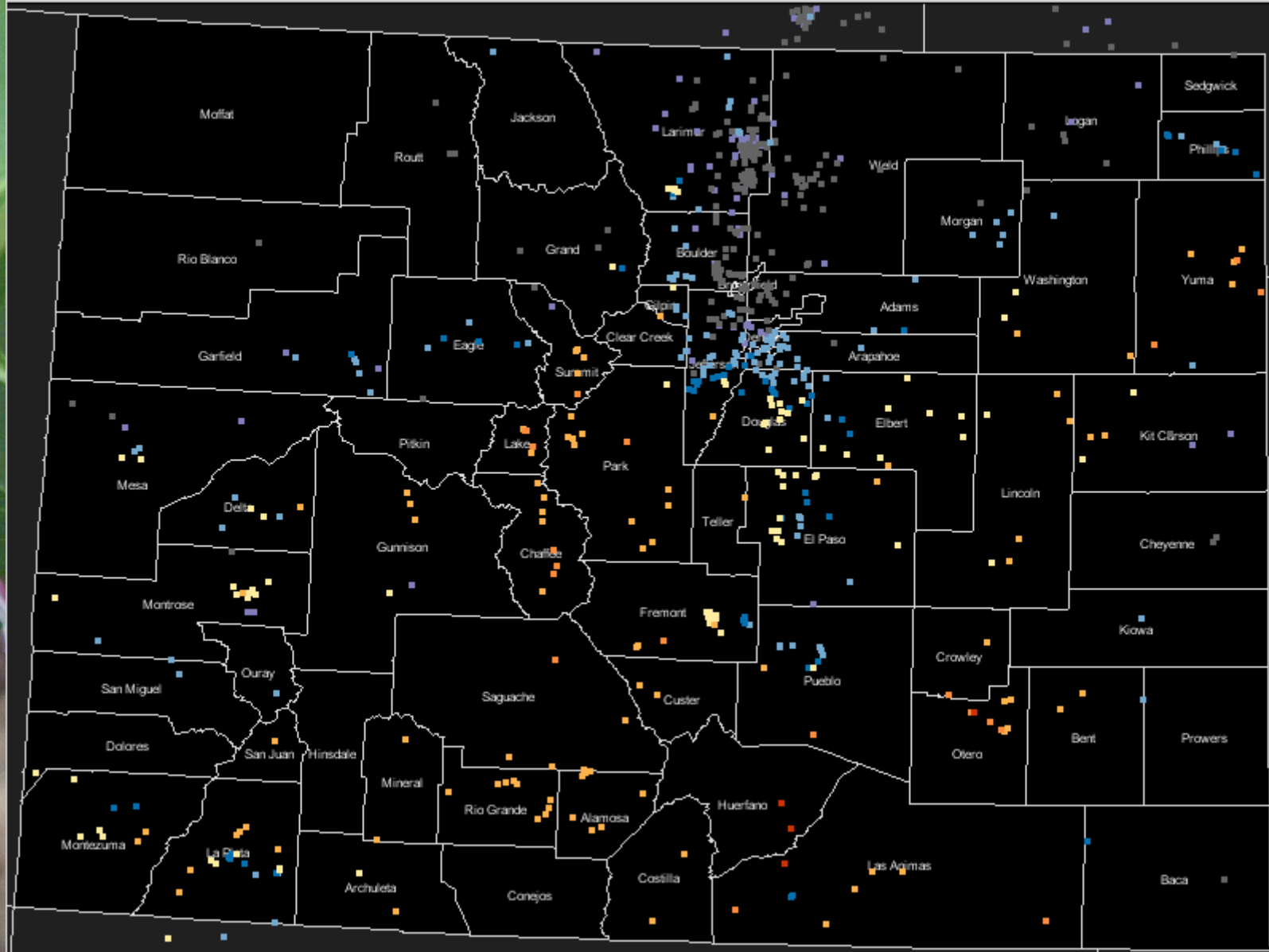
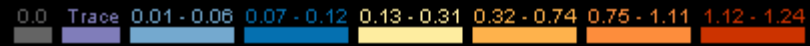
Evapotranspiration/Pan Evaporation Comparison Fort Collins, CO



May 22, 2009

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 5/22/2009

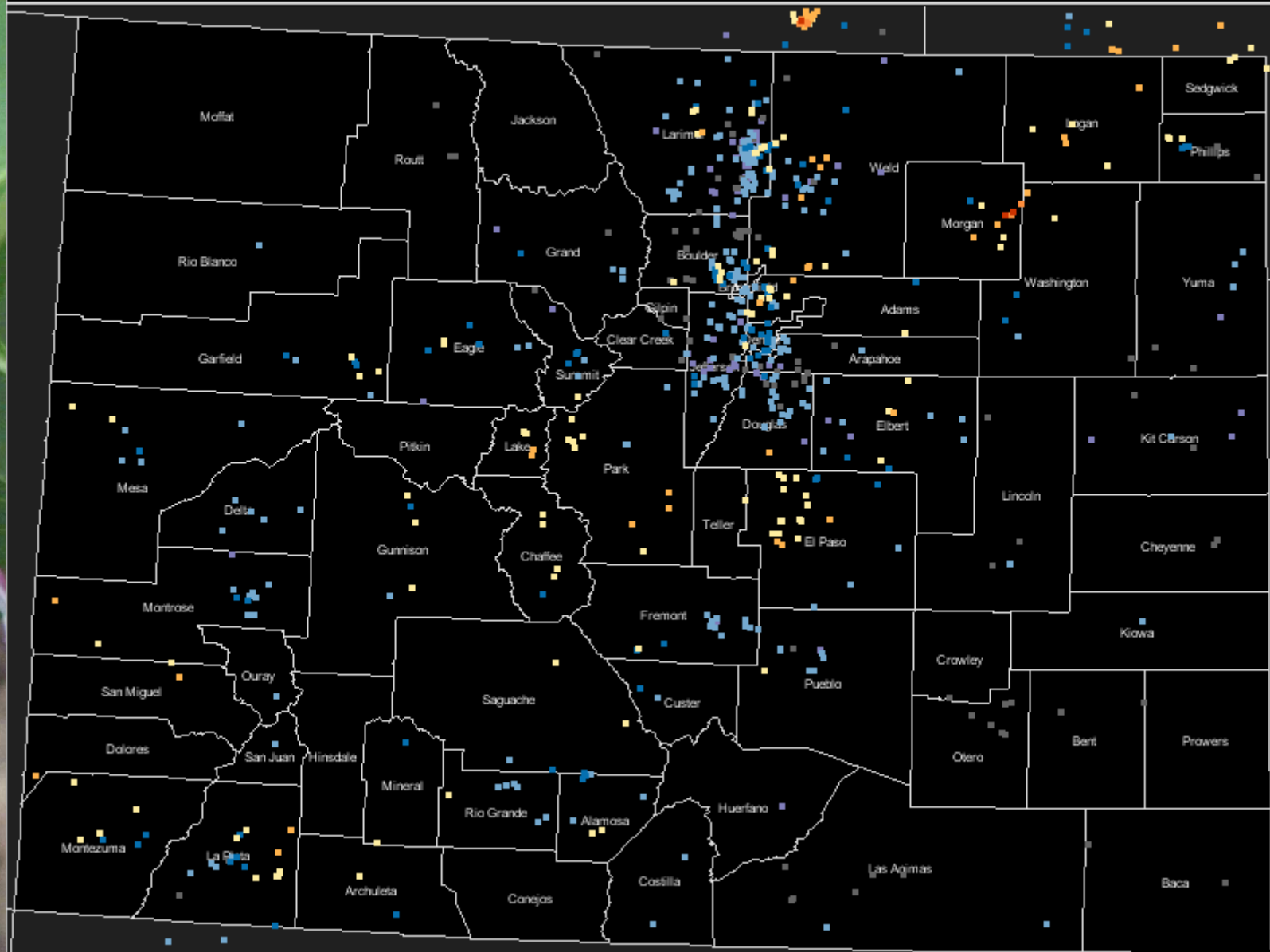


May 23, 2009

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 5/23/2009

0.0 Trace 0.01 - 0.11 0.12 - 0.22 0.23 - 0.55 0.56 - 1.33 1.34 - 2.00 2.01 - 2.23

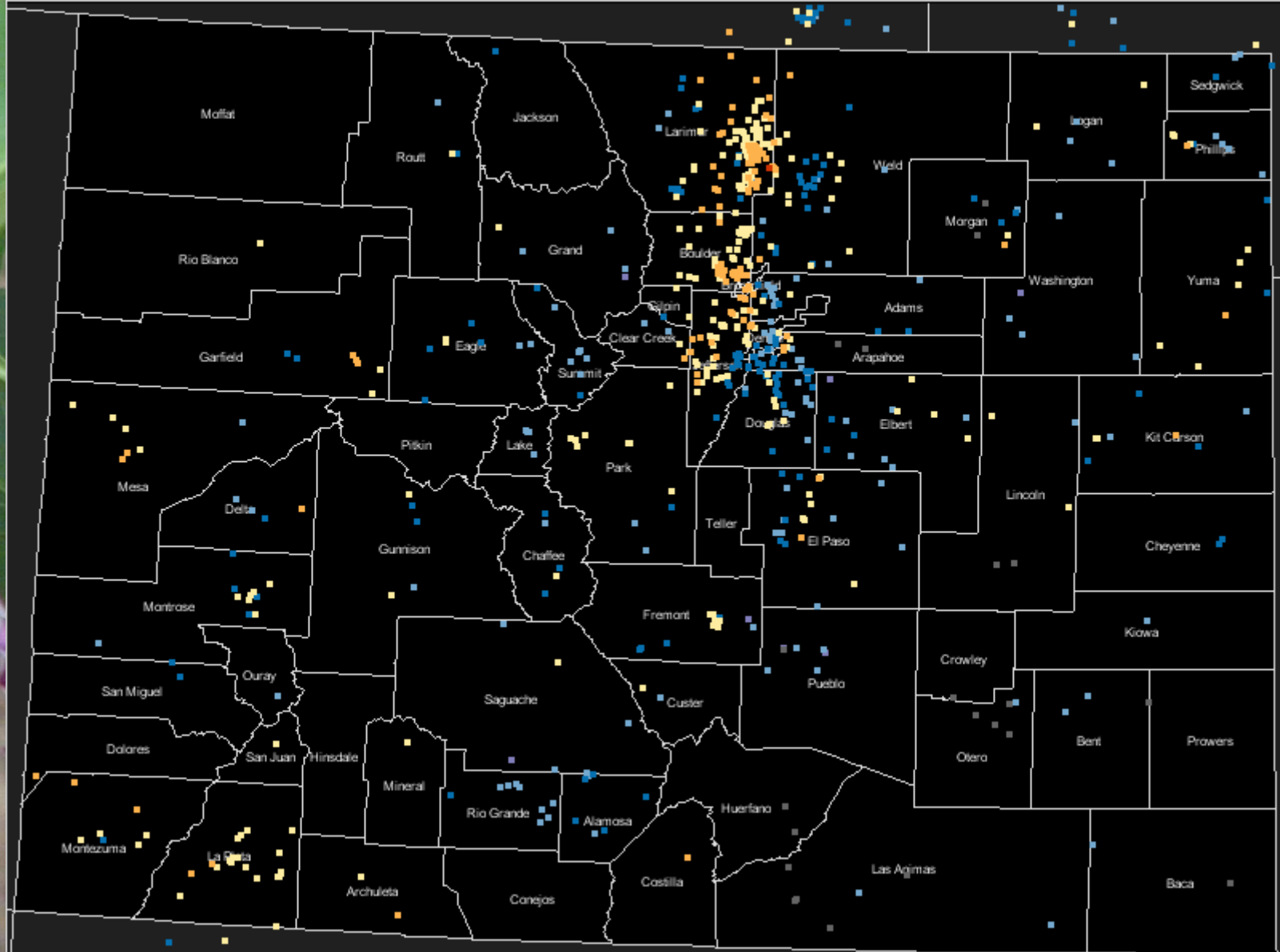


May 24, 2009

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 5/24/2009

0.0 Trace 0.01 - 0.13 0.14 - 0.26 0.27 - 0.64 0.65 - 1.52 1.53 - 2.28 2.29 - 2.52

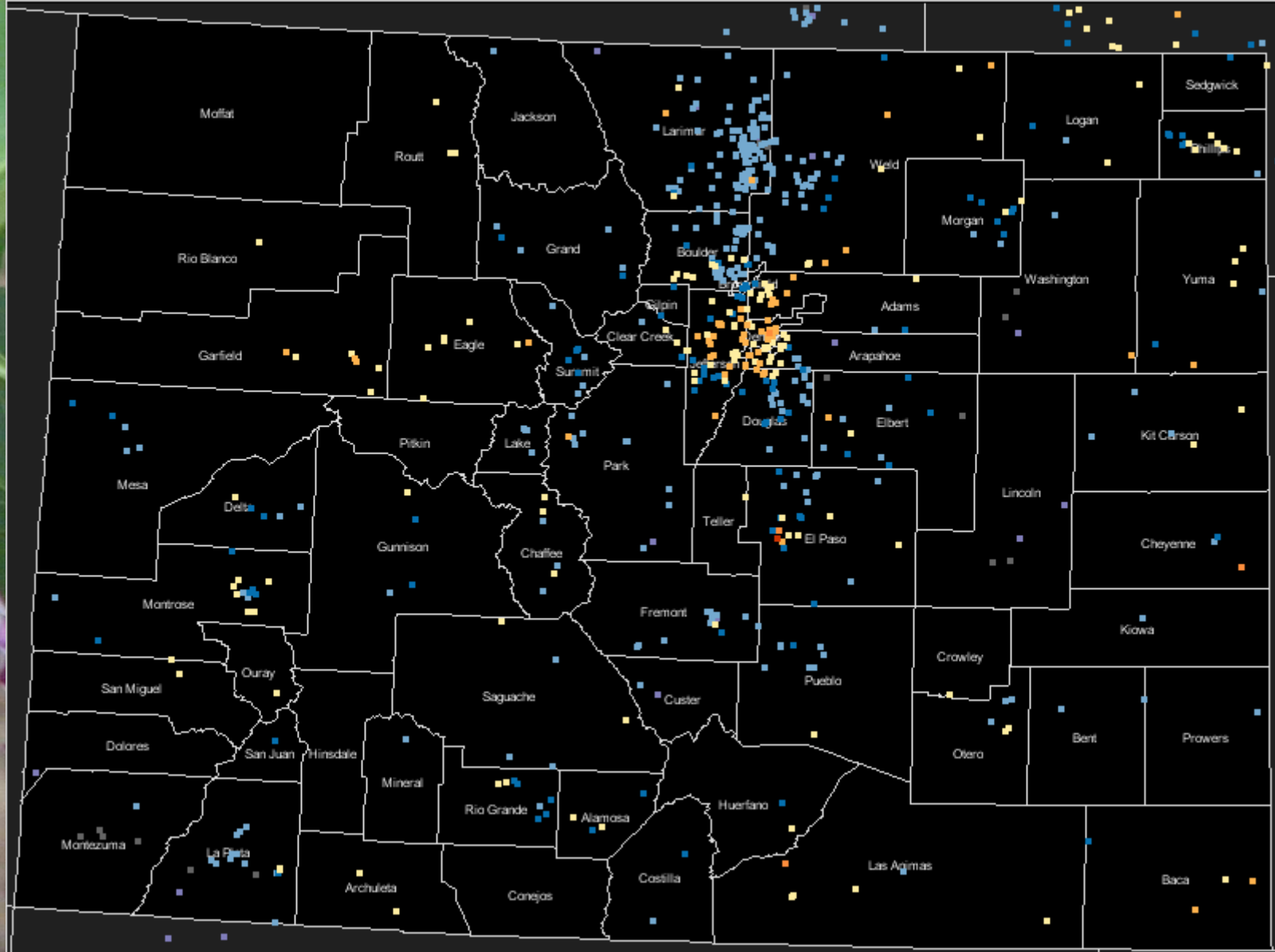


May 25, 2009

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 5/25/2009

0.0 Trace 0.01 - 0.11 0.12 - 0.22 0.23 - 0.56 0.57 - 1.36 1.37 - 2.04 2.05 - 2.28

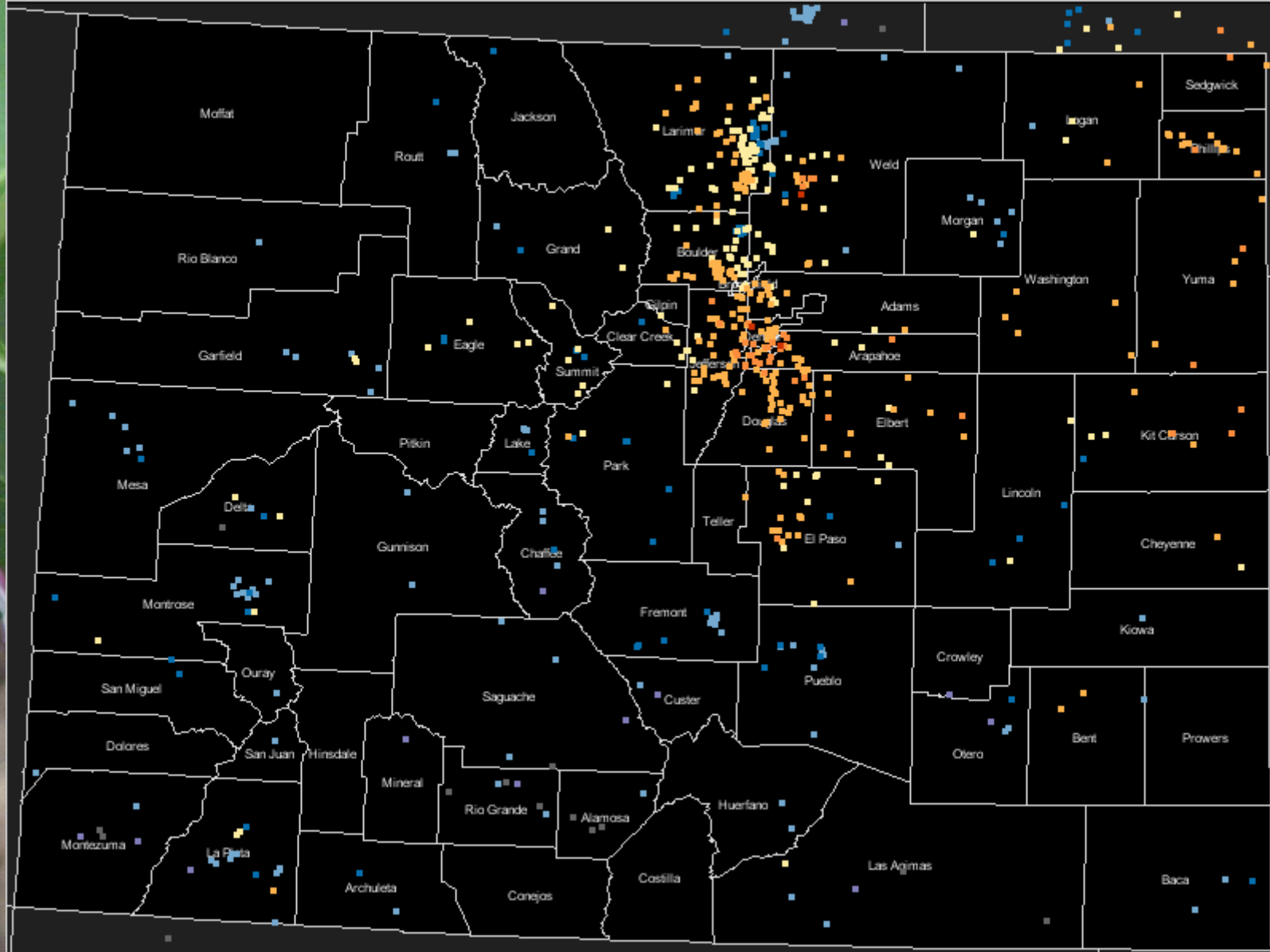


May 26, 2009

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 5/26/2009

0.0 Trace 0.01 - 0.12 0.13 - 0.24 0.25 - 0.59 0.60 - 1.41 1.42 - 2.12 2.13 - 2.35



Colorado Climate Center

Data and Power Point Presentations
available for downloading

<http://ccc.atmos.colostate.edu>

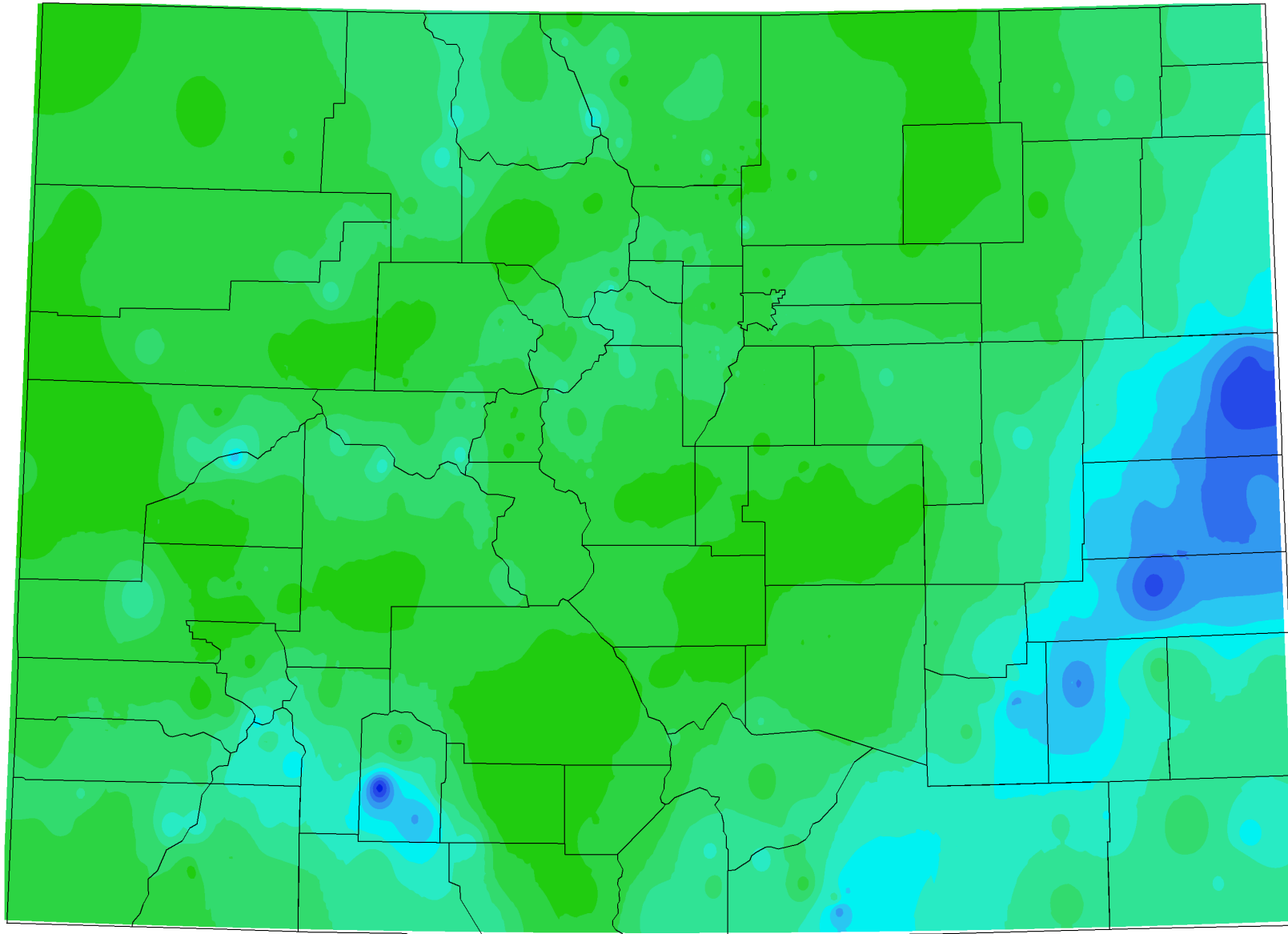
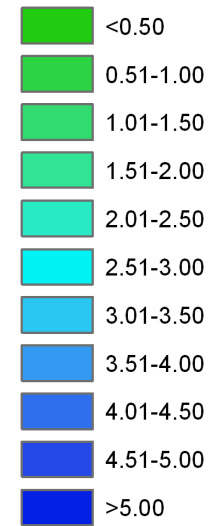
- click on “Drought Resources”
- then click on “Presentations”

**Colorado
State
University**
Knowledge to Go Places

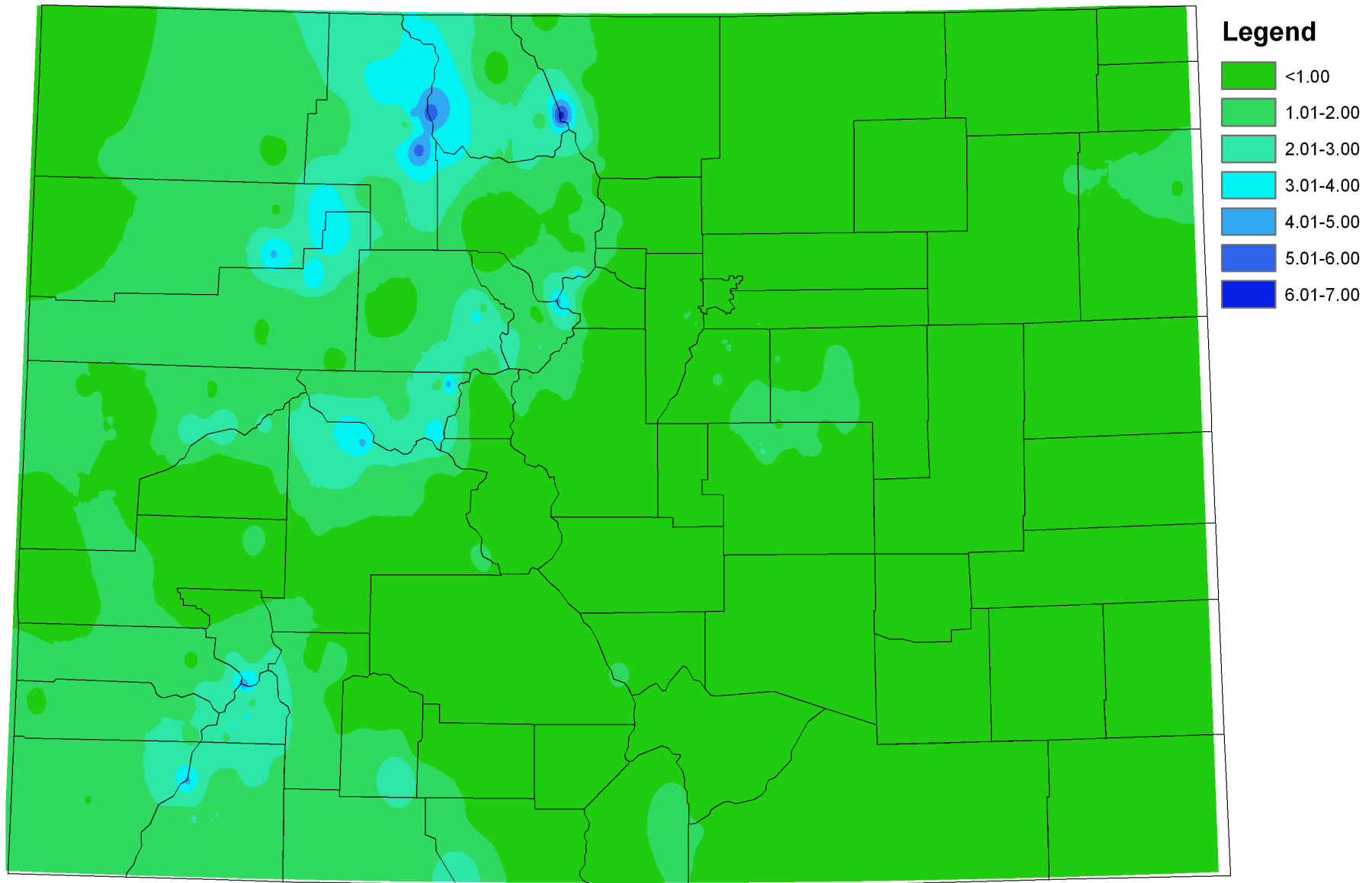


October 2008 Precipitation

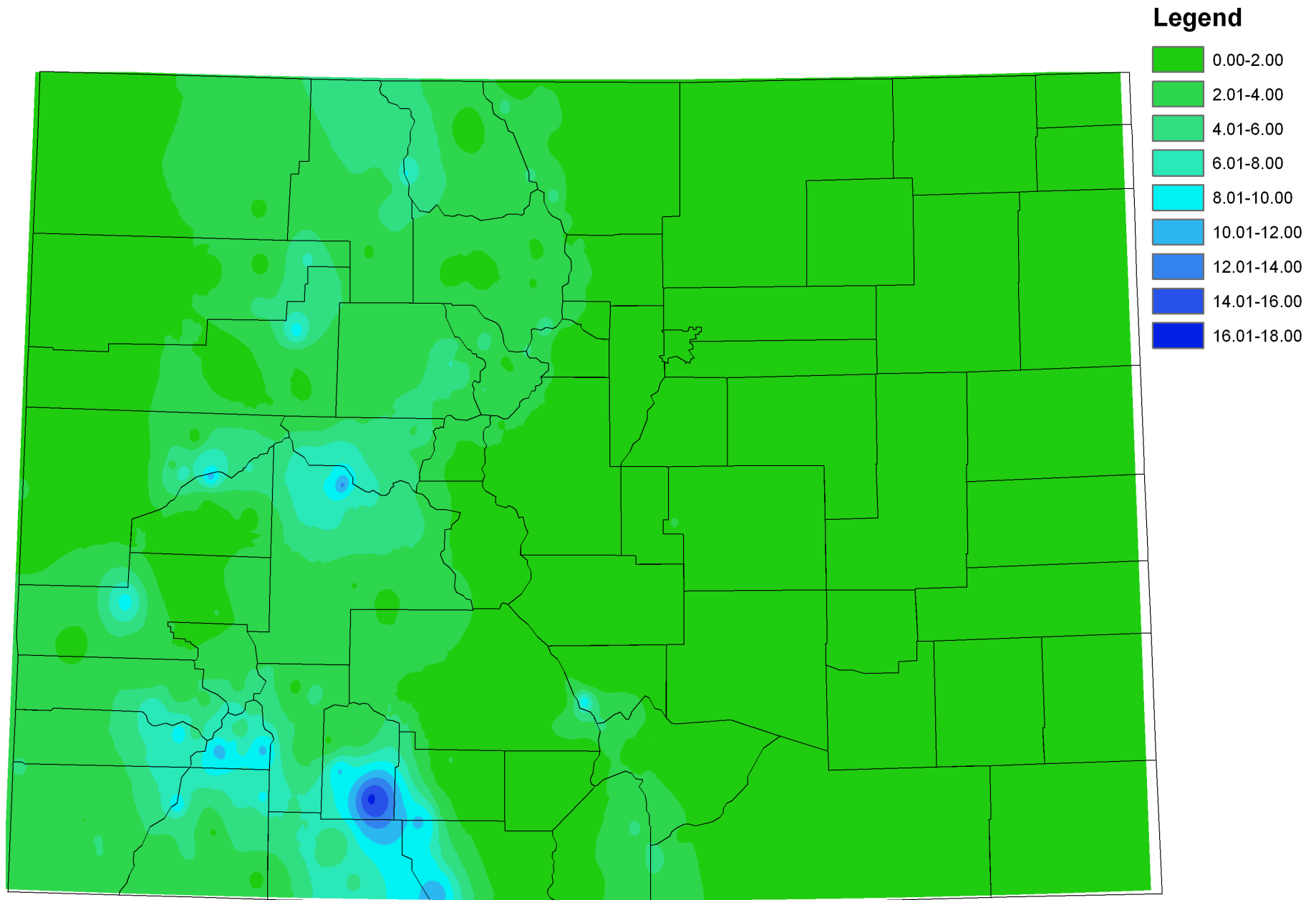
Legend



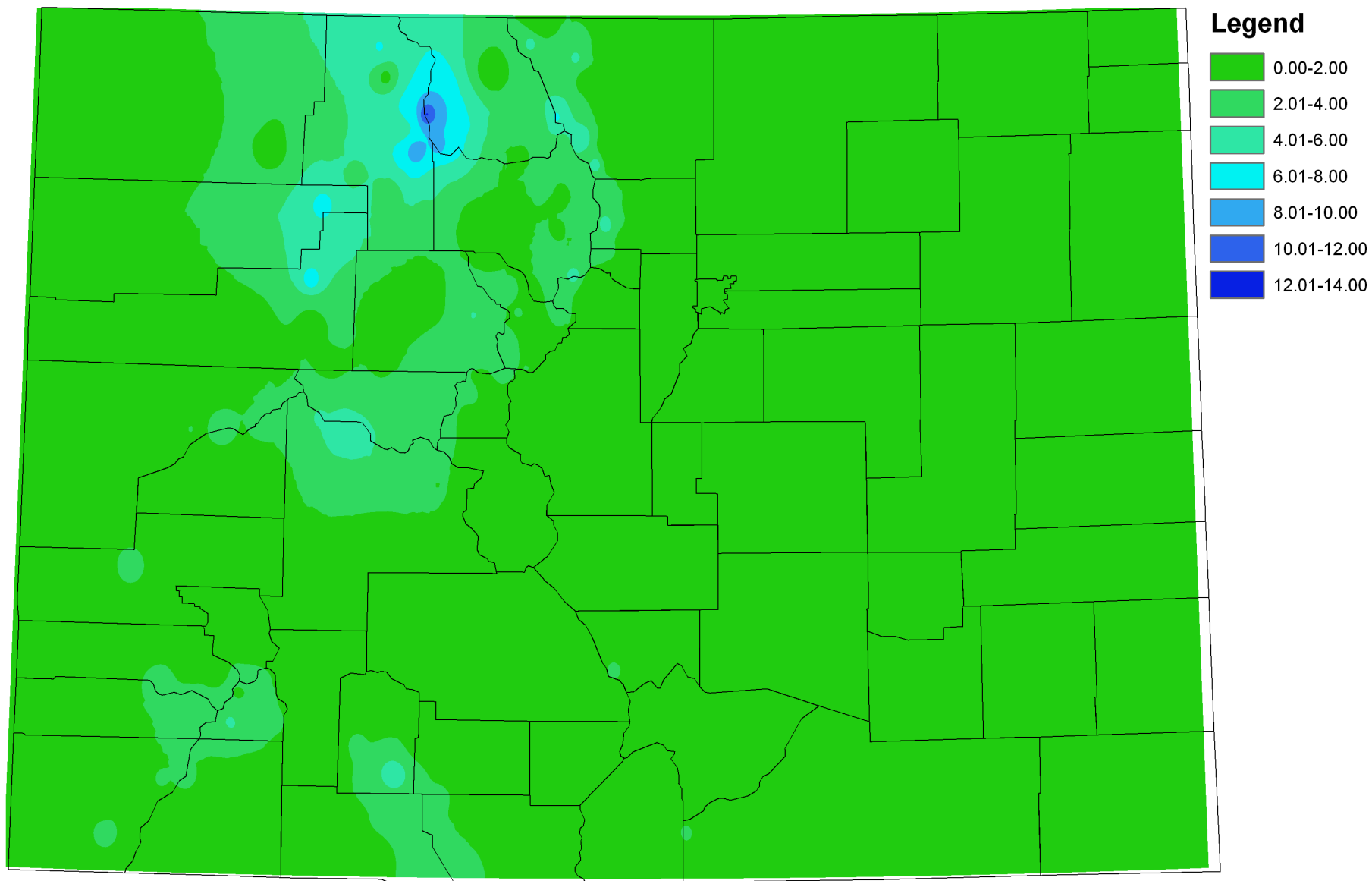
November 2008 Precipitation



December 2008 Precipitation

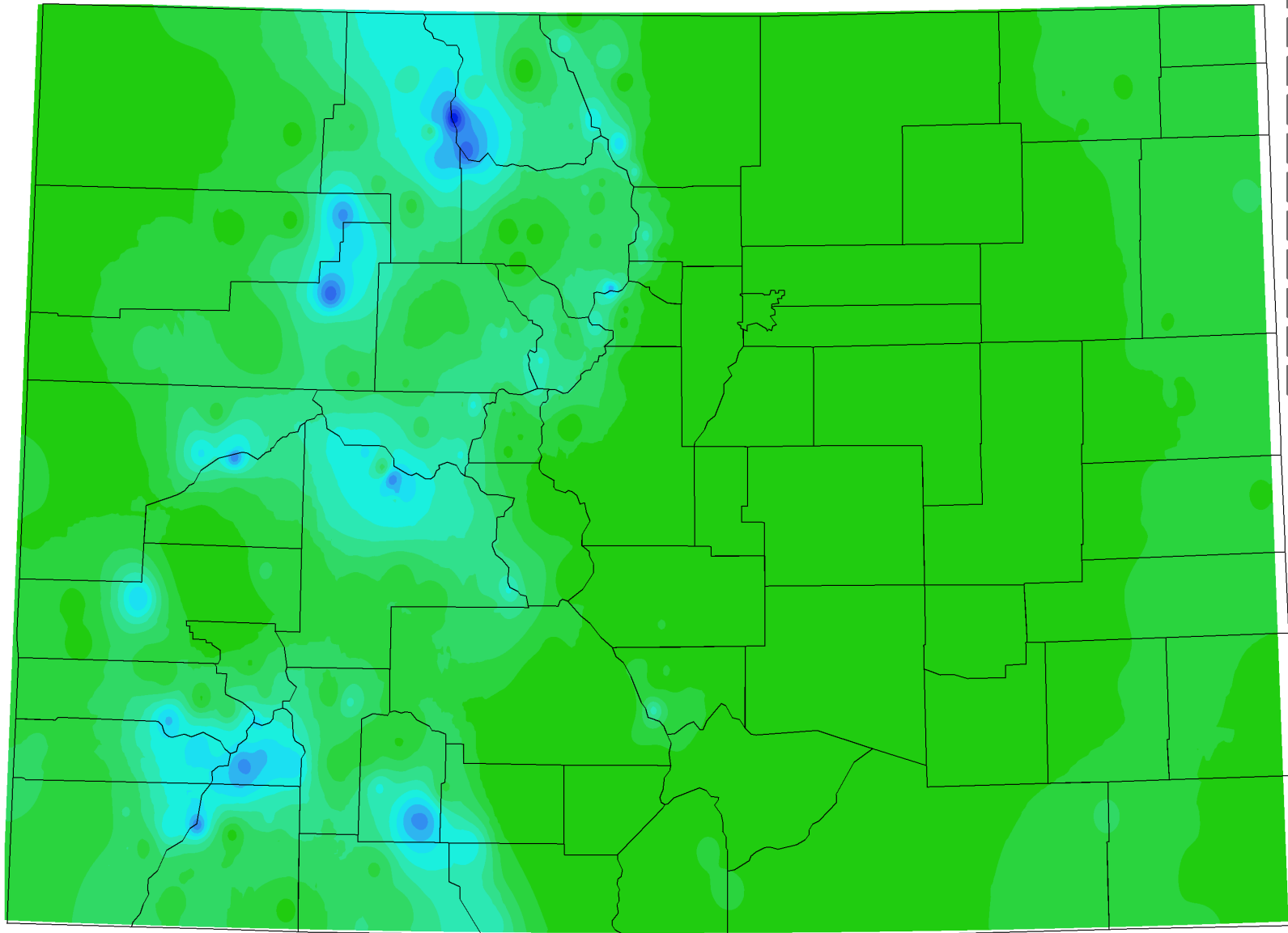
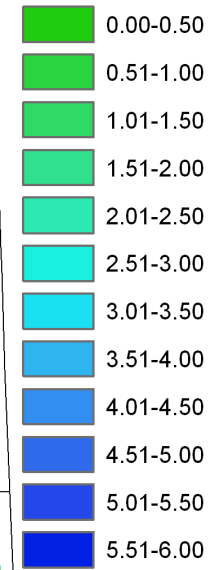


January 2009 Precipitation



February 2009 Precipitation

Legend



March 2009 Precipitation

