

A Review of the 2007 Water Year in Colorado

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Presented at the 28th Annual AGU Hydrology Days, March 26, 2008, Colorado State University, Fort Collins, CO
(Prepared by Odie Bliss)

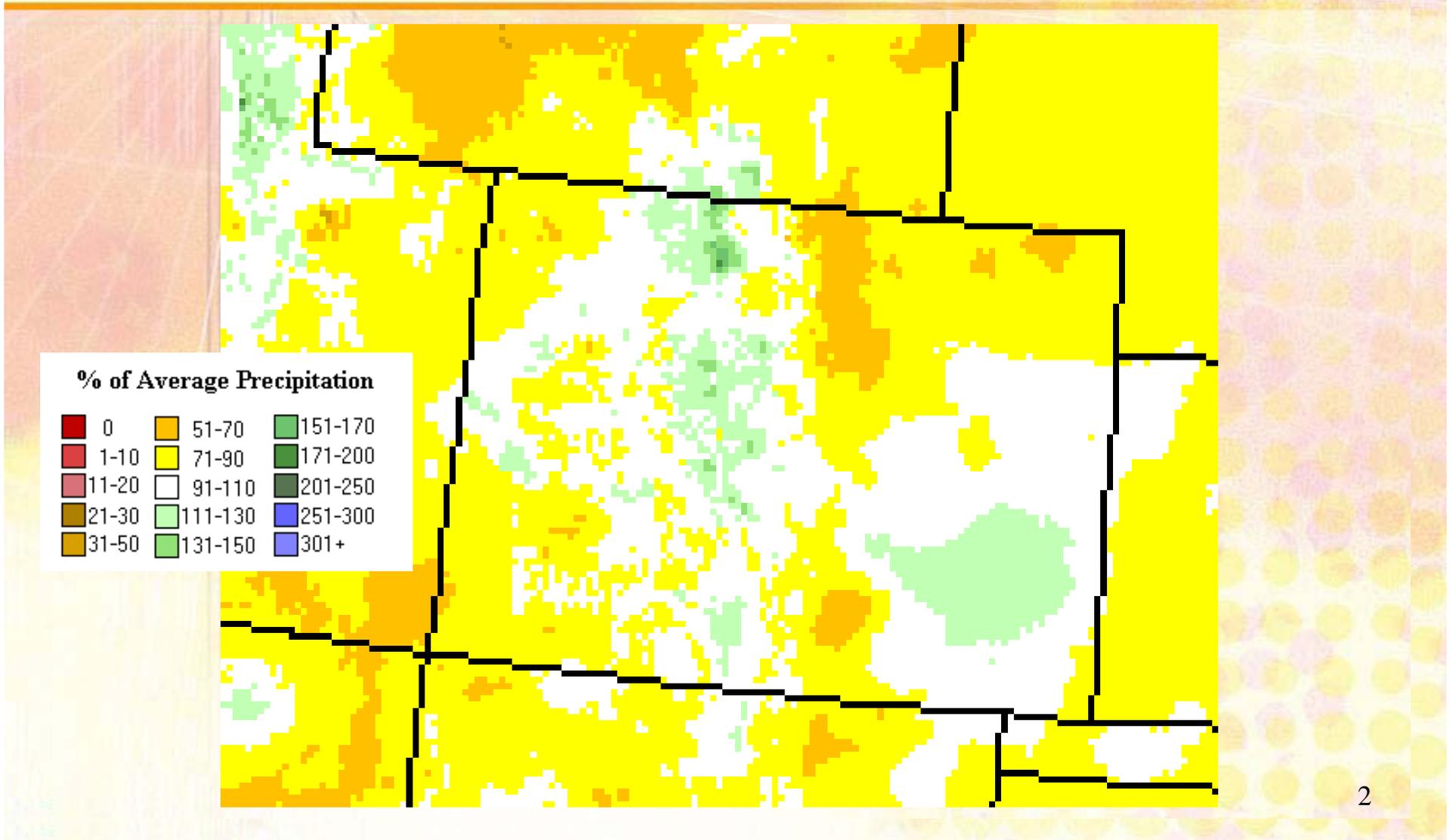


<http://ccc.atmos.colostate.edu>

<http://www.co.nrcs.usda.gov/snow/>

Where did it all start?

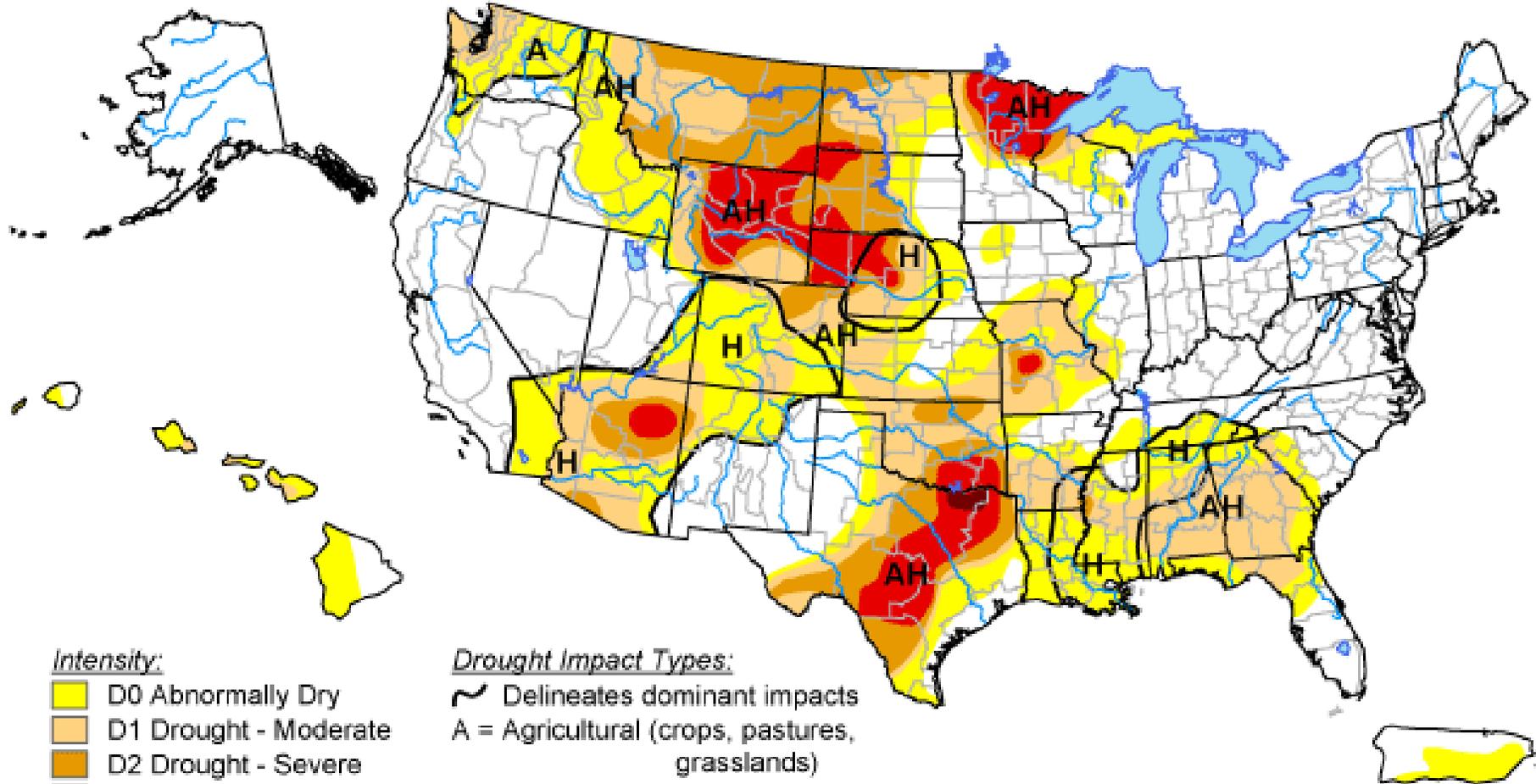
2006 Water Year Precipitation



U.S. Drought Monitor

October 3, 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.



Released Thursday, October 5, 2006

Author: Rich Tinker, Climate Prediction Center, NOAA

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

Highlights of the 2007 Water Year in Colorado

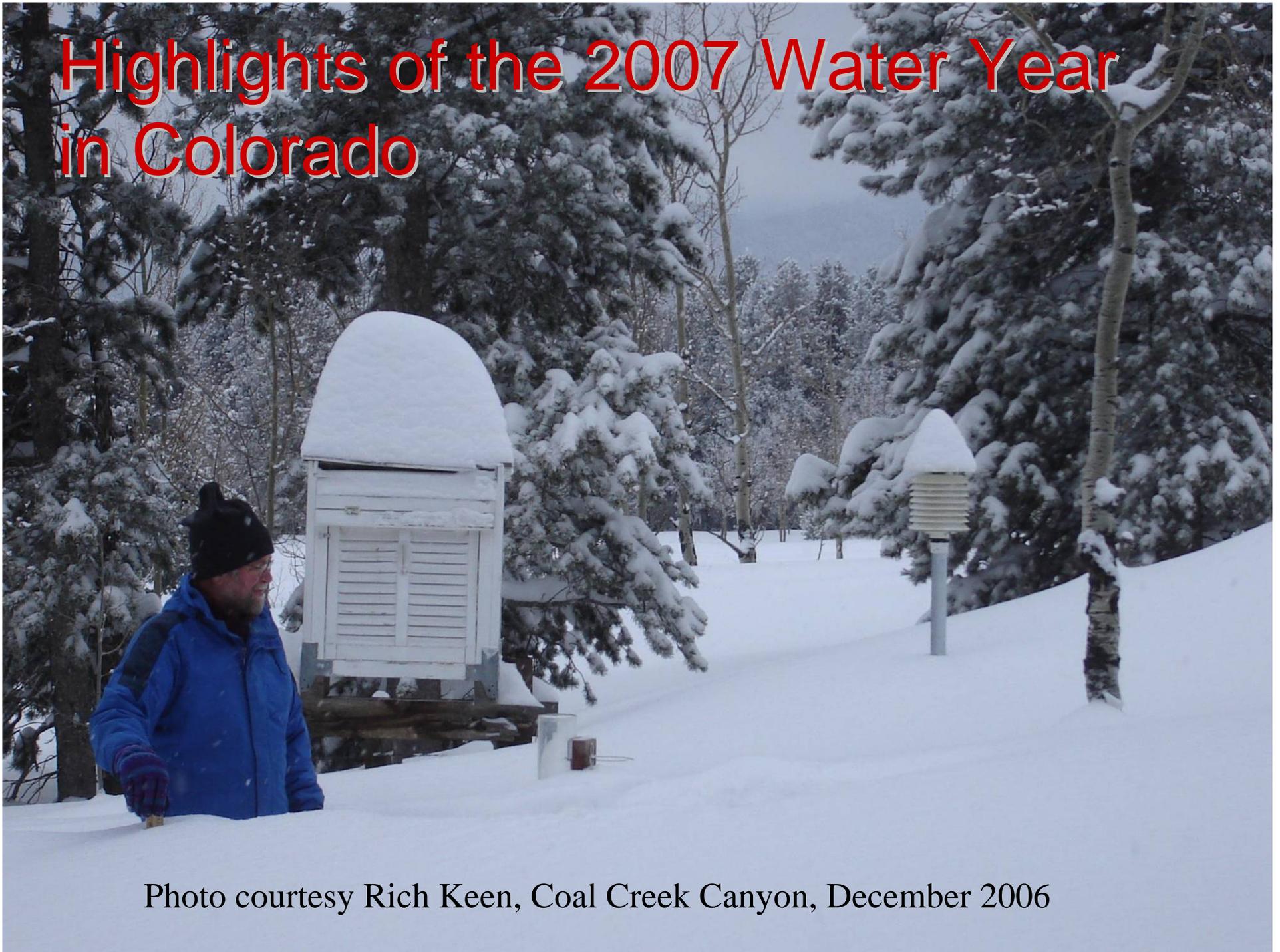


Photo courtesy Rich Keen, Coal Creek Canyon, December 2006

WY 2007 Summary

- Wet October 2006
- December 2006 Snowstorms
- Persisting snowcover and cold (Eastern Plains)
- Holly tornado March 28, 2007
- Early snowmelt and dry May 2007
- Hot summer with spotty storms
- September rains especially West Slope

Colorado Snowcover

As of January 7, 2007

Wyoming

Colorado

Nebraska

— Denver

Kansas

Arkansas River

http://rapidfire.sci.gsfc.nasa.gov/subsets/?AERONET_BSRN_BAO_Boulder

50 km

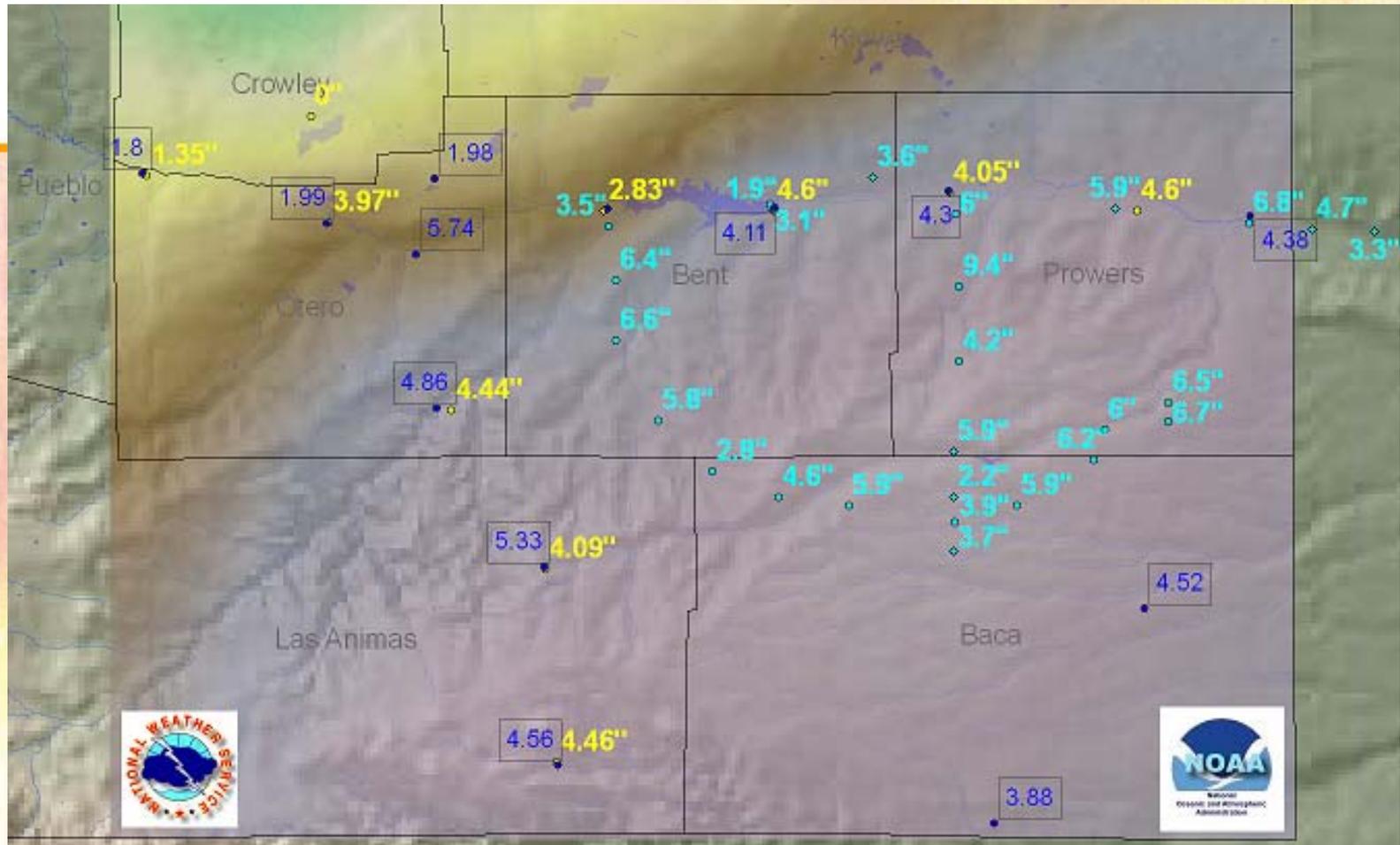


Colorado Snowcover

As of February 15, 2007

http://rapidfire.sci.gsfc.nasa.gov/subsets/?AERONET_BSRN_BAO_Boulder

Water in the Snowpack during early February and the Total Precipitation for the months of December and January



Yellow - water equivalent measured by coring/melting as reported by Cooperative Observers
 Light Blue - water equivalent measured by coring/weighing as reported by NWS employees
 Boxed - total precipitation for December and January as reported by Cooperative Observers



A Very Bad Day – Holly Tornado

March 28, 2007

Horace Tribune

Enhanced Fujita Scale (MPH) Greeley County

EF0 = 65-85

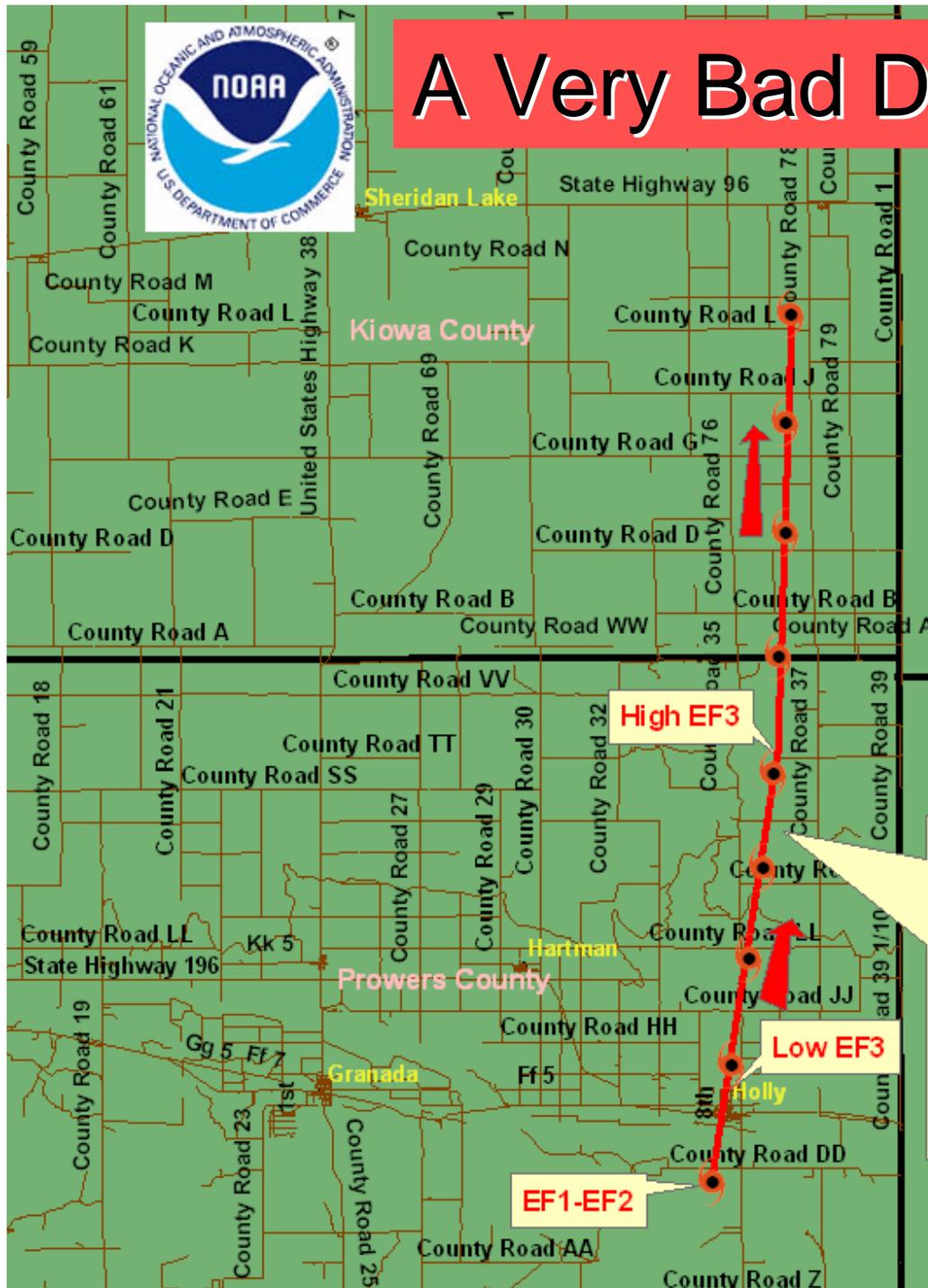
EF1 = 86-110

EF2 = 111-135

EF3 = 136-165

EF4 = 166-200

EF5 = >200



High EF3

Low EF3

EF1-EF2

The Holly Tornado was on the ground for an estimated 25-30 minutes covering an estimated distance of 28 miles. In Holly, the tornado reached a peak Enhanced Fujita Scale rating on the low end of the EF3 range. Over the lifetime of the storm, the tornado reached a peak intensity on the high end of the EF3 range about 12 miles north of Holly.

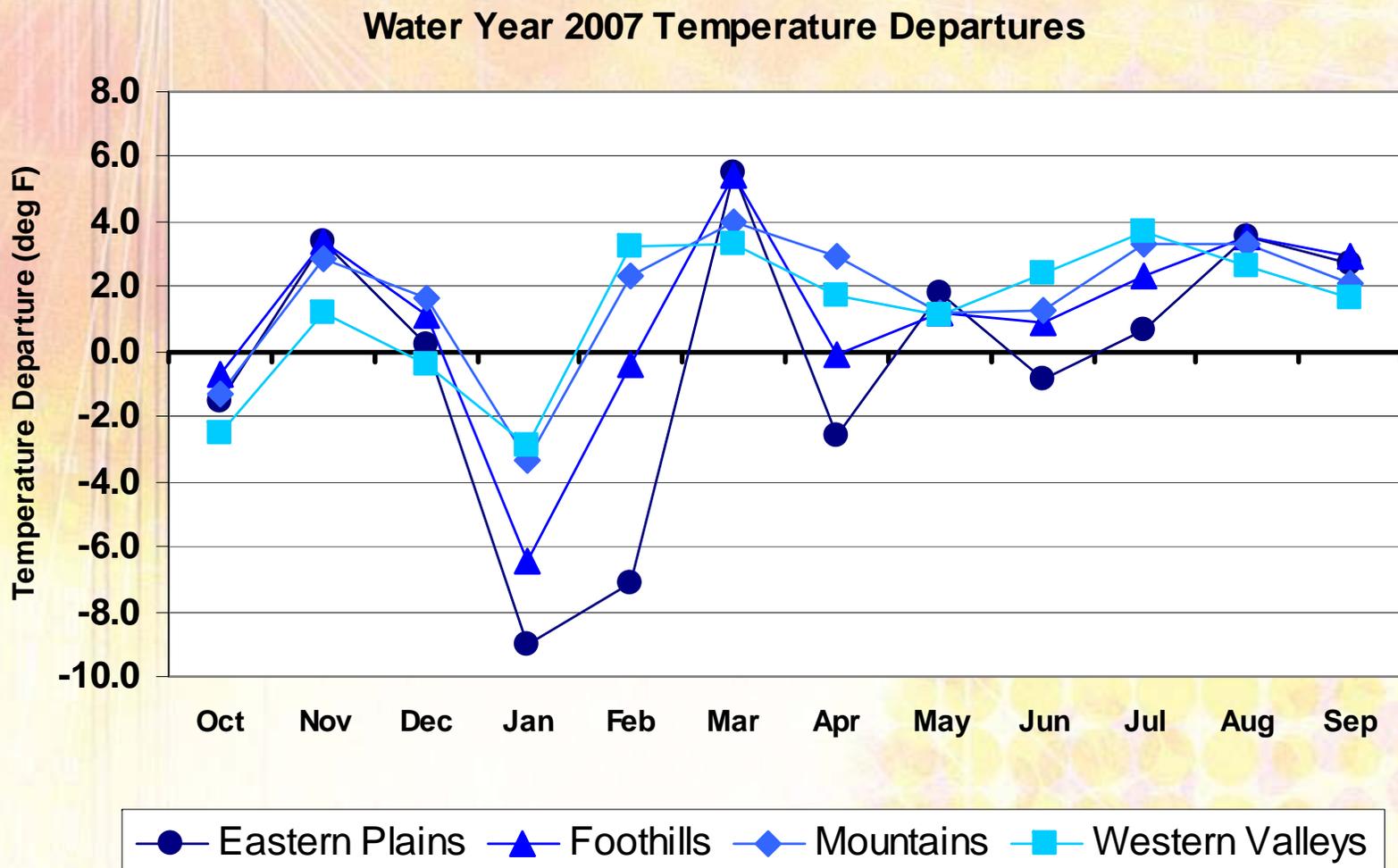
0 5 10 15 20 Miles

WY2007 Temperature Summary

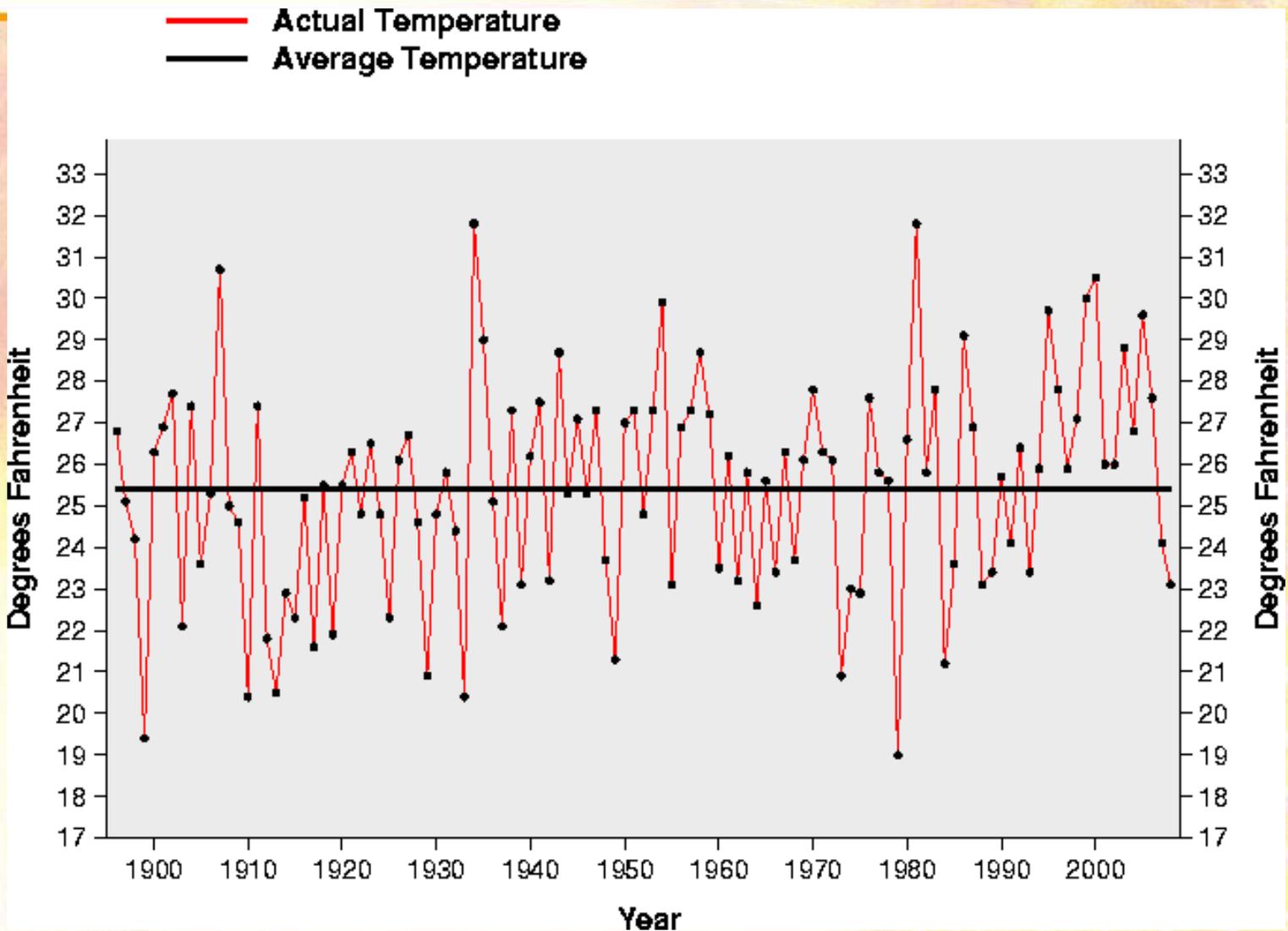


- Cold October 2006 across the state
- November/December above or near average
- January and February cold, especially Eastern Plains (near -10 deg F departure)
- March above average statewide
- April 2007 cold Eastern Plains, average Foothills, warmer Mountains and Western Valleys
- Near average all across the state for May
- Above average temperatures for June through September for most of the state

Water Year 2007 temperature departures from 1971-2000 average



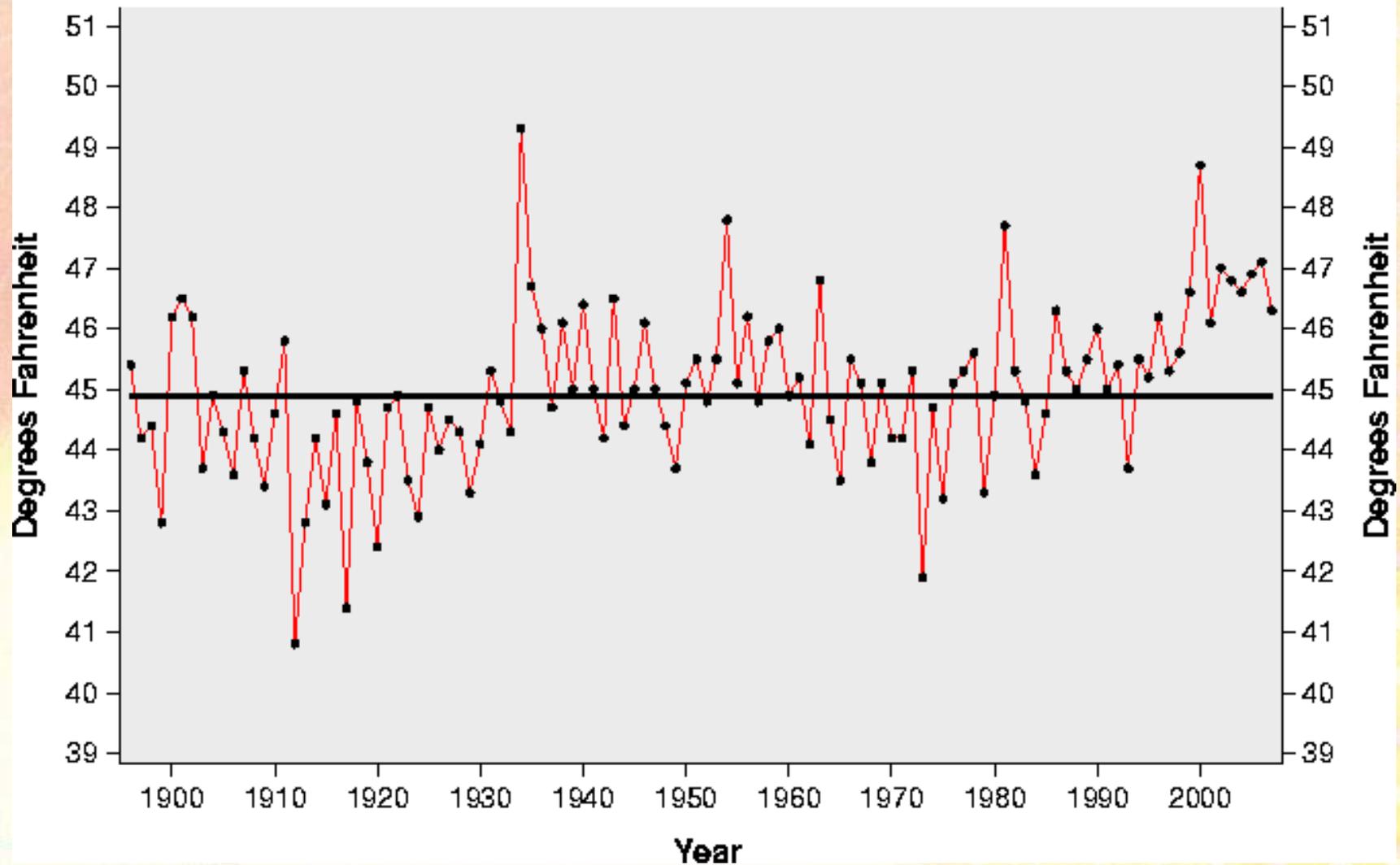
Water Year Winter (Dec – Feb) Statewide Temperature History



2007 Water Year Temperatures for Colorado

— Actual Temperature
— Average Temperature

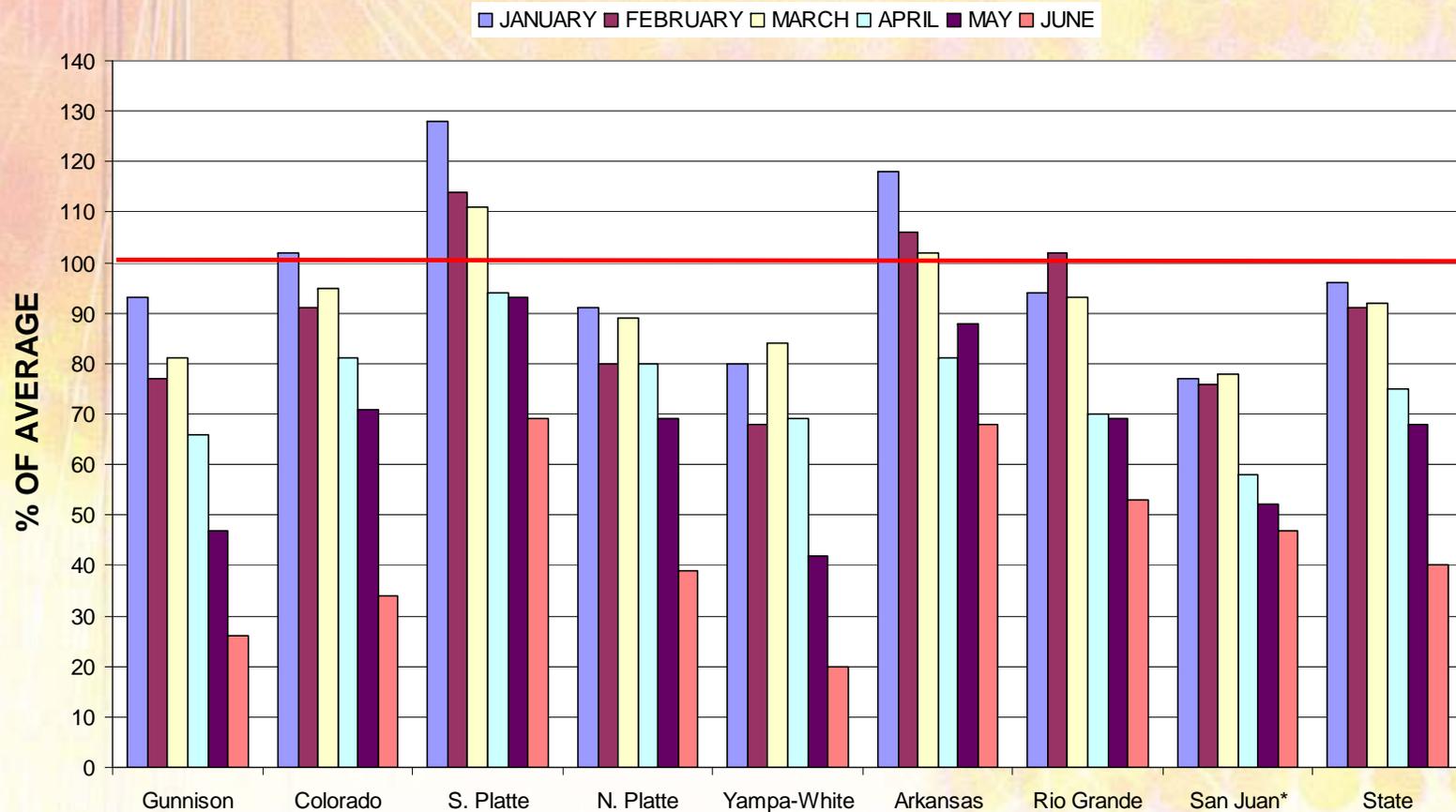
Most recent 12-month period (Oct 2006 – Sep 2007)
(Period of record 1895 – 2007)



Colorado Snowpack for 2007 – Good Start, Early Finish

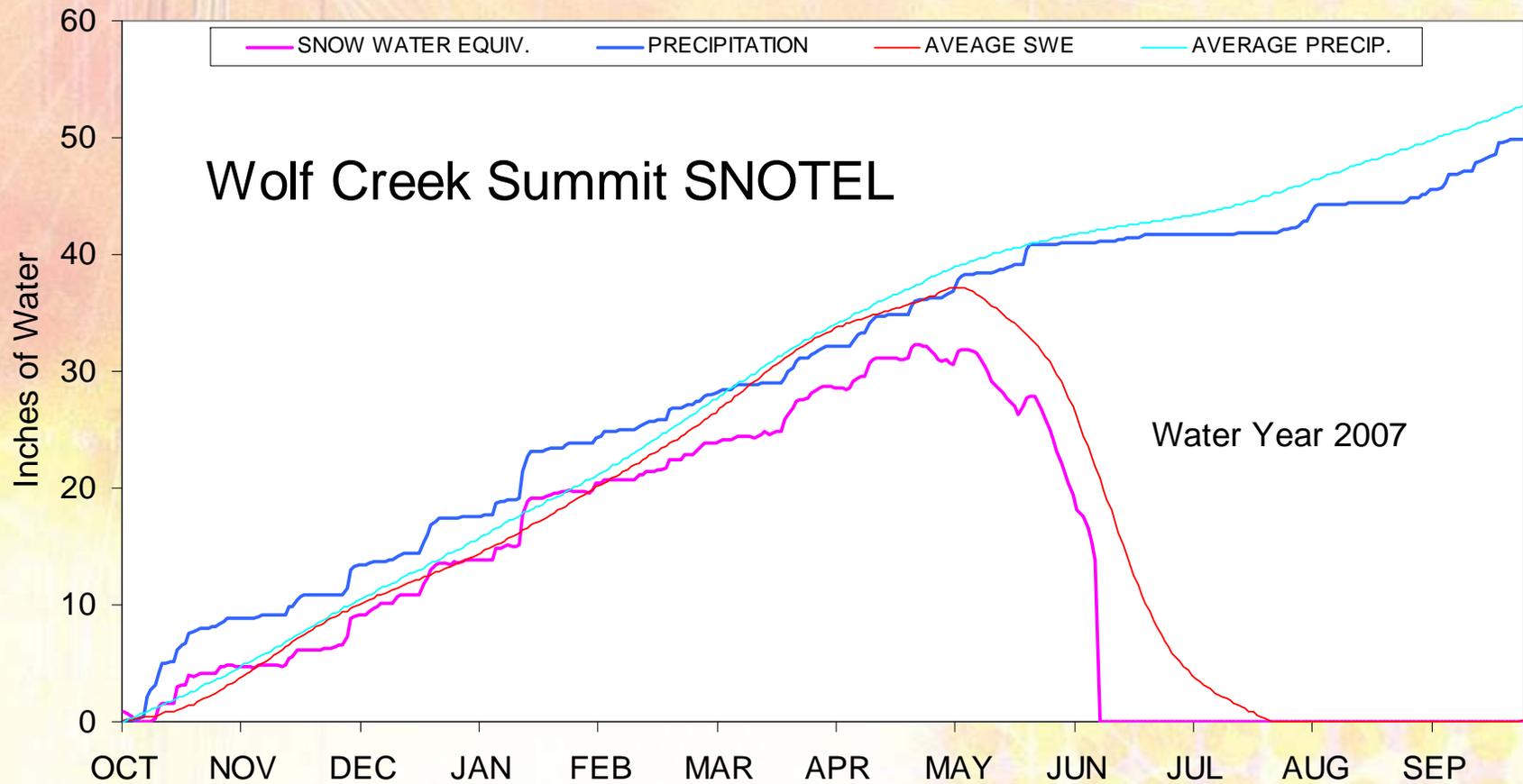
COLORADO SNOWPACK Summary for 2007

USDA Natural Resources Conservation Service

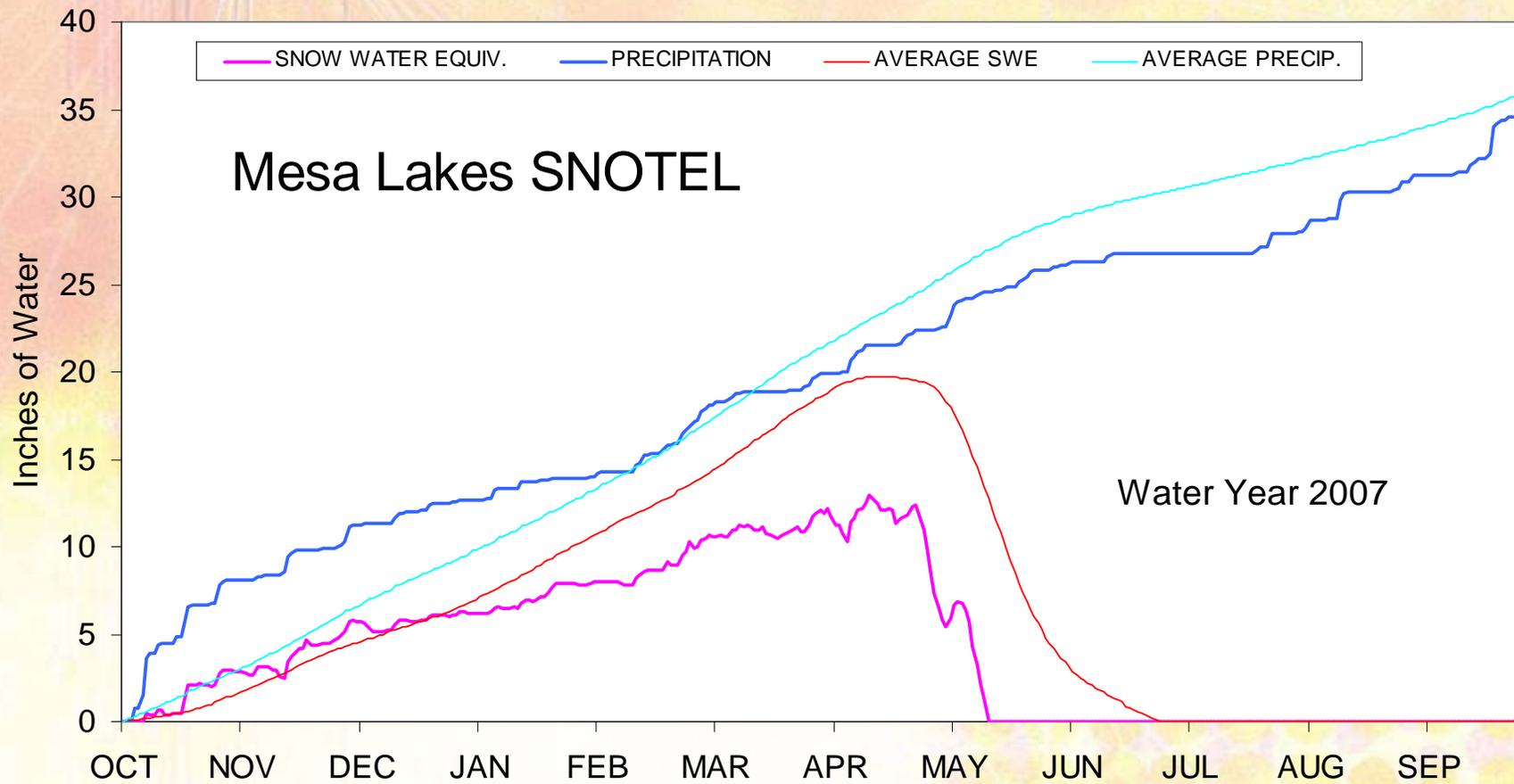


*Includes Animas, Dolores, San Miguel Basins

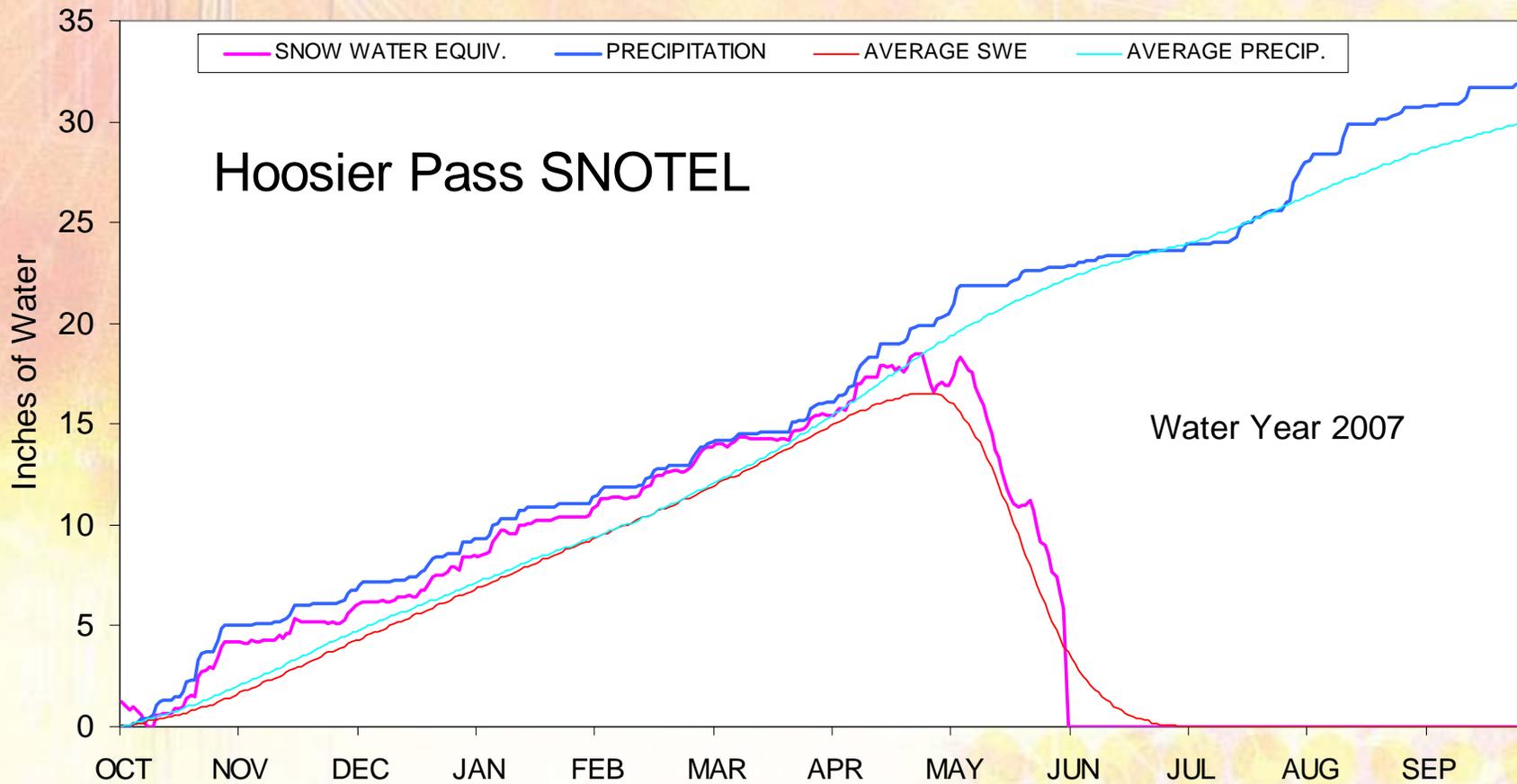
Wolf Creek Summit Snotel



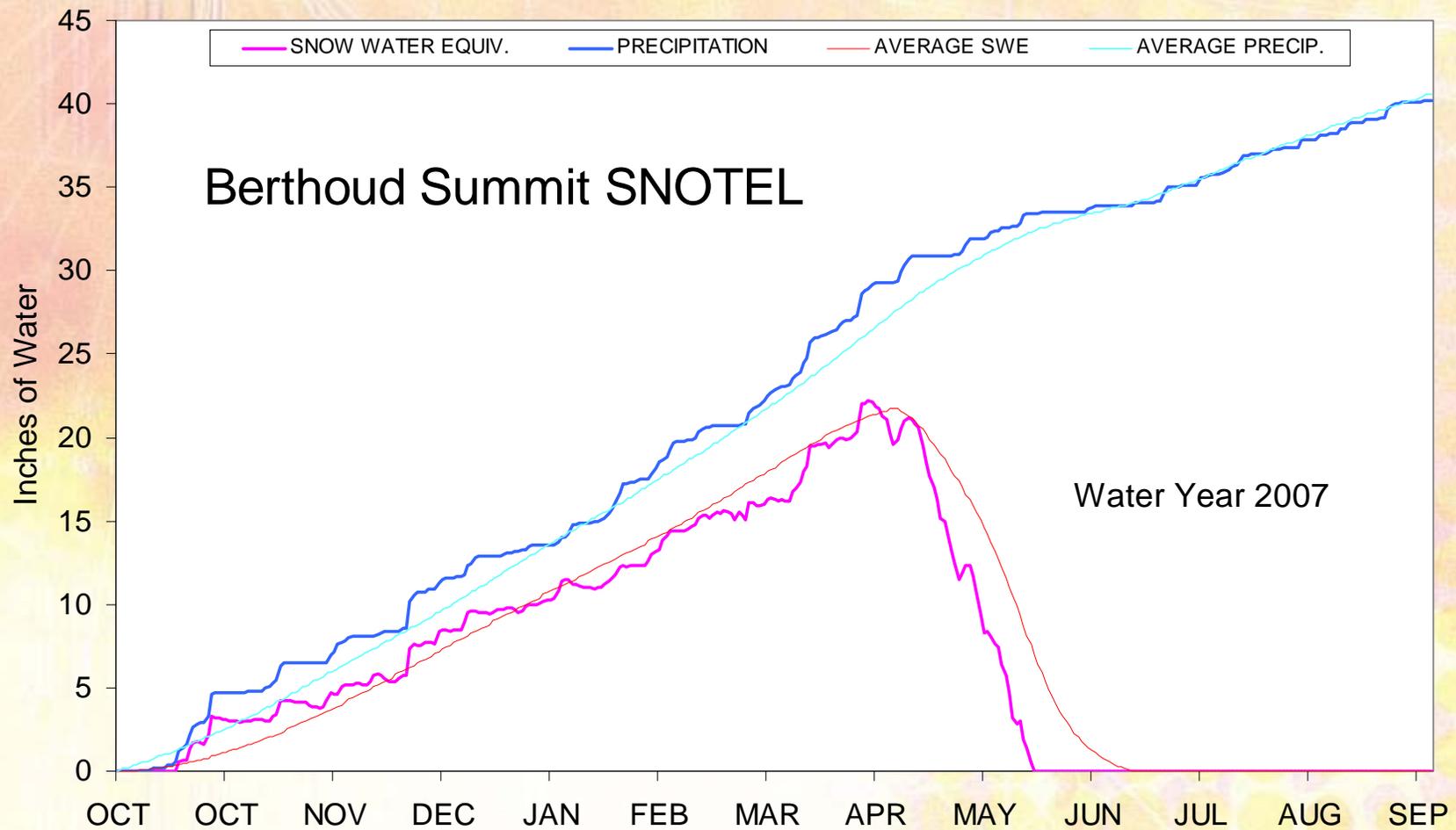
Mesa Lakes Snotel



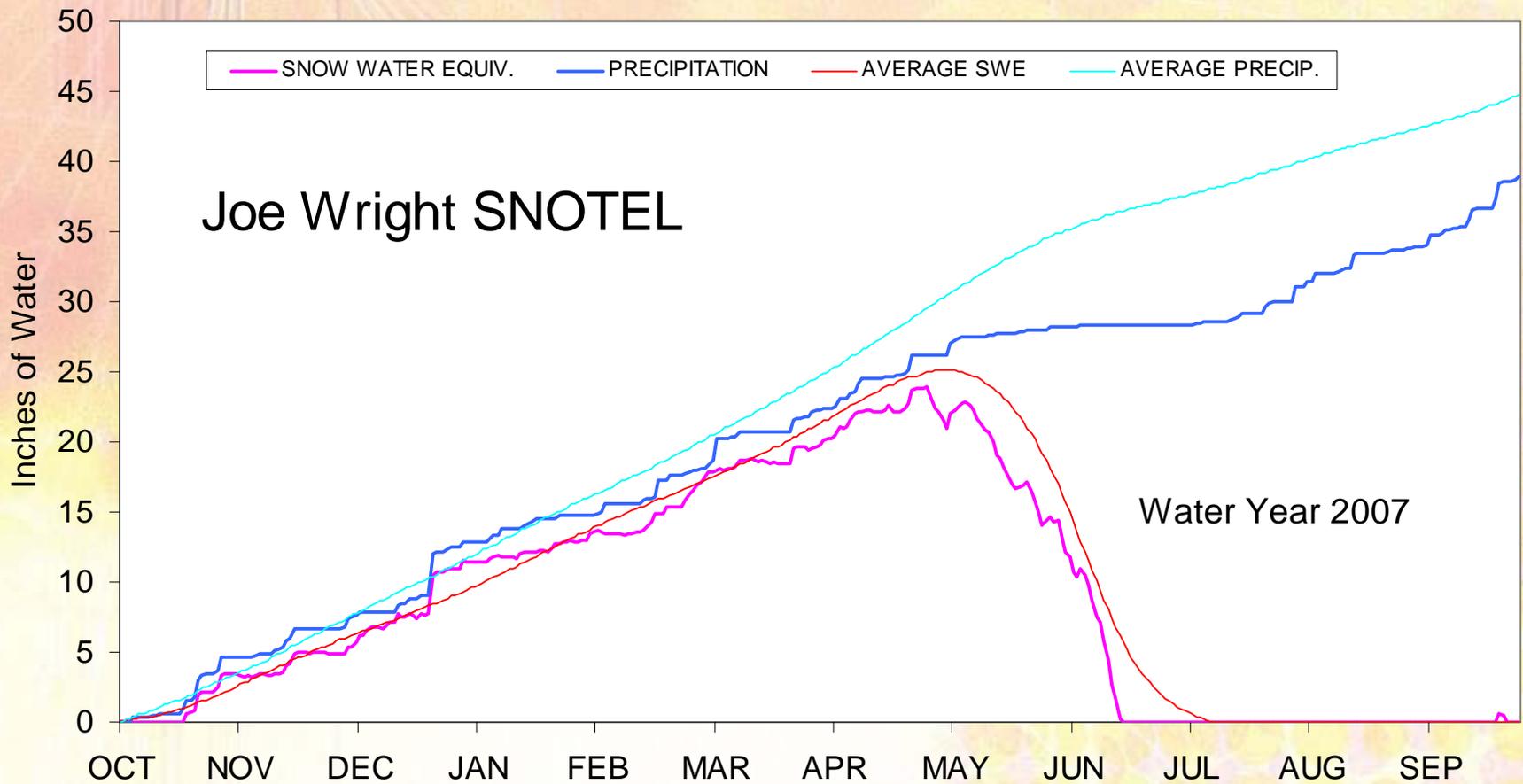
Hoosier Pass Snotel



Berthoud Summit Snotel



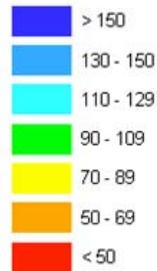
Joe Wright Snotel



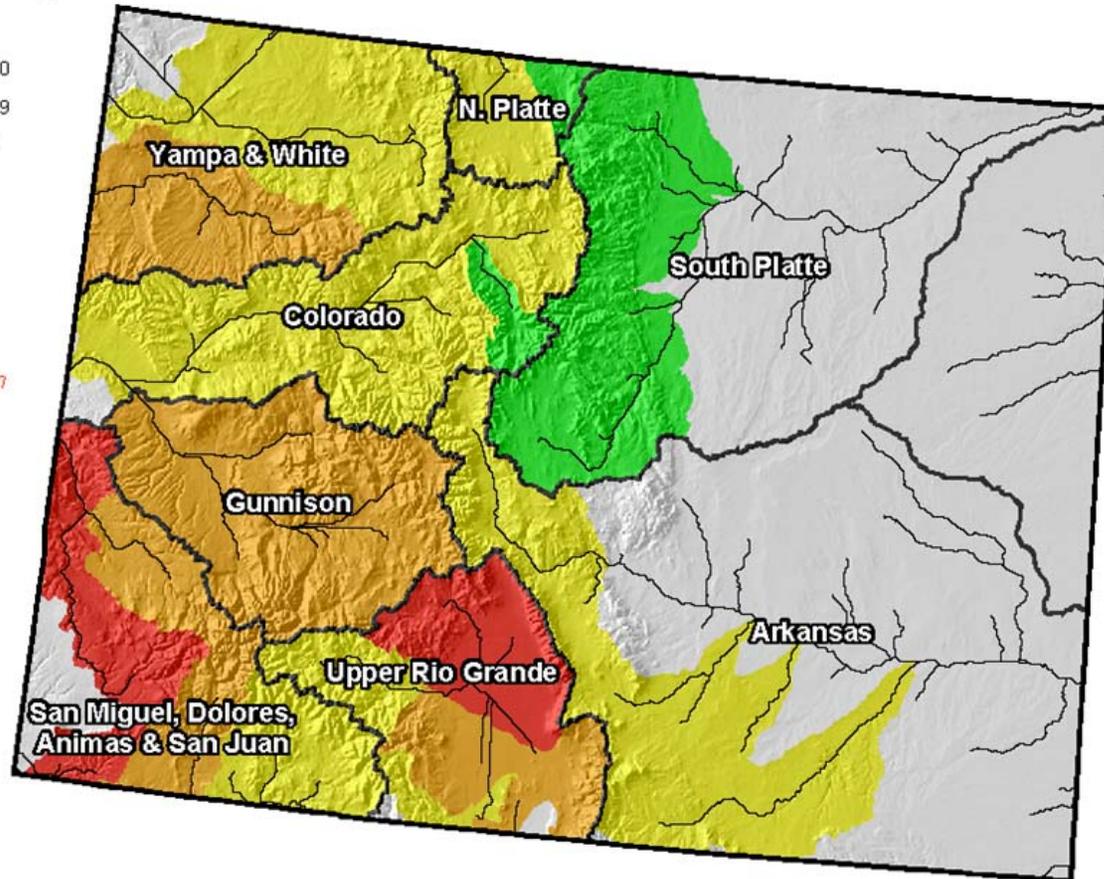
April 1 Snowpack

Colorado Snowpack Map

Percent of Average



*Provisional Data
Subject to Revision*

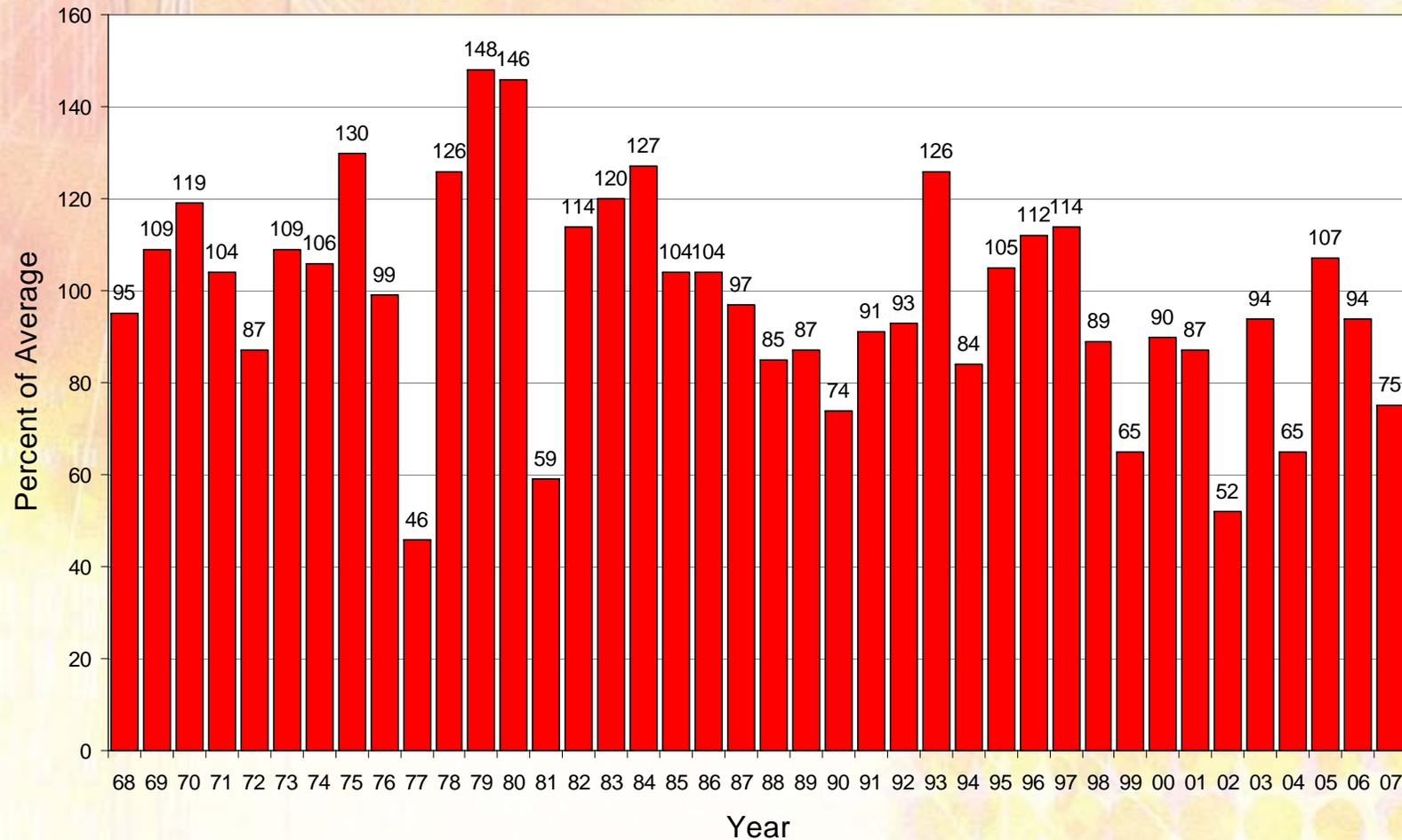


Current as of April 1, 2007

http://www.co.nrcs.usda.gov/snow/snow/state/current/monthly/maps_graphs/getsnomap.html

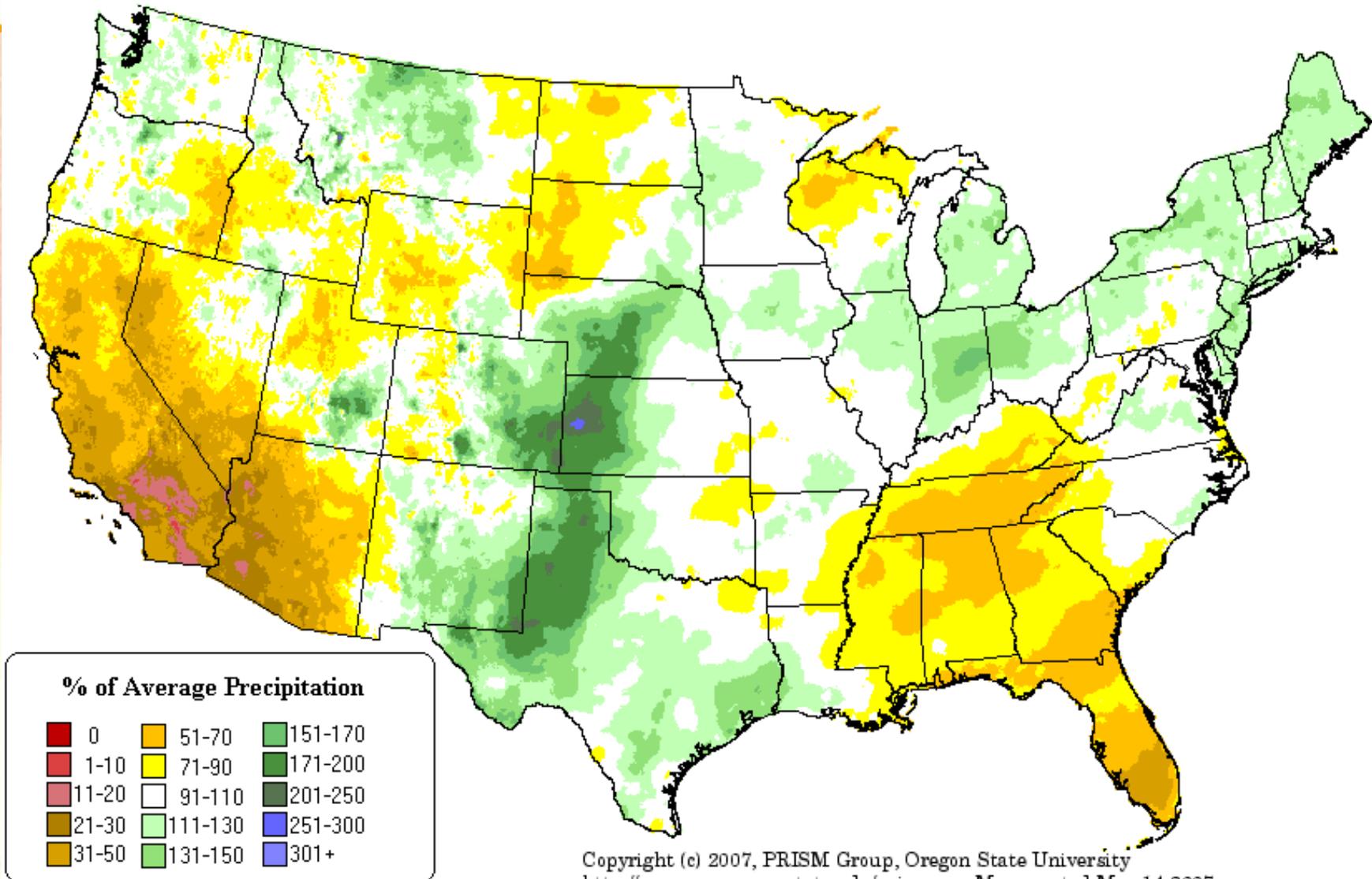
April 1 Snowpack History

APRIL 1 SNOWPACK
COLORADO STATEWIDE



Winter (Oct 2006 – Apr 2007) % of Average

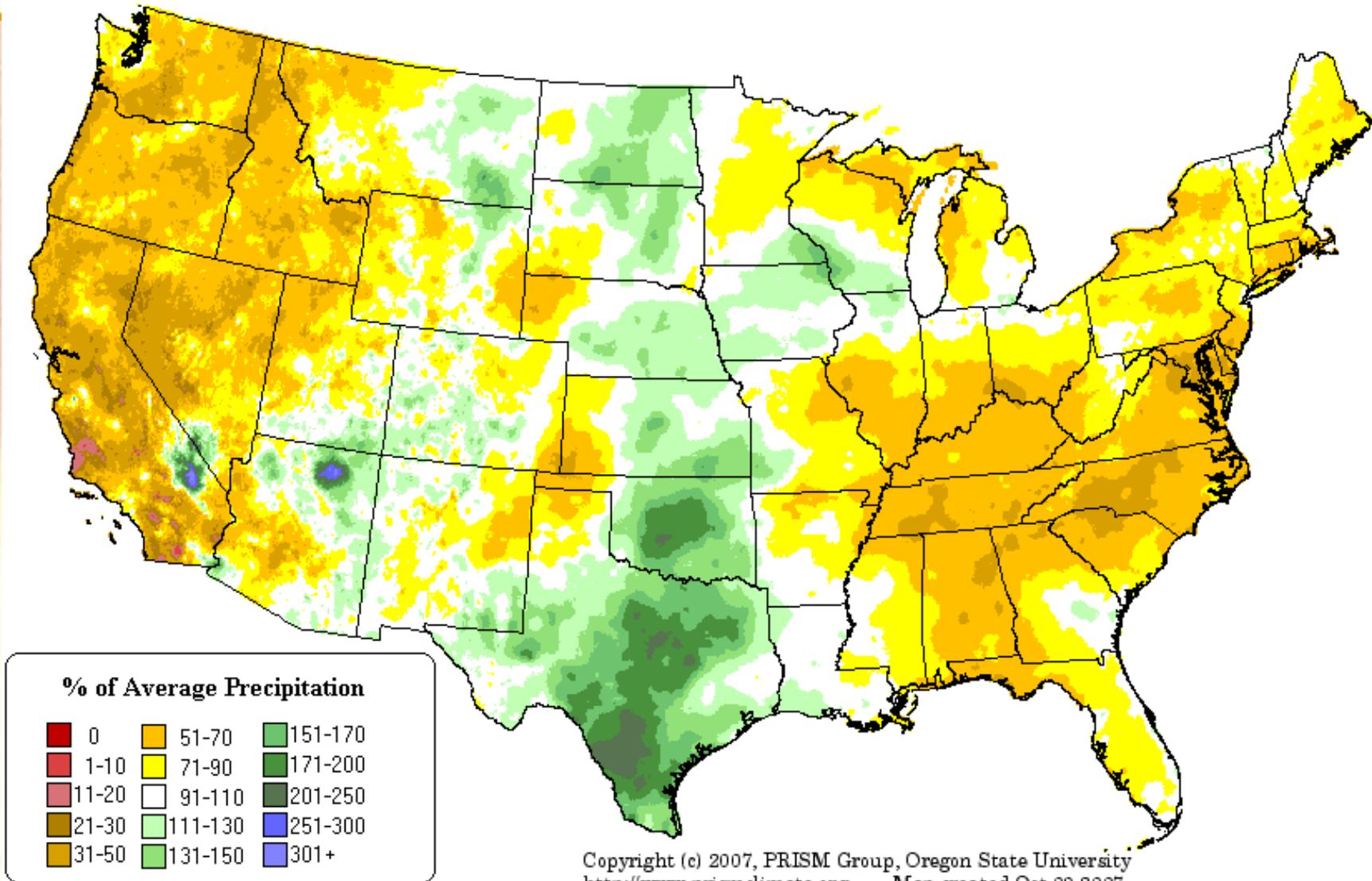
7-month Percent of Average Precipitation: Apr 2007
Provisional Data



Copyright (c) 2007, PRISM Group, Oregon State University
<http://www.ocs.oregonstate.edu/prism> - Map created May 14 2007

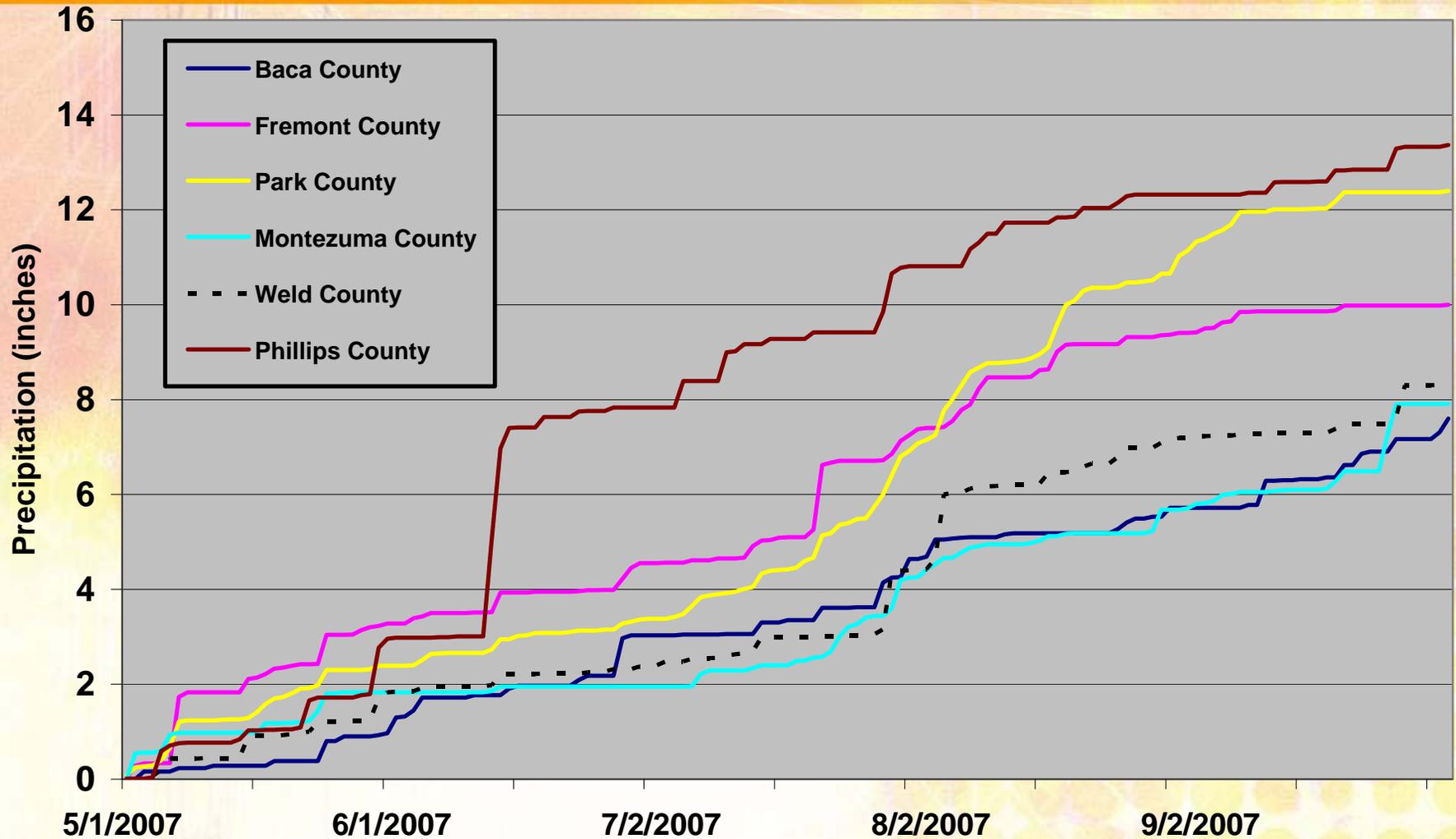
Summer 2007 (May–Sep) precipitation as a percent of average (Prism)

5-month Percent of Average Precipitation: Sep 2007 Provisional Data



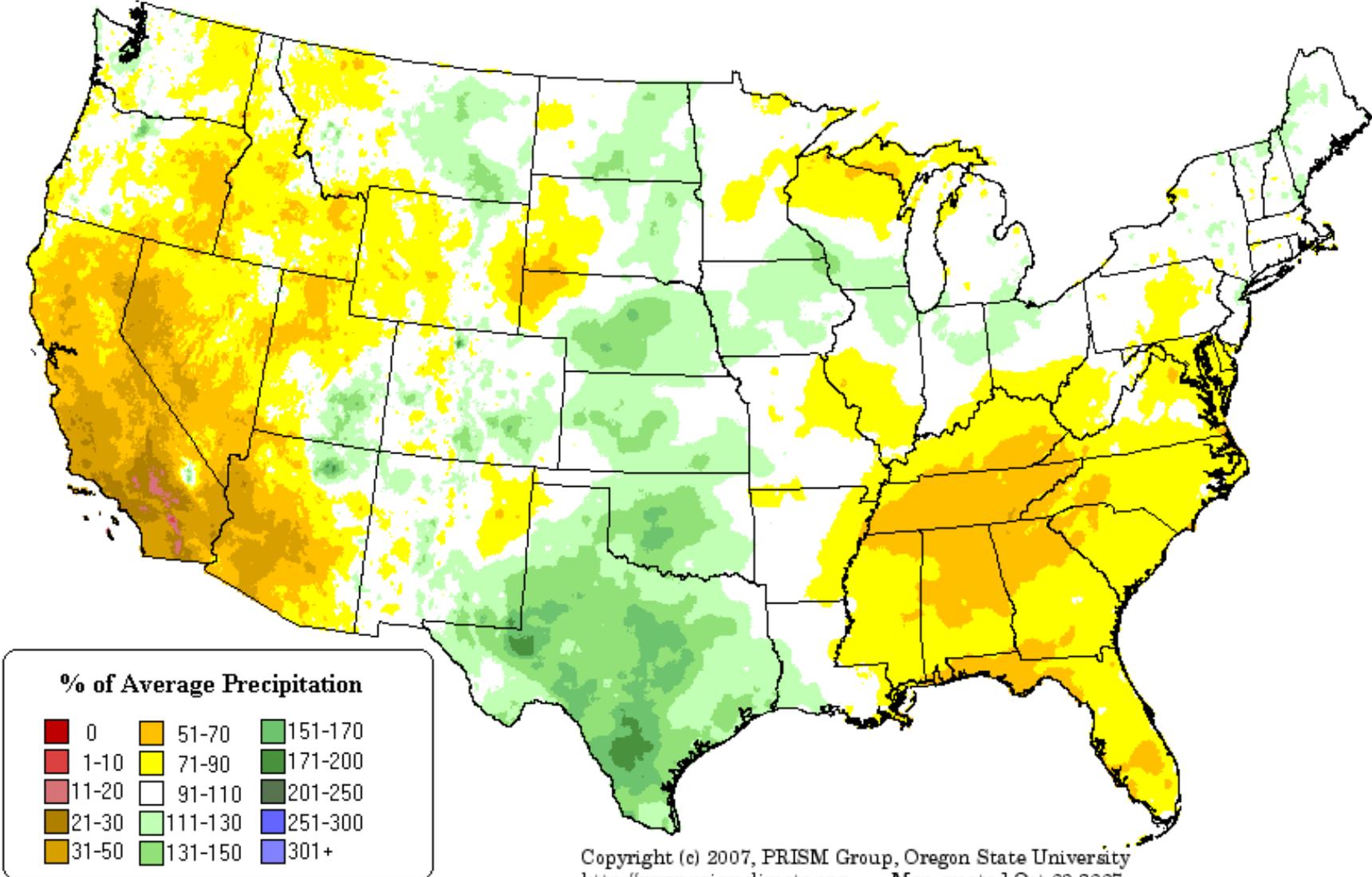
Daily Precipitation Accumulation Summer 2007 (May-September) for Community Collaborative Rain, Hail and Snow Network (CoCoRaHS)

CoCoRAHS Accumulated Precipitation for Summer (May-Sep) by County



Water Year 2007 precipitation as a percent of average (Prism)

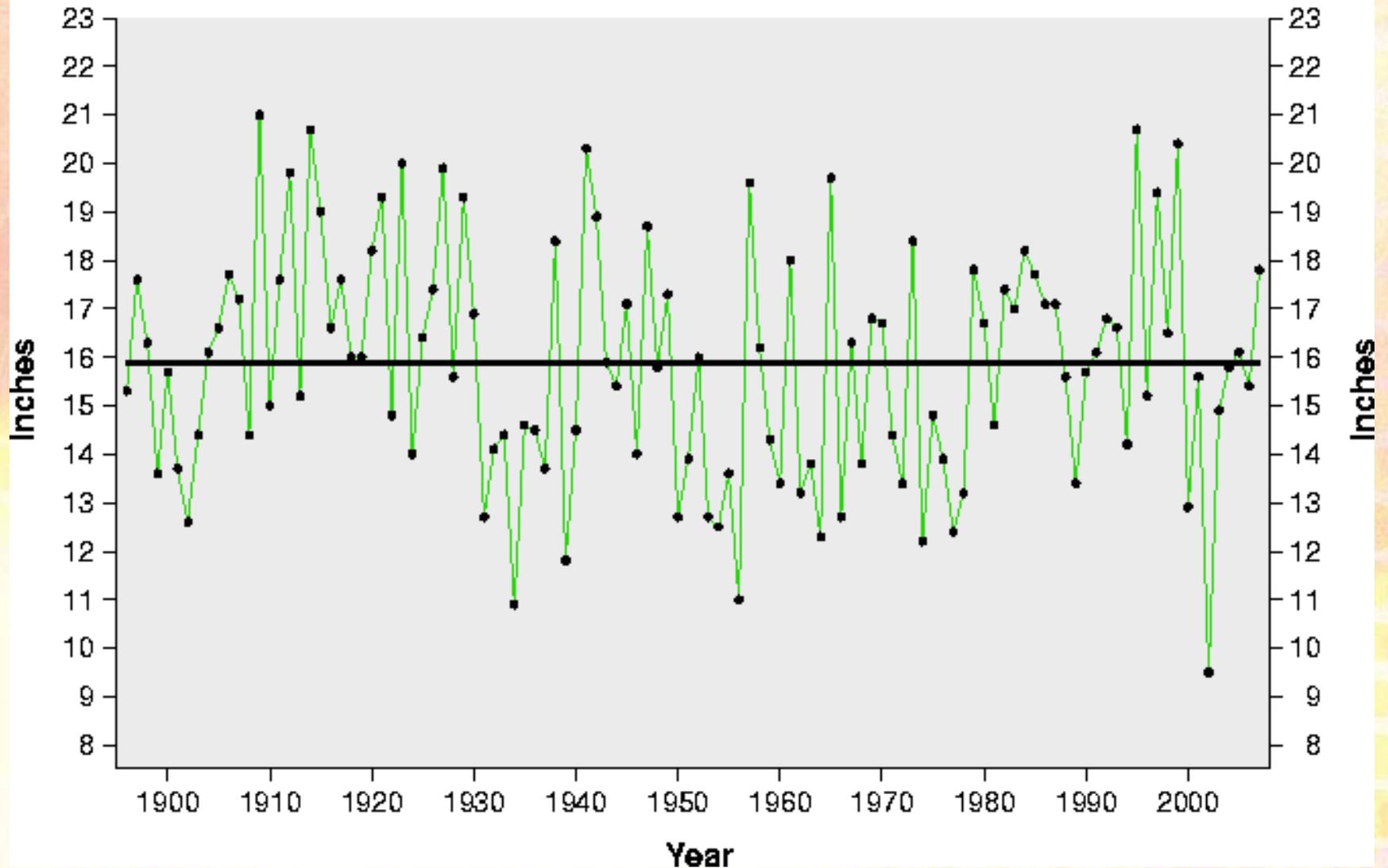
12-month Percent of Average Precipitation: Sep 2007
Provisional Data



Colorado Precipitation in Historic Perspective

— Actual Precipitation
— Average Precipitation

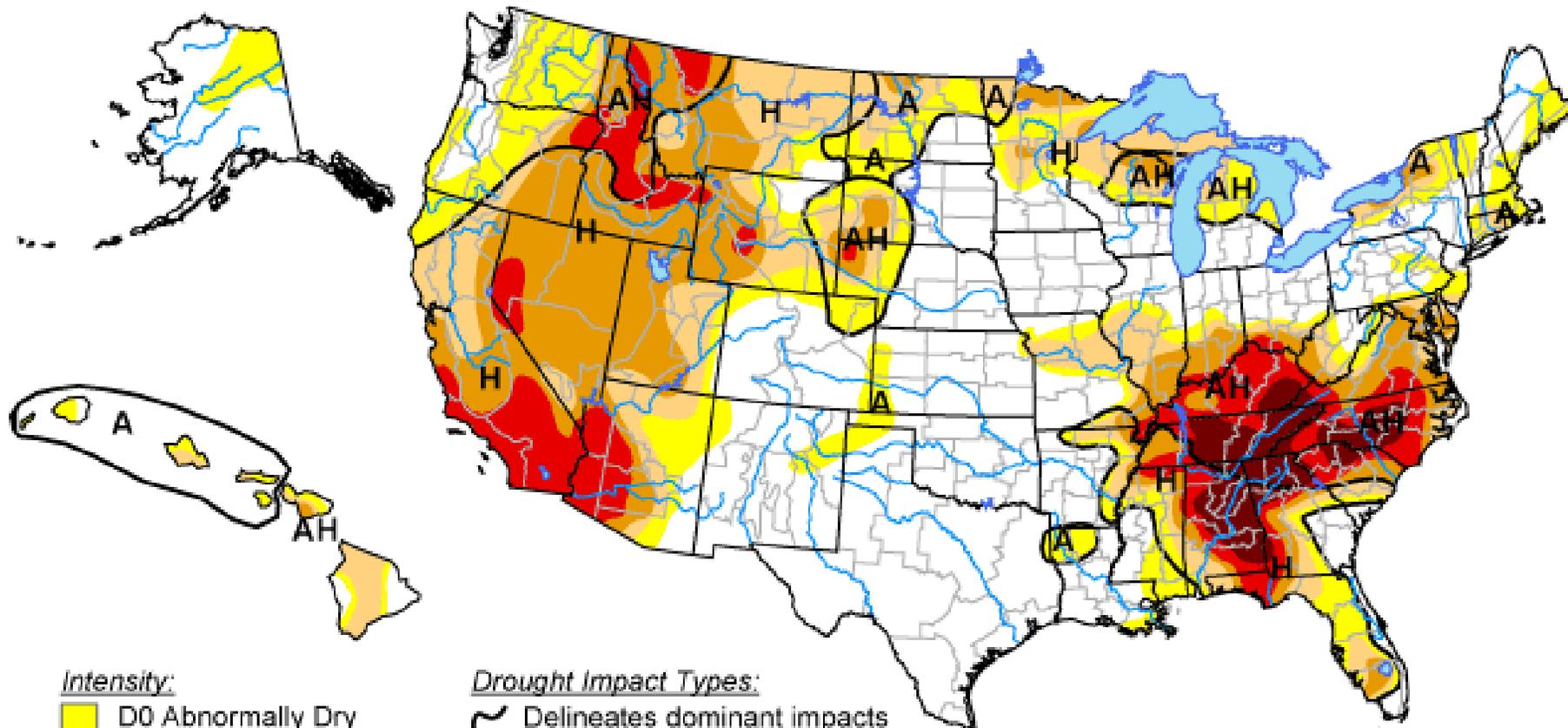
Most recent 12-month period (Oct 2006 – Sep 2007)
(Period of record 1895 – 2007)



U.S. Drought Monitor

October 2, 2007

Valid 8 a.m. EDT



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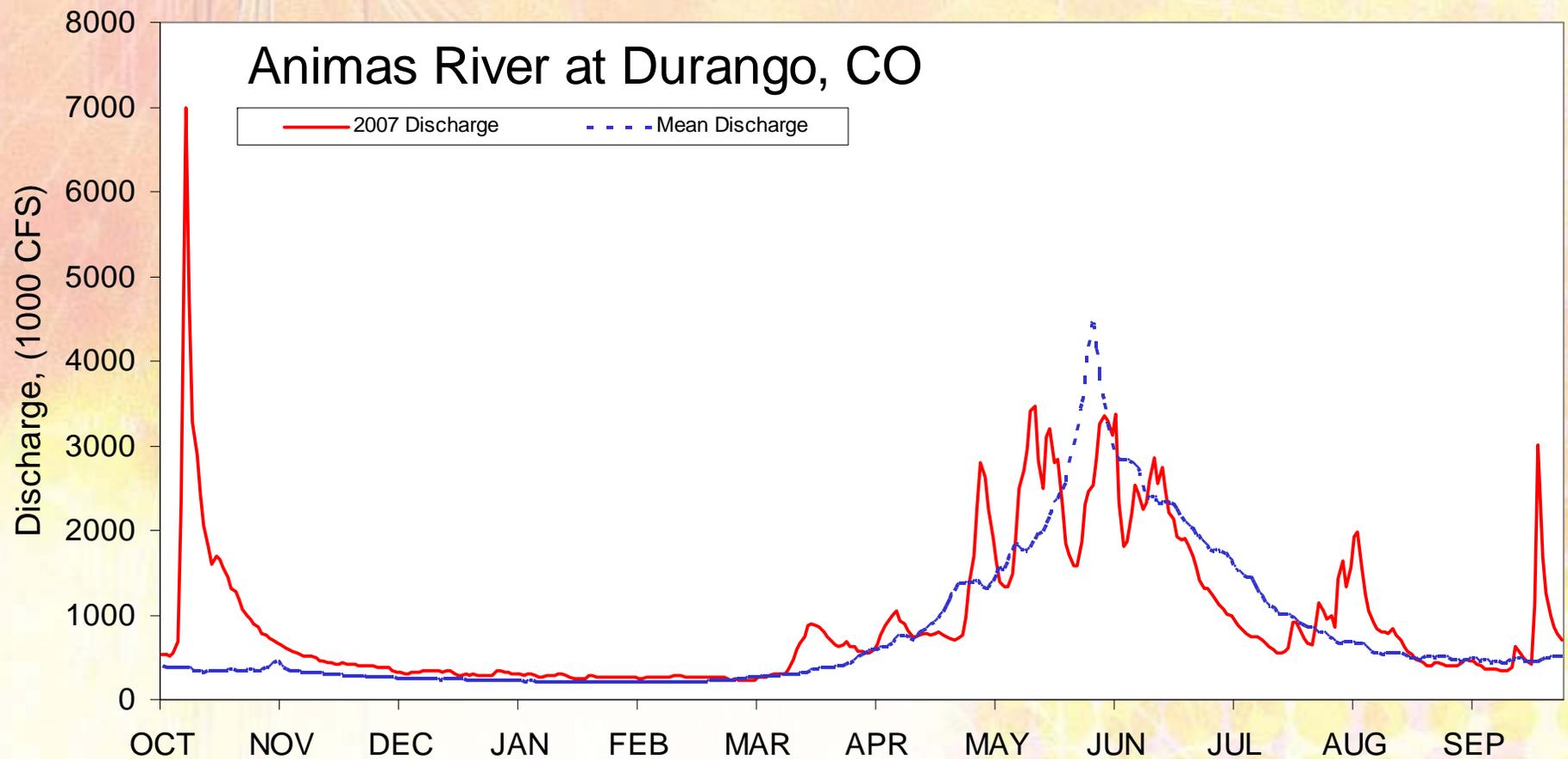
<http://drought.unl.edu/dm>



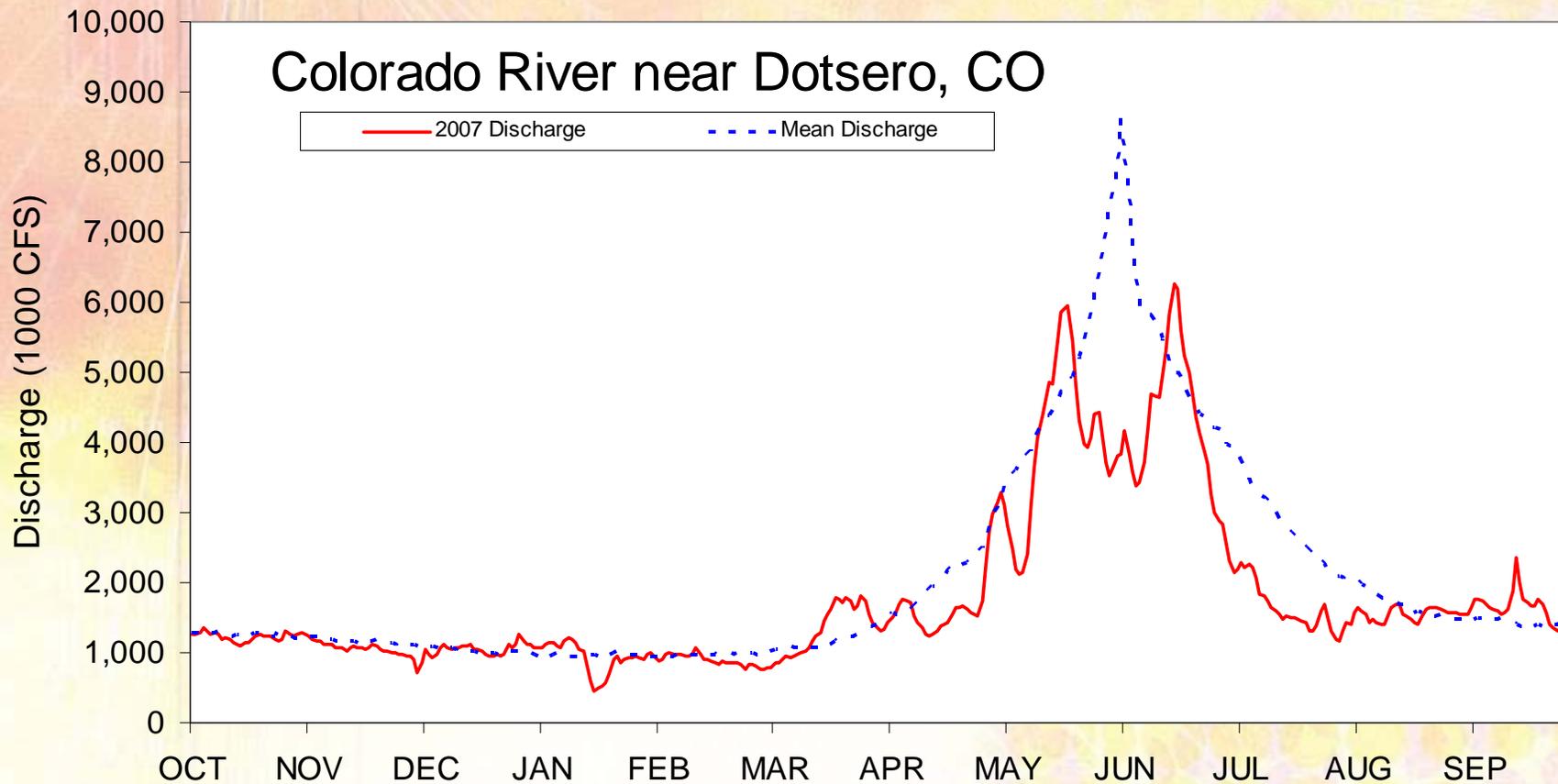
Released Thursday, October 4, 2007

Author: Jay Lawrimore/Liz Love-Brotak, NOAA/NESDIS/NCDC

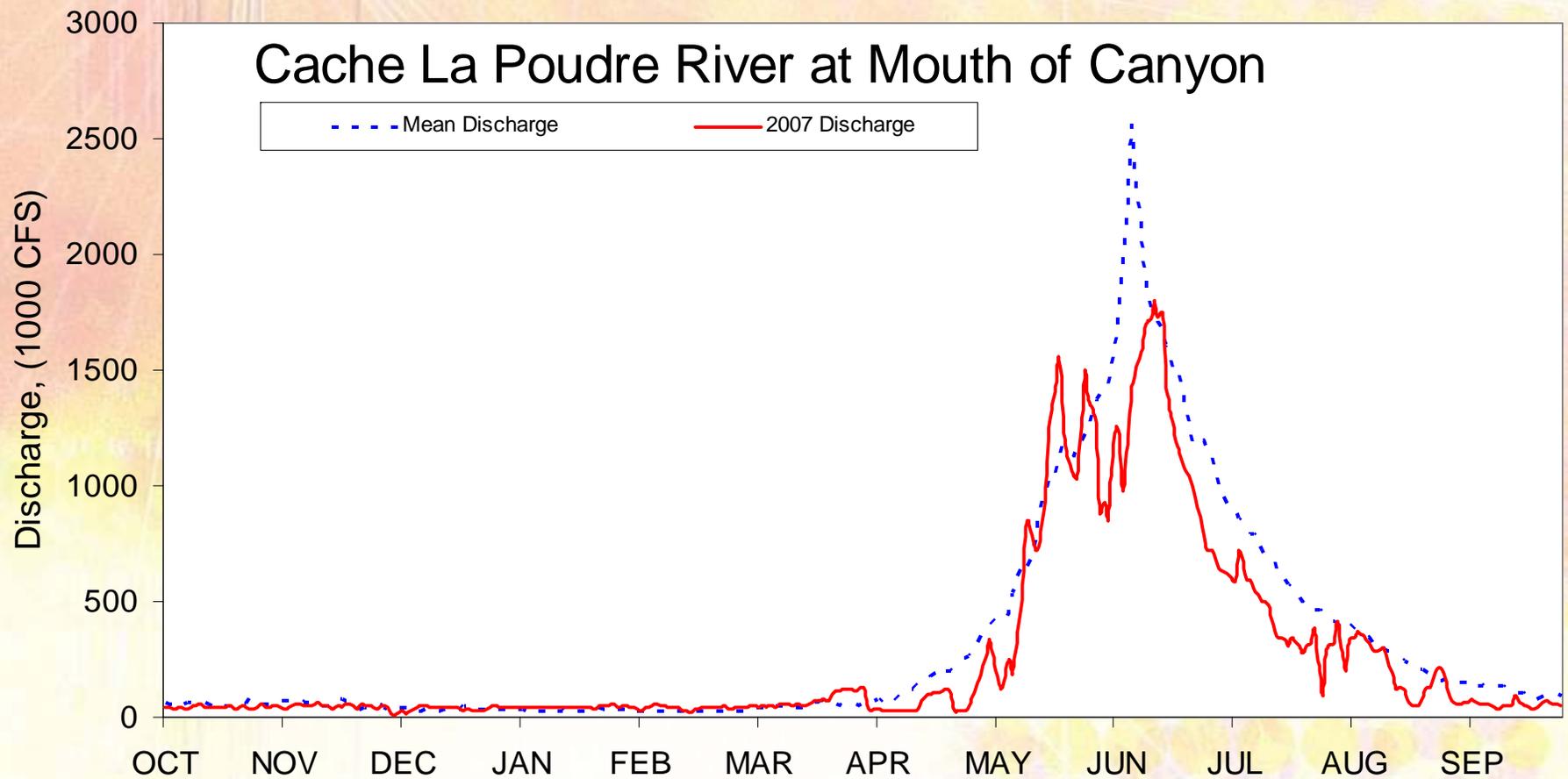
Animas River Streamflow



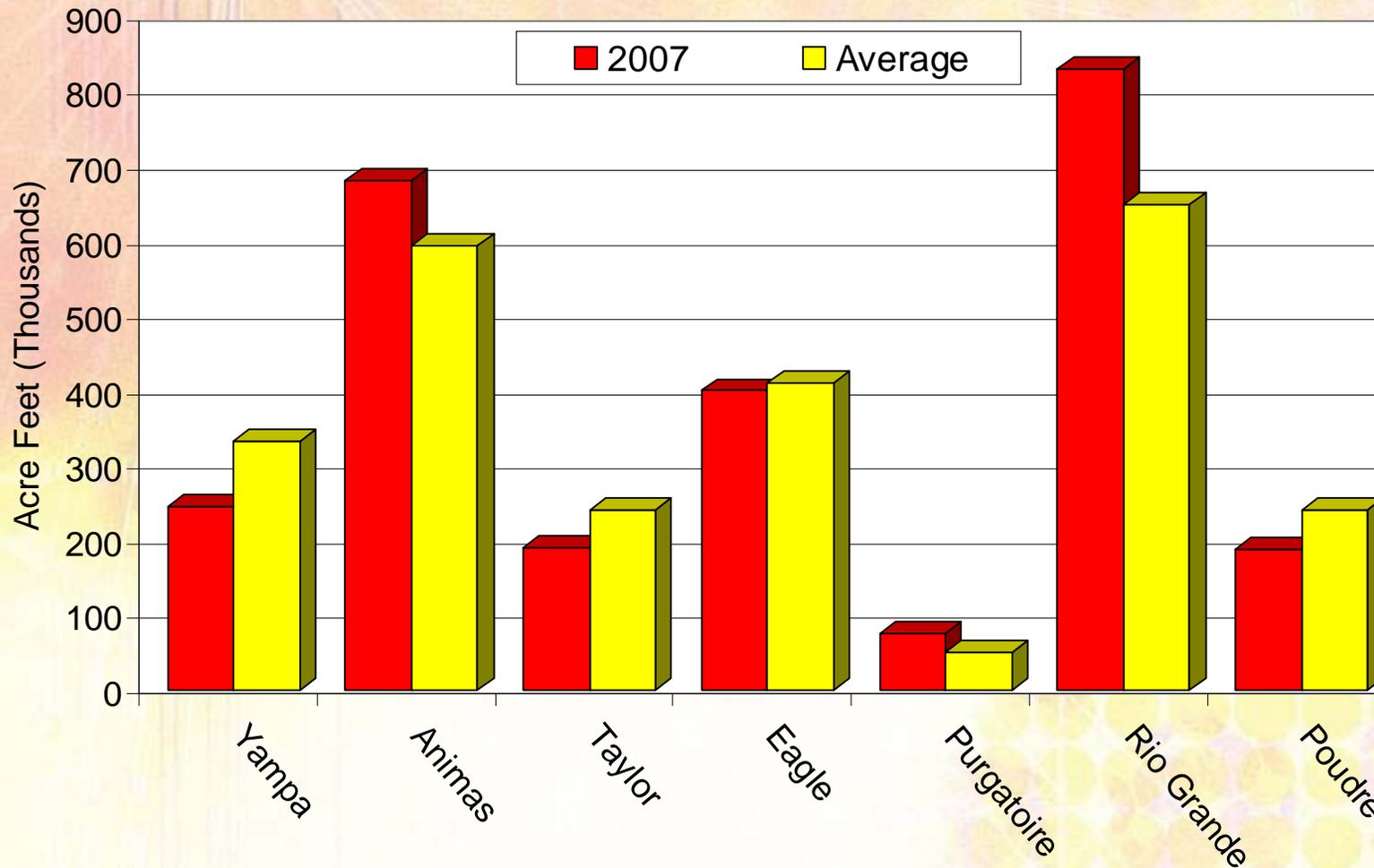
Colorado River Streamflow



Cache La Poudre River Streamflow



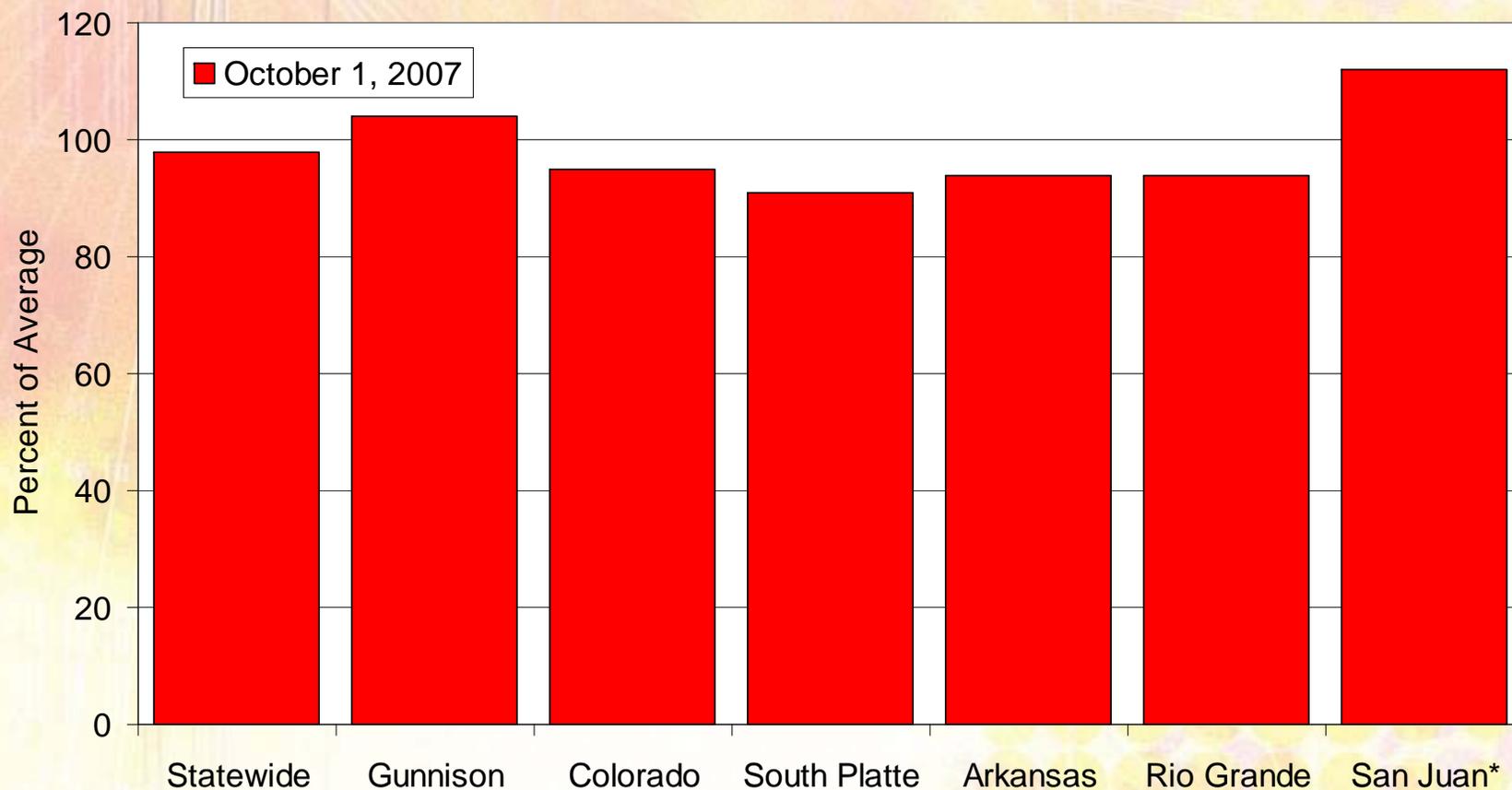
Streamflow vs. Average



2007 Reservoir Storage Summary

- Reservoir storage improved across the state even with lack of snowpack and runoff
- Volumes tracked above average for most of the year in Gunnison, Colorado and San Juan/Animas/Dolores and San Miguel basins
- Storage statewide declined to 98% of average on September 30

Reservoir Storage by Basin, Oct 1, 2007



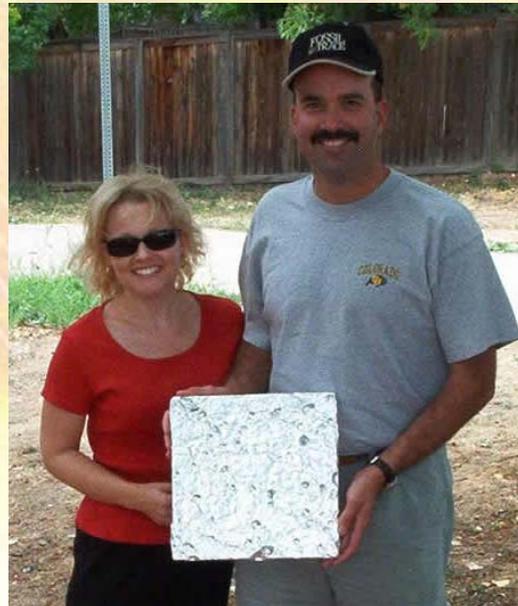
*includes the Animas and Dolores basins

Colorado Reservoir Storage Levels

Colorado Statewide Reservoir Levels on October 1st
for Years 1997- 2007



CoCoRaHS – Community Collaborative Rain Hail and Snow: We're looking for more volunteers!



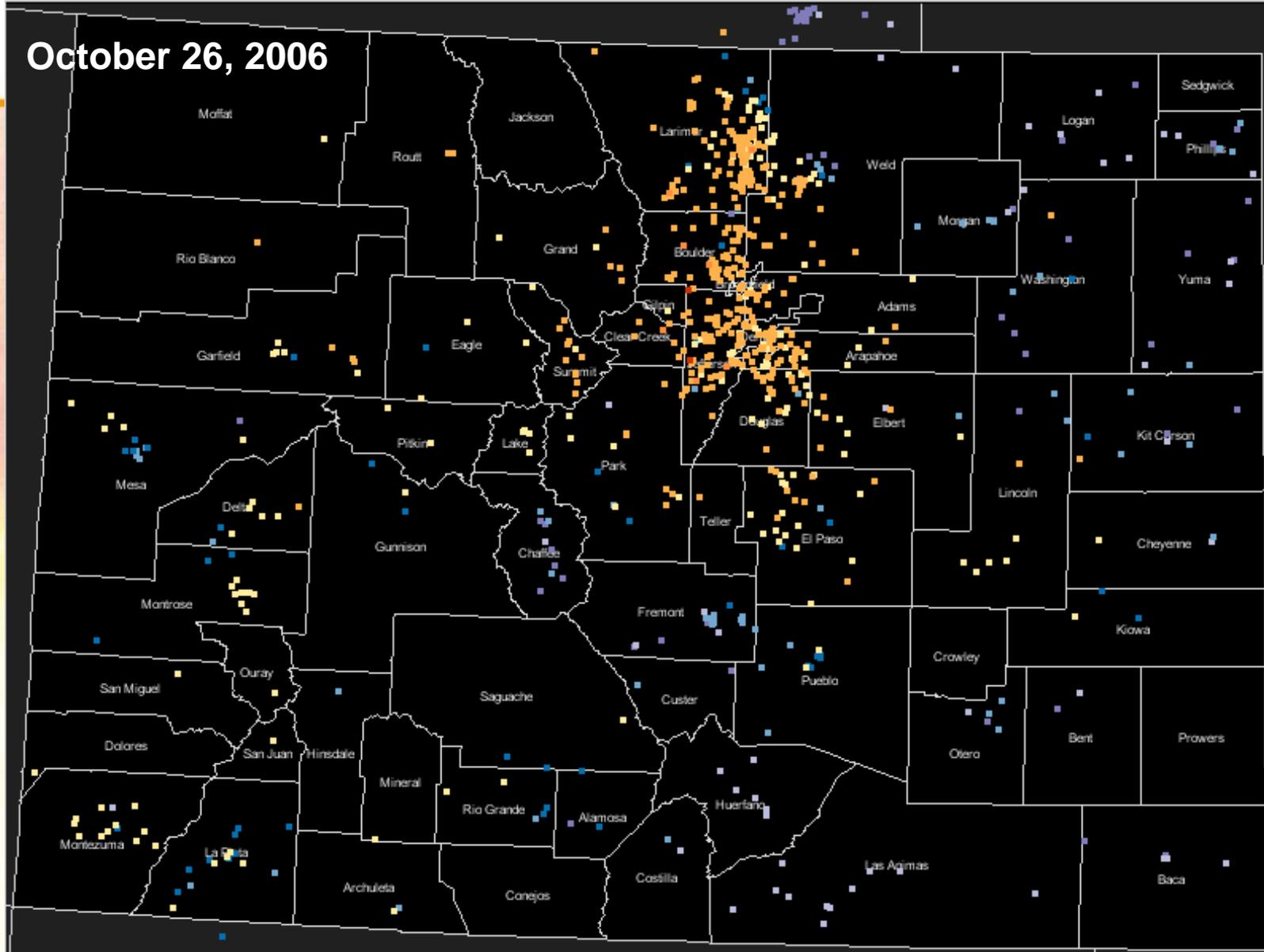
CoCo RaHS Daily Highlights 2007 Water Year

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

Colorado 10/26/2006

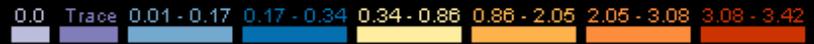
0.0 Trace 0.01 - 0.12 0.12 - 0.23 0.23 - 0.59 0.59 - 1.40 1.40 - 2.11 2.11 - 2.34

October 26, 2006

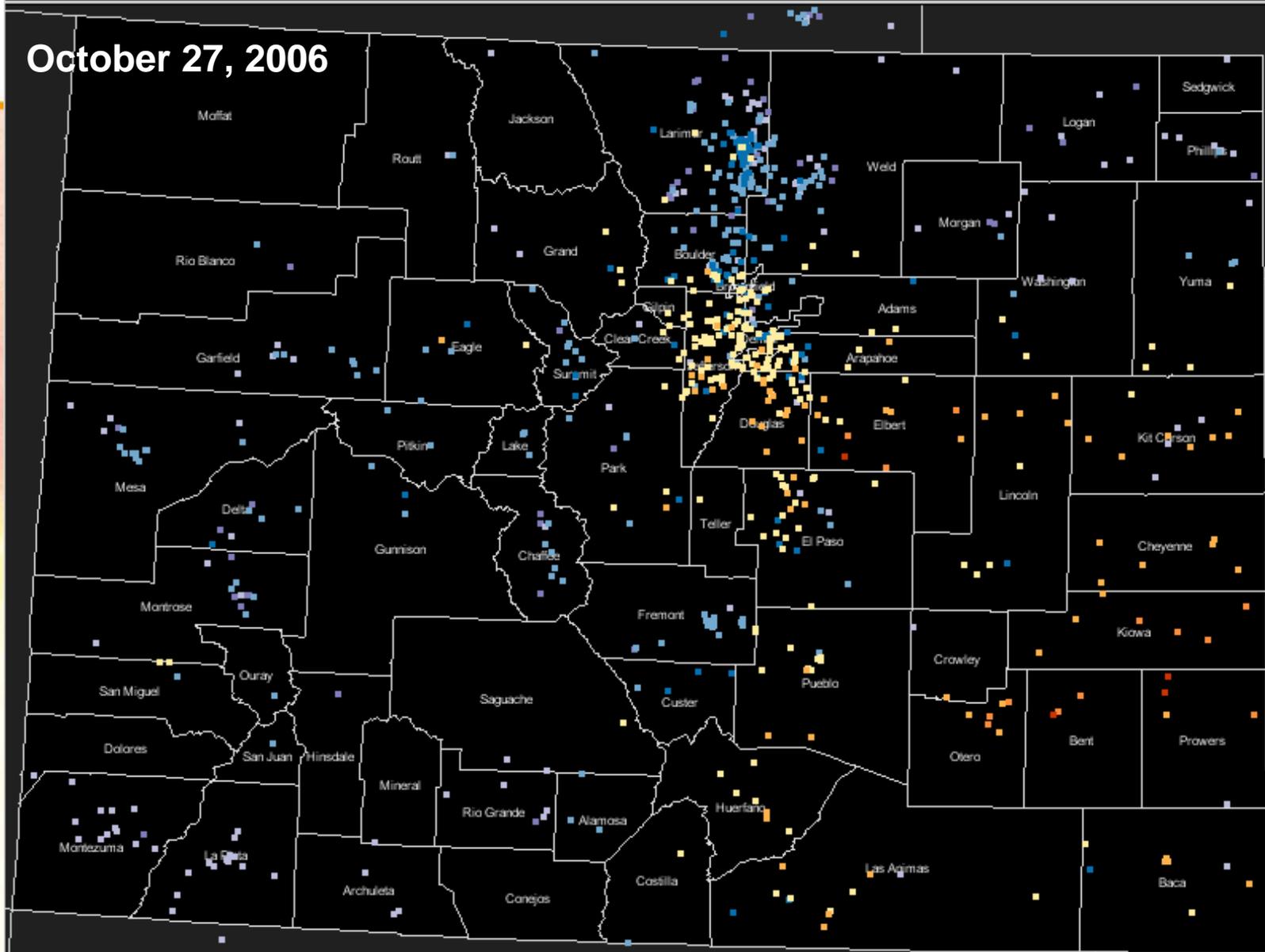


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 10/27/2006



October 27, 2006

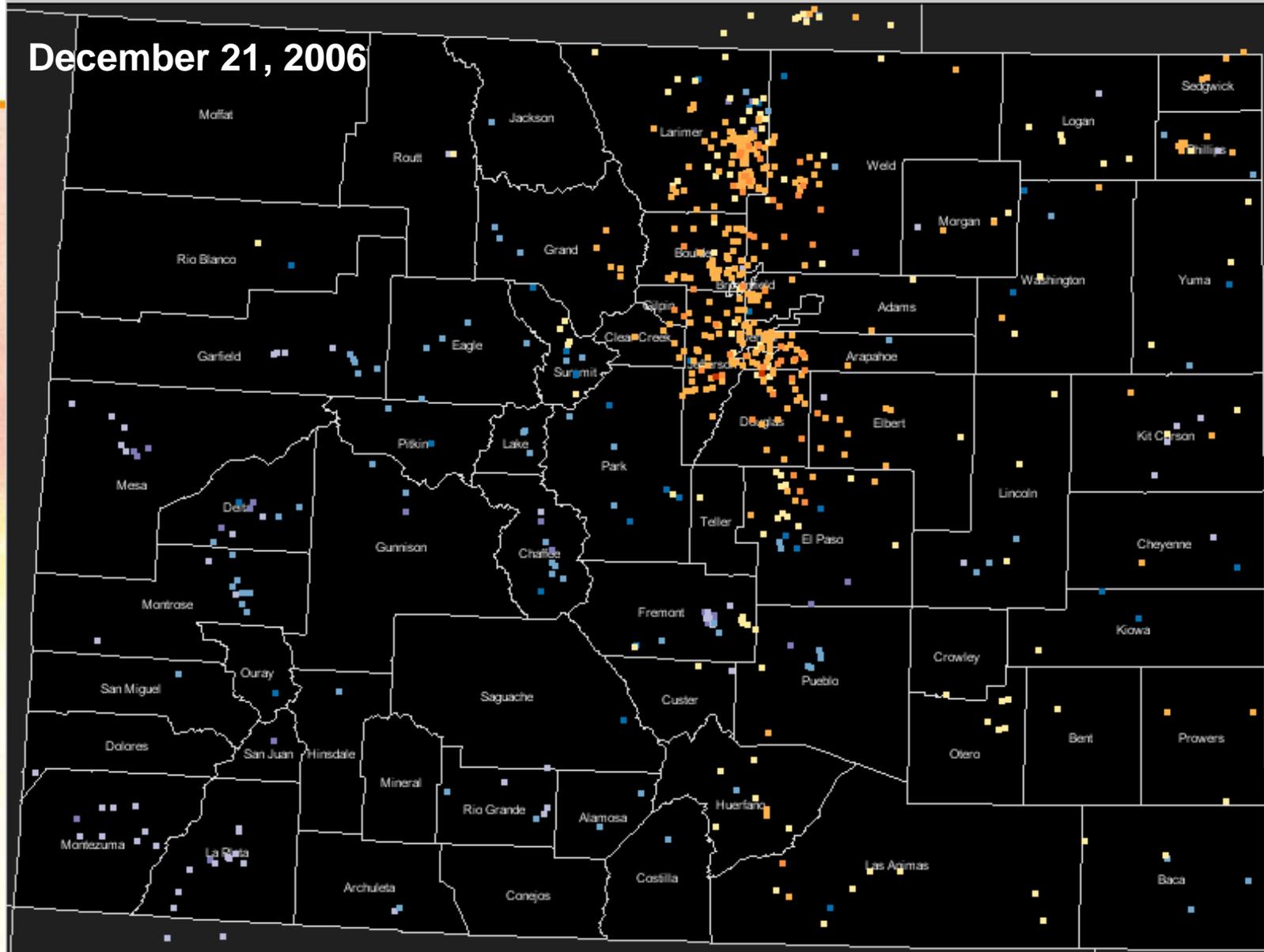


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 12/21/2006



December 21, 2006

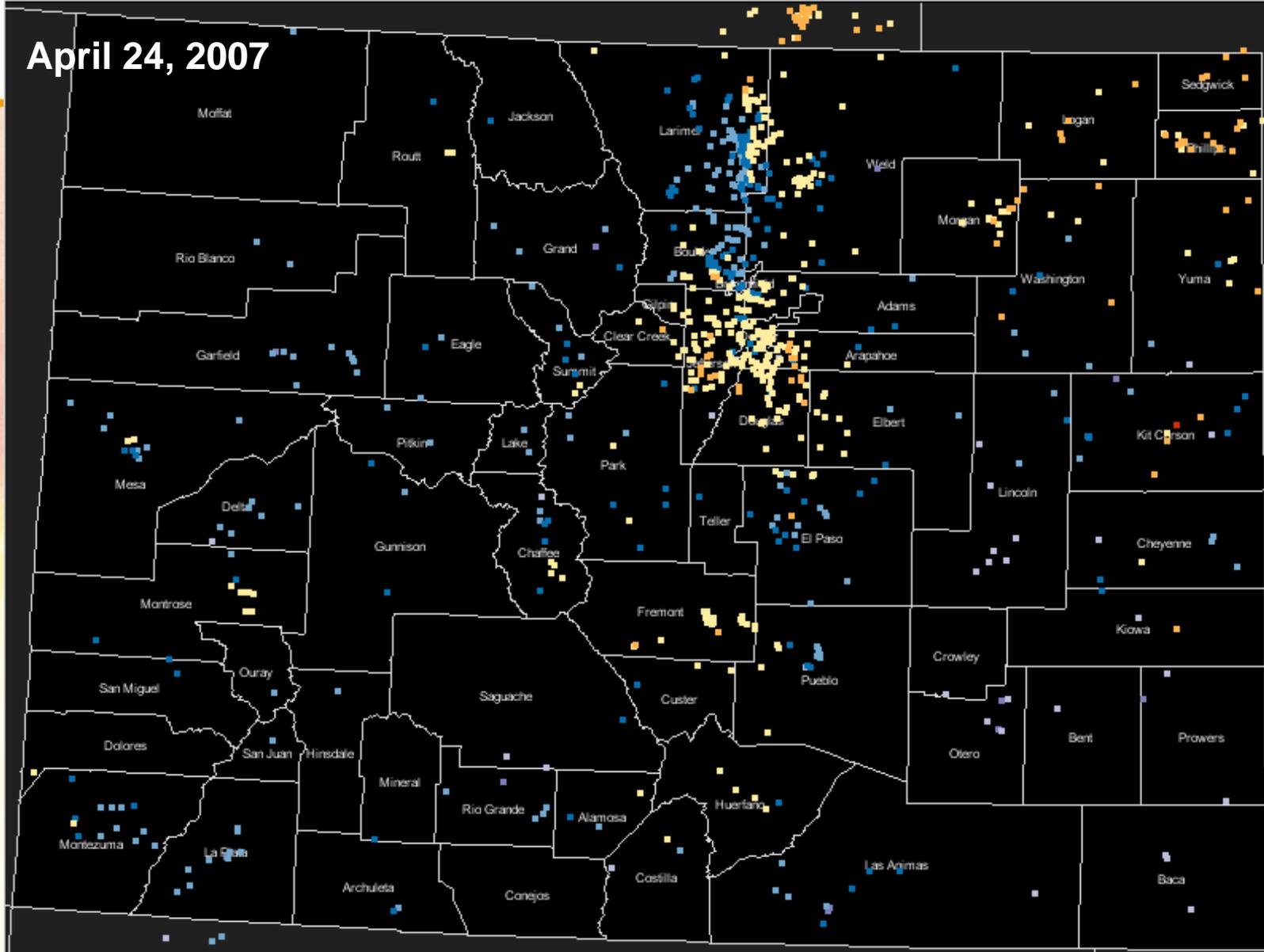


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 4/24/2007

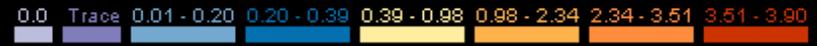
0.0 Trace 0.01 - 0.21 0.21 - 0.41 0.41 - 1.03 1.03 - 2.46 2.46 - 3.69 3.69 - 4.10

April 24, 2007

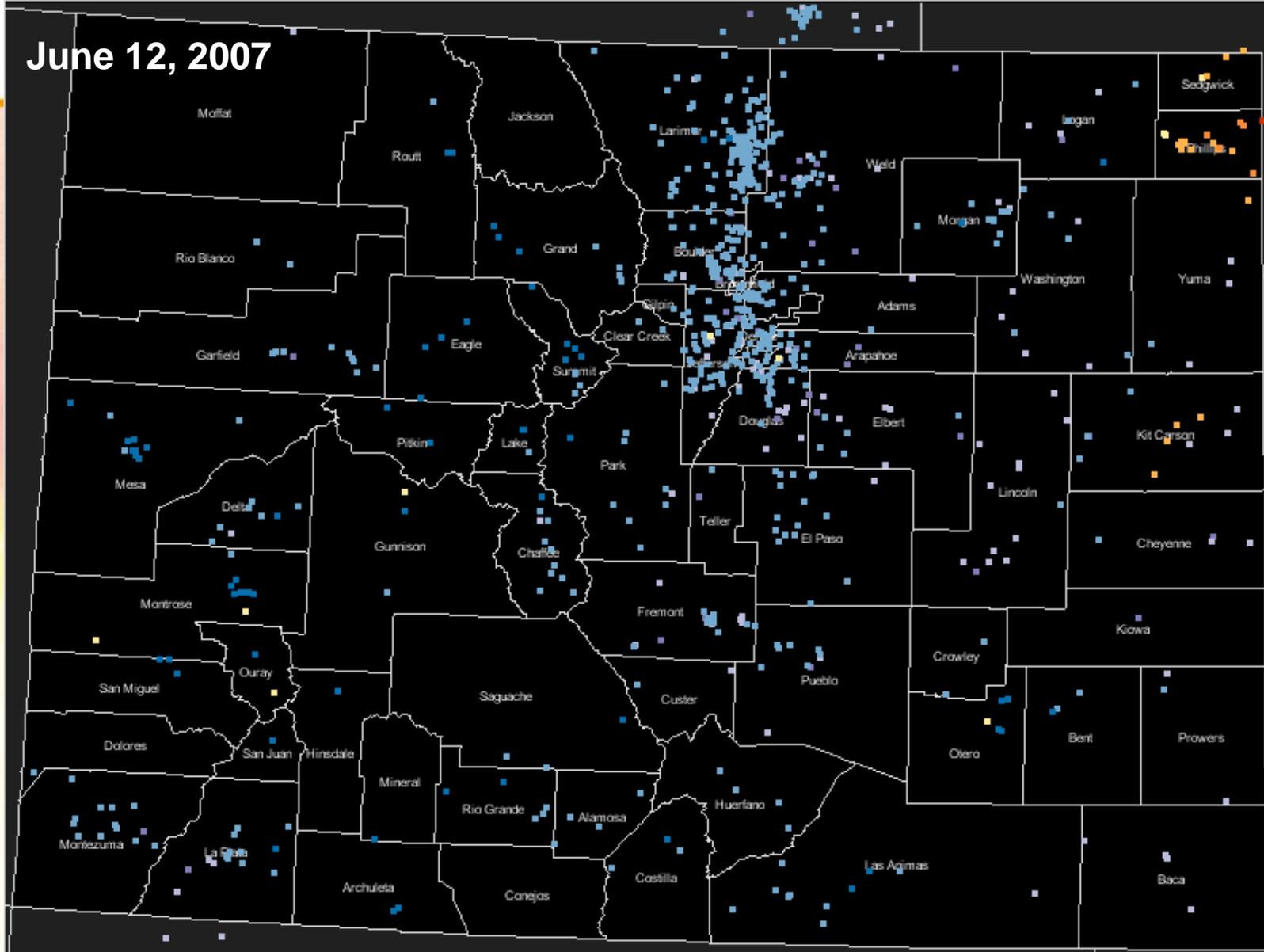


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 6/12/2007

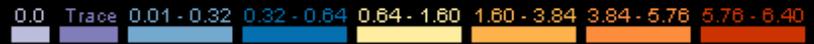


June 12, 2007

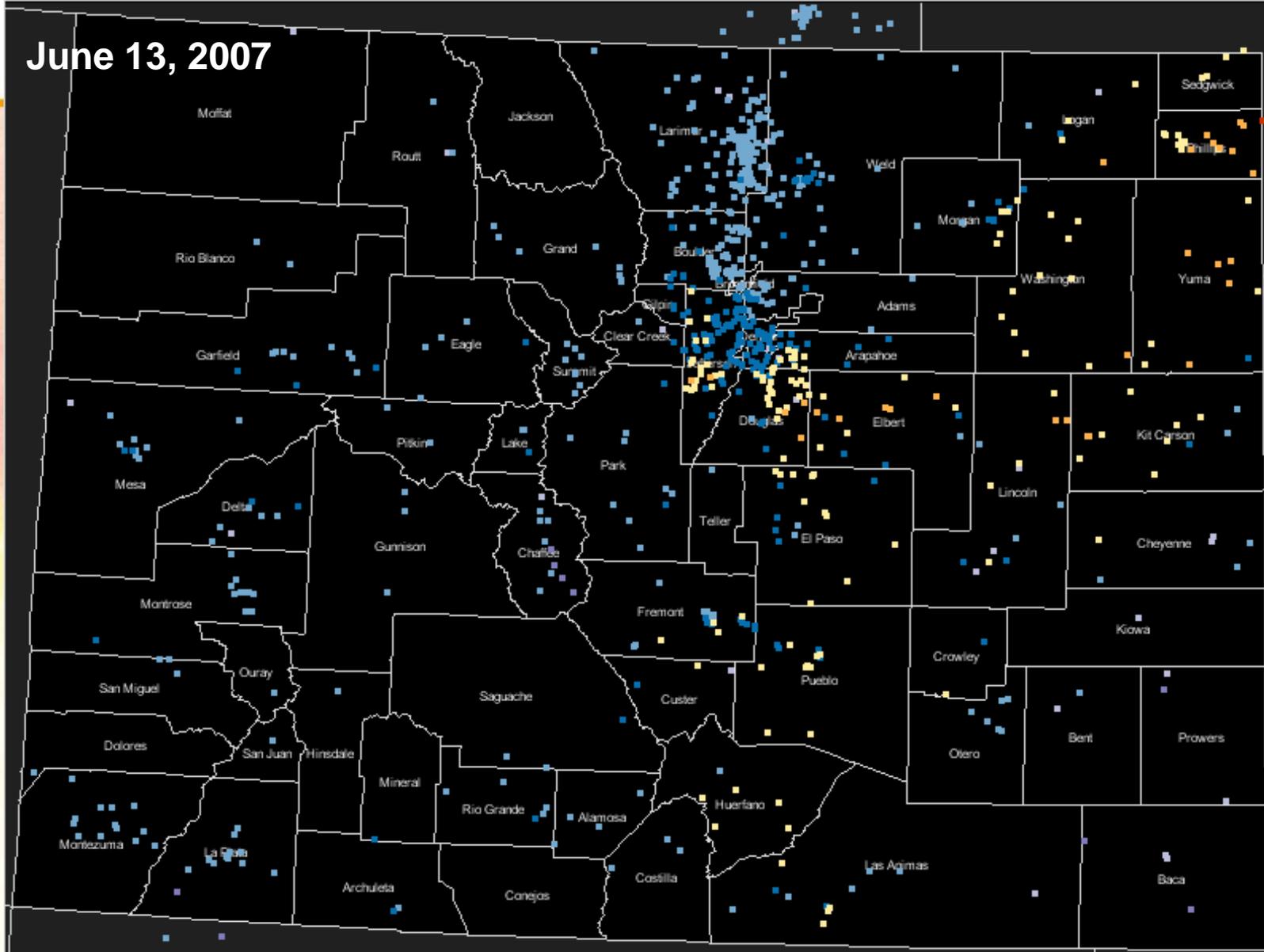


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 6/13/2007



June 13, 2007

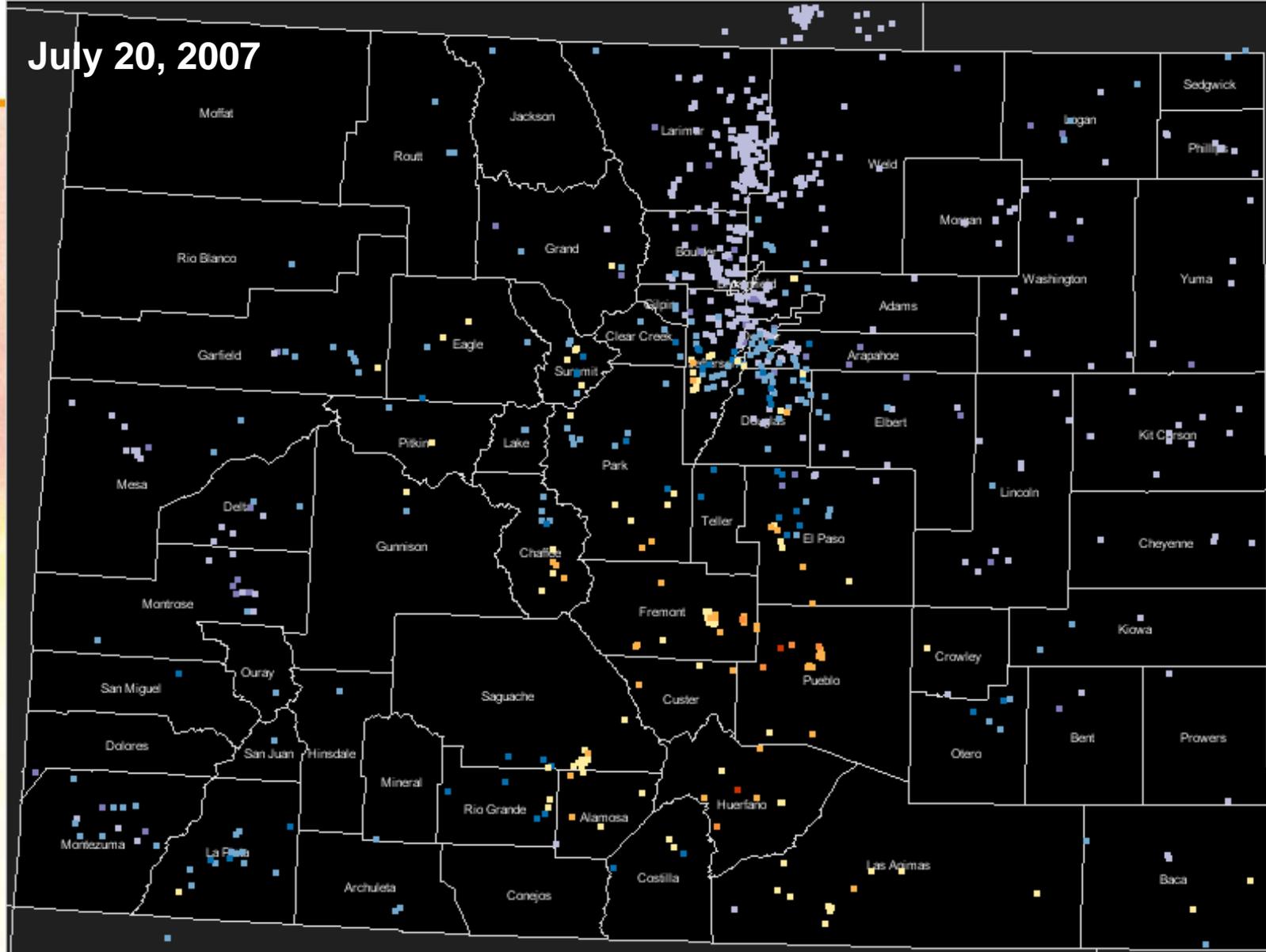


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 7/20/2007

0.0 Trace 0.01 - 0.21 0.21 - 0.41 0.41 - 1.03 1.03 - 2.47 2.47 - 3.71 3.71 - 4.12

July 20, 2007

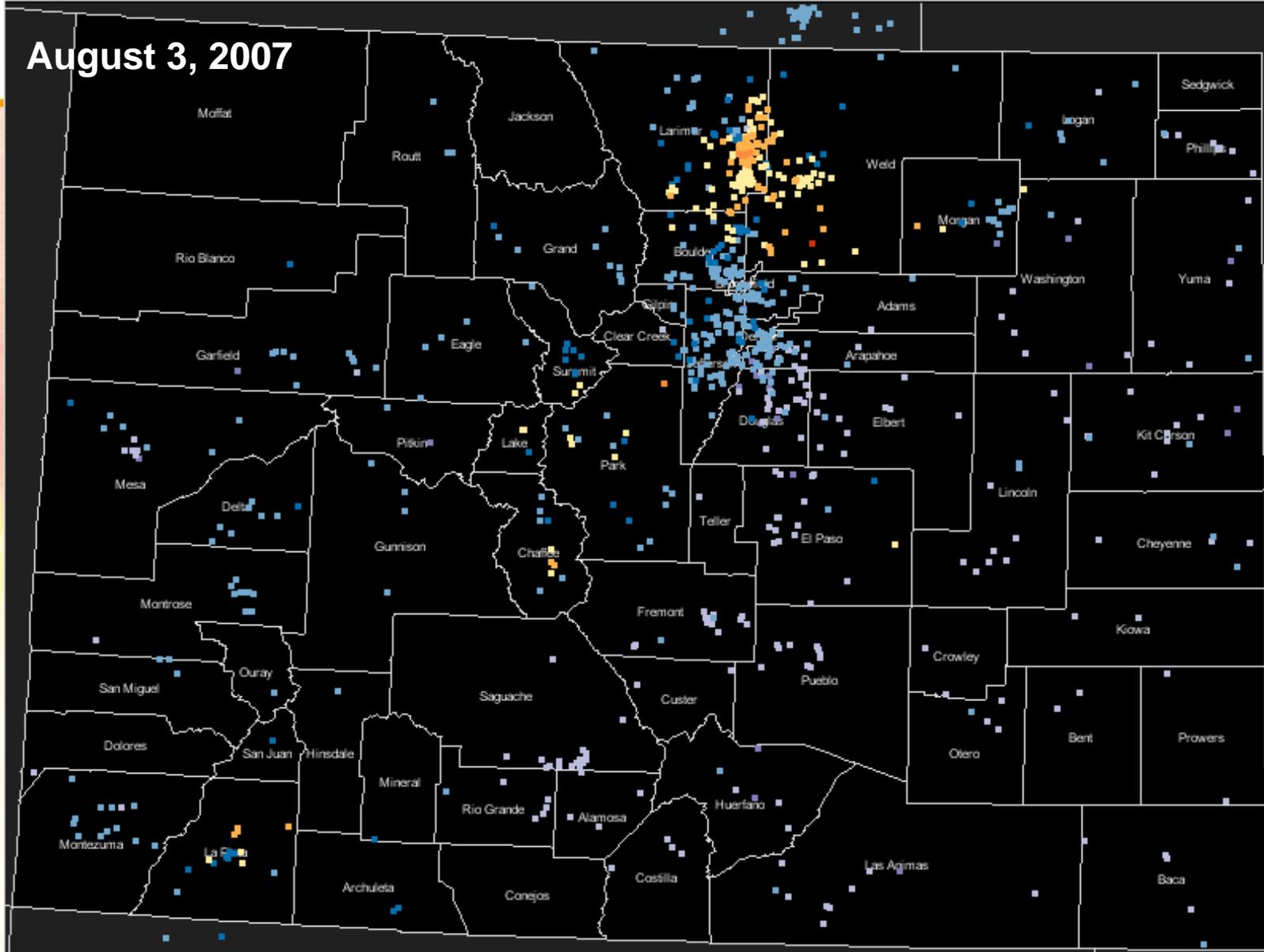


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 8/3/2007

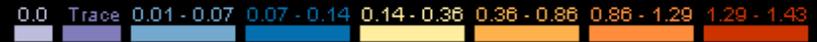
0.0 Trace 0.01 - 0.32 0.32 - 0.64 0.64 - 1.59 1.59 - 3.82 3.82 - 5.73 5.73 - 6.37

August 3, 2007

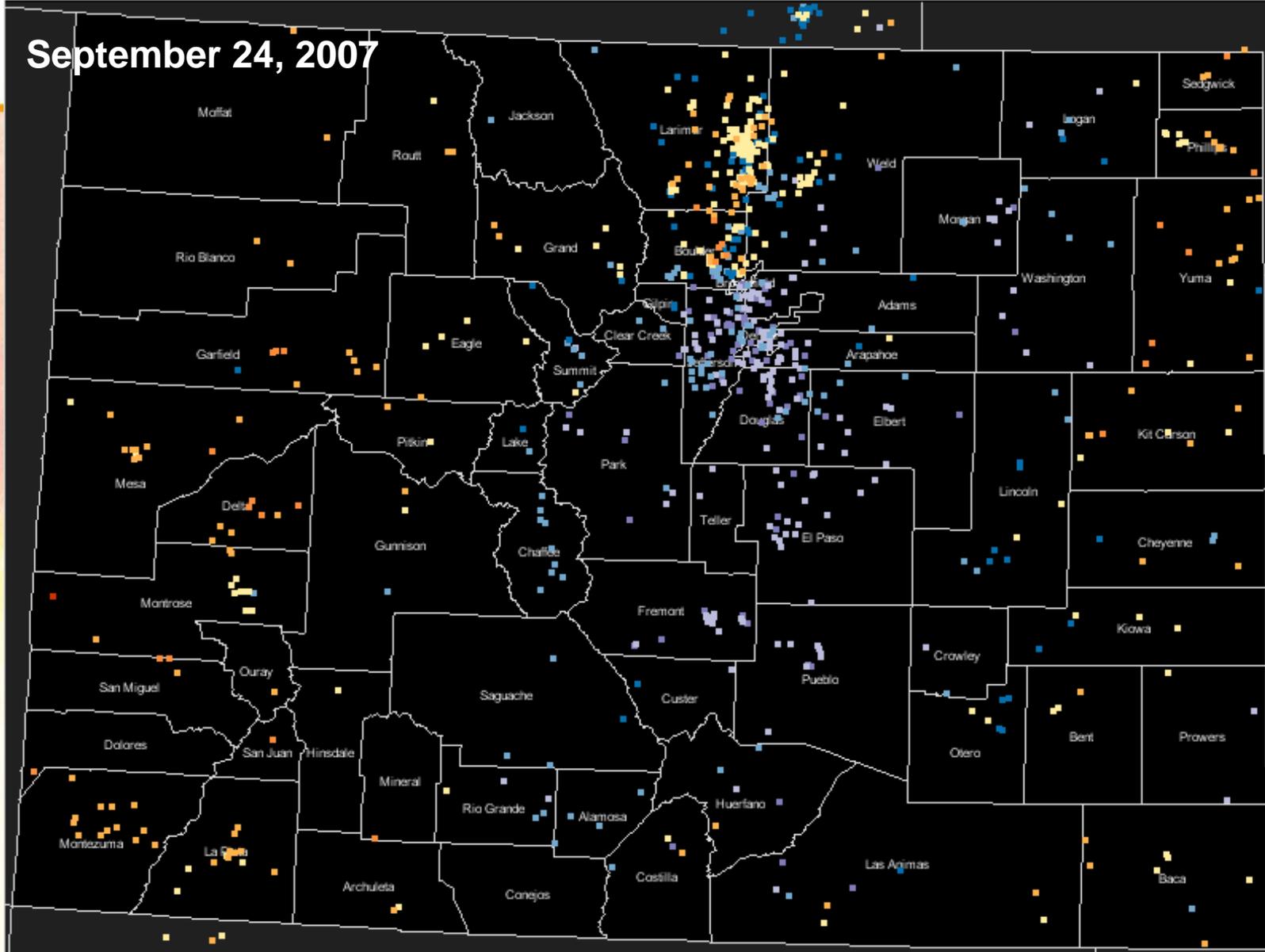


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Colorado 9/24/2007



September 24, 2007



Natural Resources Conservation Service Snow Survey Office

- Access to snowpack, precipitation, reservoir data and streamflow forecast information available at:
<http://www.co.nrcs.usda.gov/snow/index.html>



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”

