

The Climate of Colorado – The Source of Our Water

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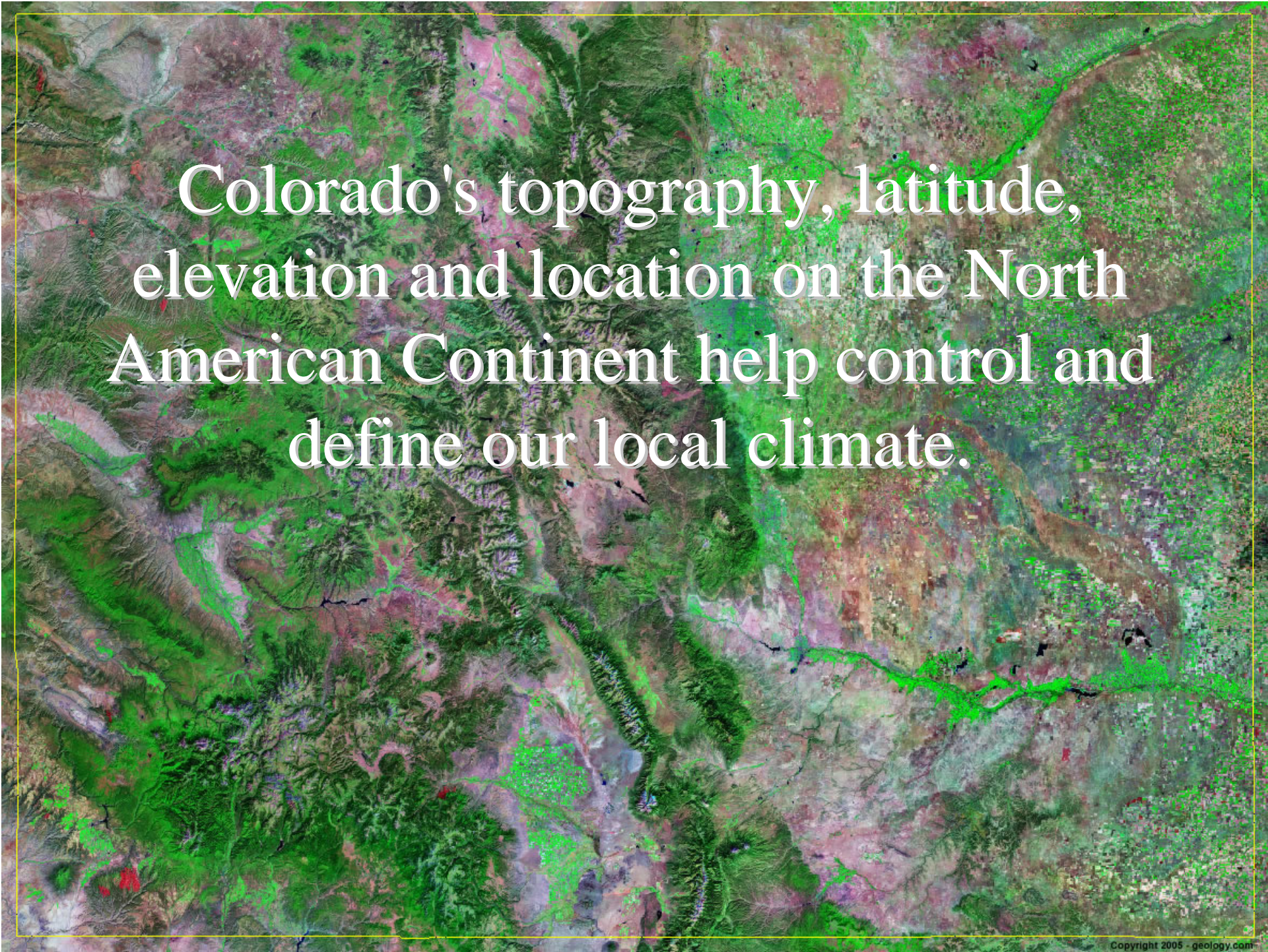
Presented at *Master Gardener Short Course, Colorado
State University, July 13, 2007, Fort Collins, Colorado*



**Colorado
State
University**
Knowledge to Go Places

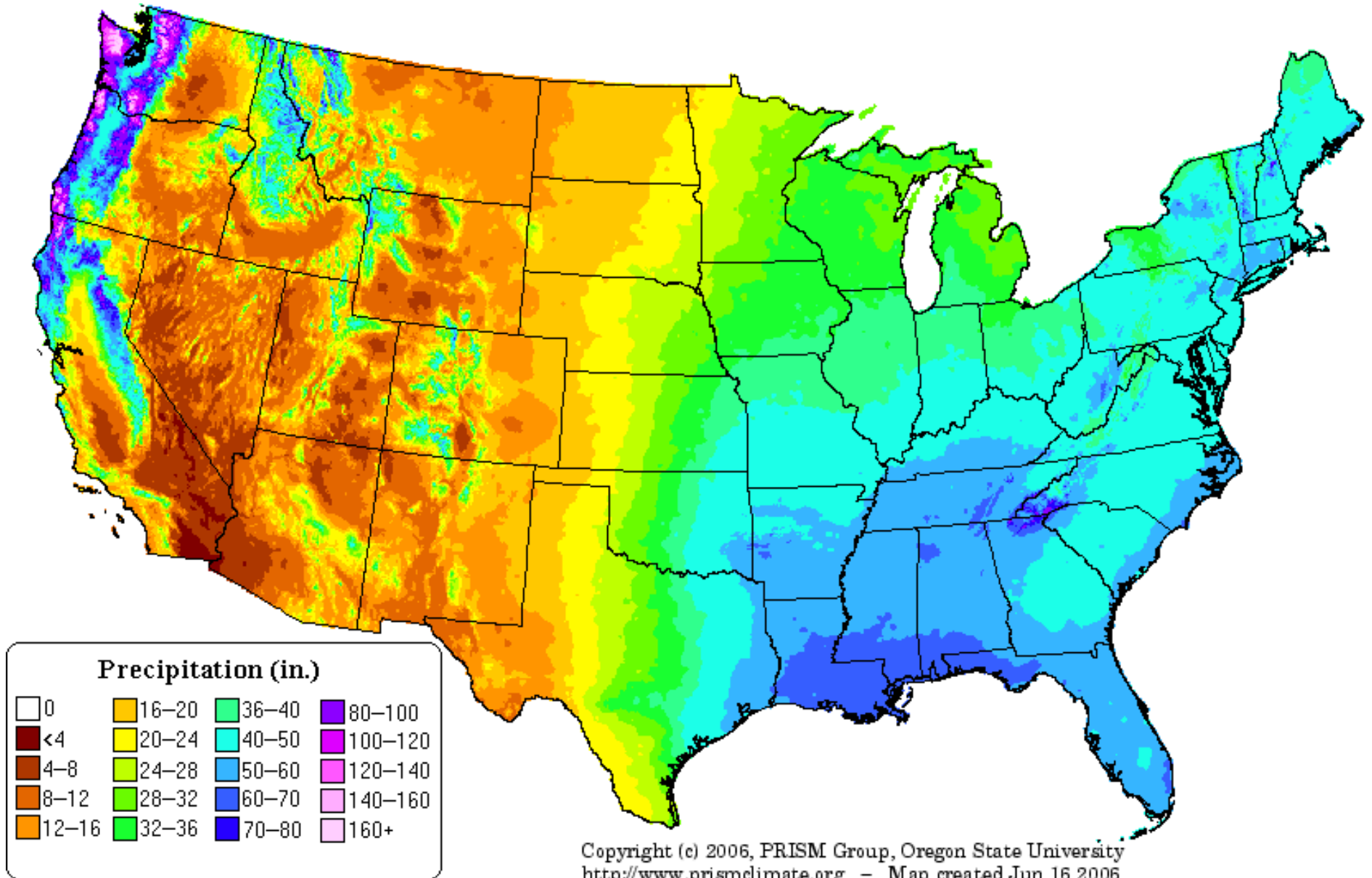
Precipitation in Colorado – very important
and highly variable



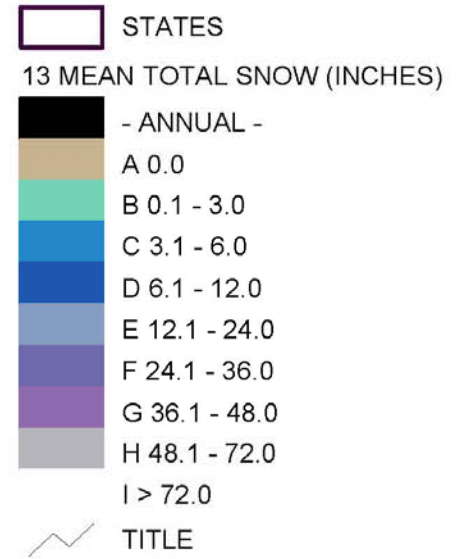
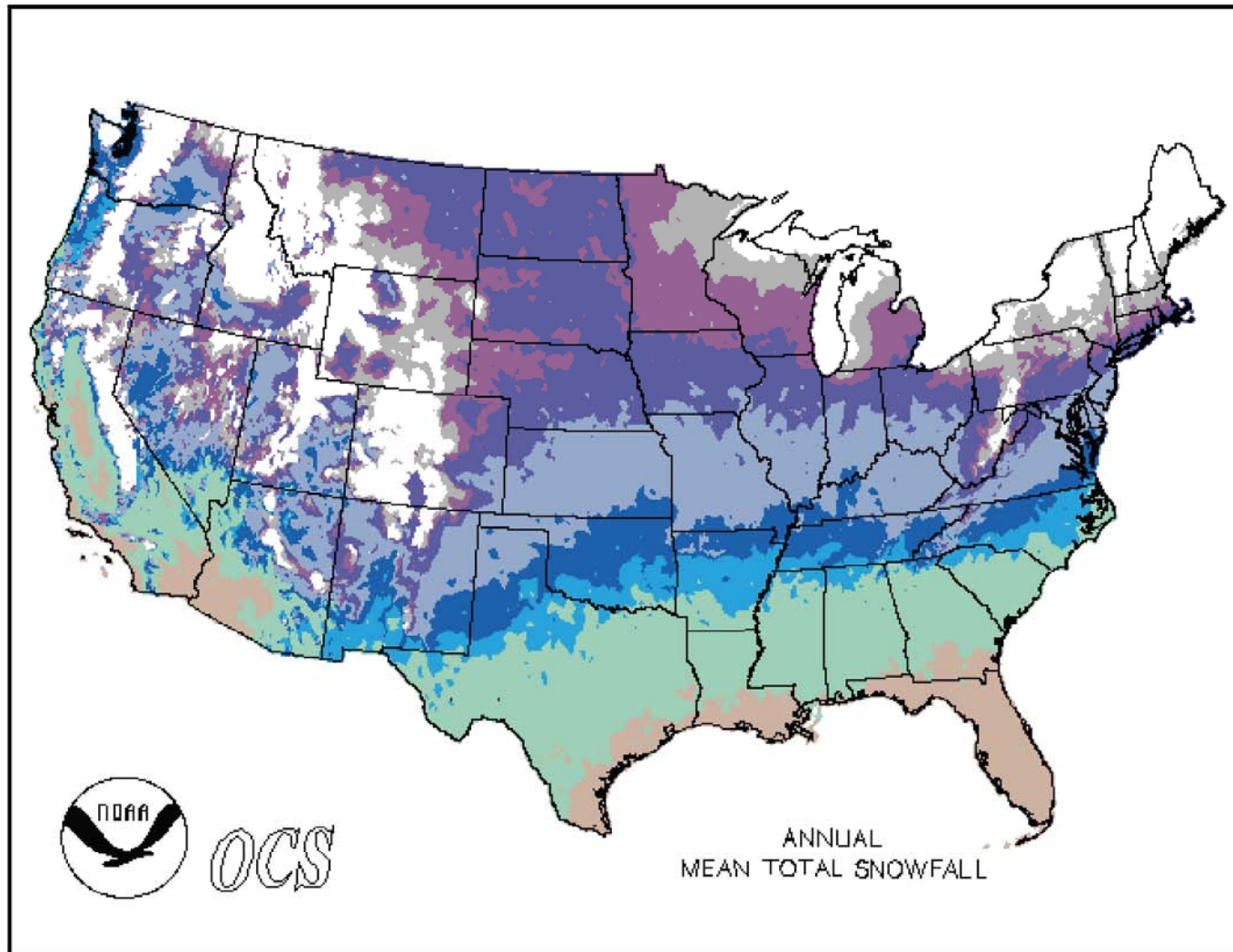
A topographic map of Colorado, showing the state's diverse terrain with various shades of green, brown, and purple representing different elevations and geological features. The map is framed by a thin yellow border. Overlaid on the map is a white text box containing the following text:

Colorado's topography, latitude, elevation and location on the North American Continent help control and define our local climate.

Precipitation: Annual Climatology (1971–2000)

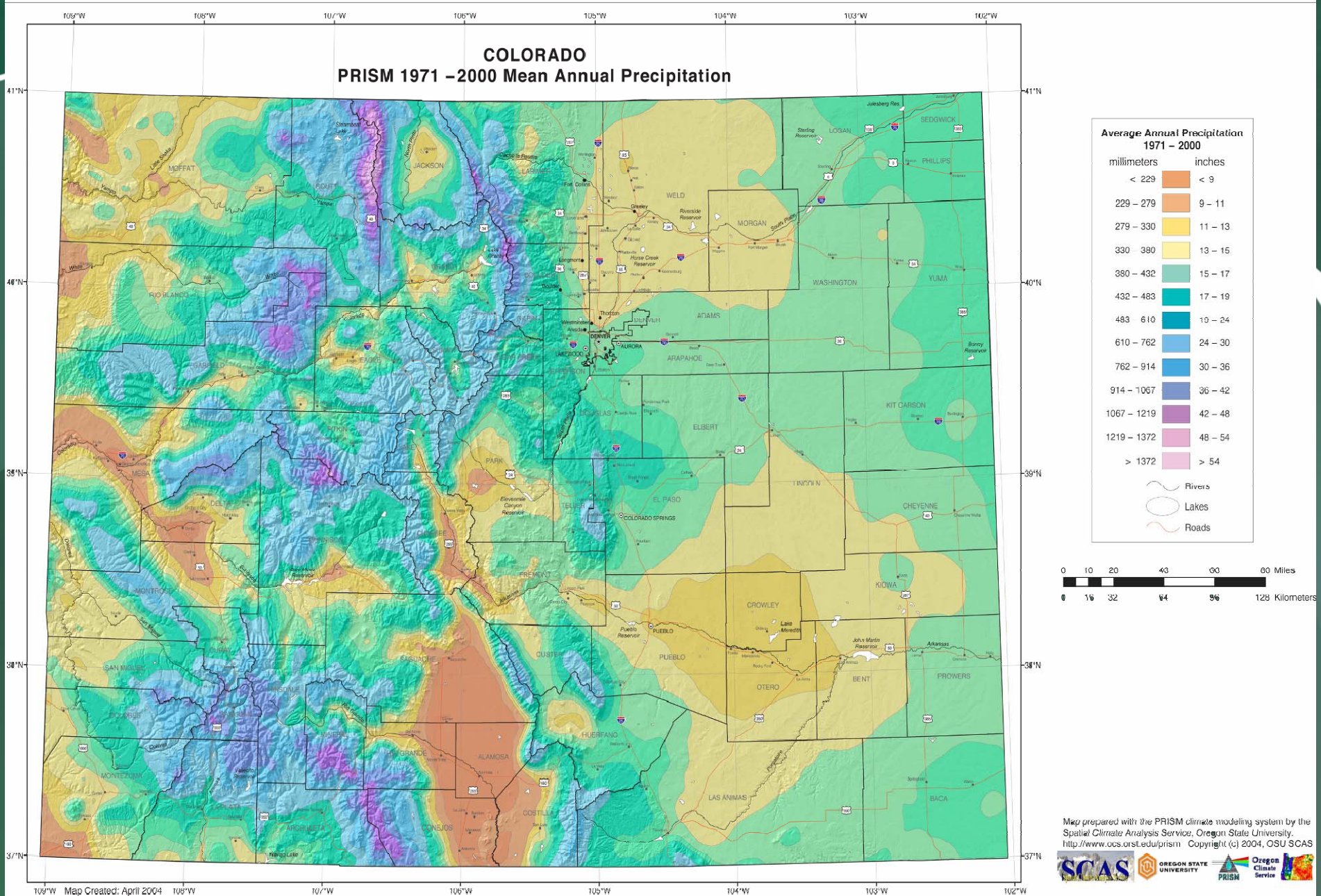


National Annual Average Snowfall



Colorado Average Annual Precipitation

COLORADO
PRISM 1971 - 2000 Mean Annual Precipitation

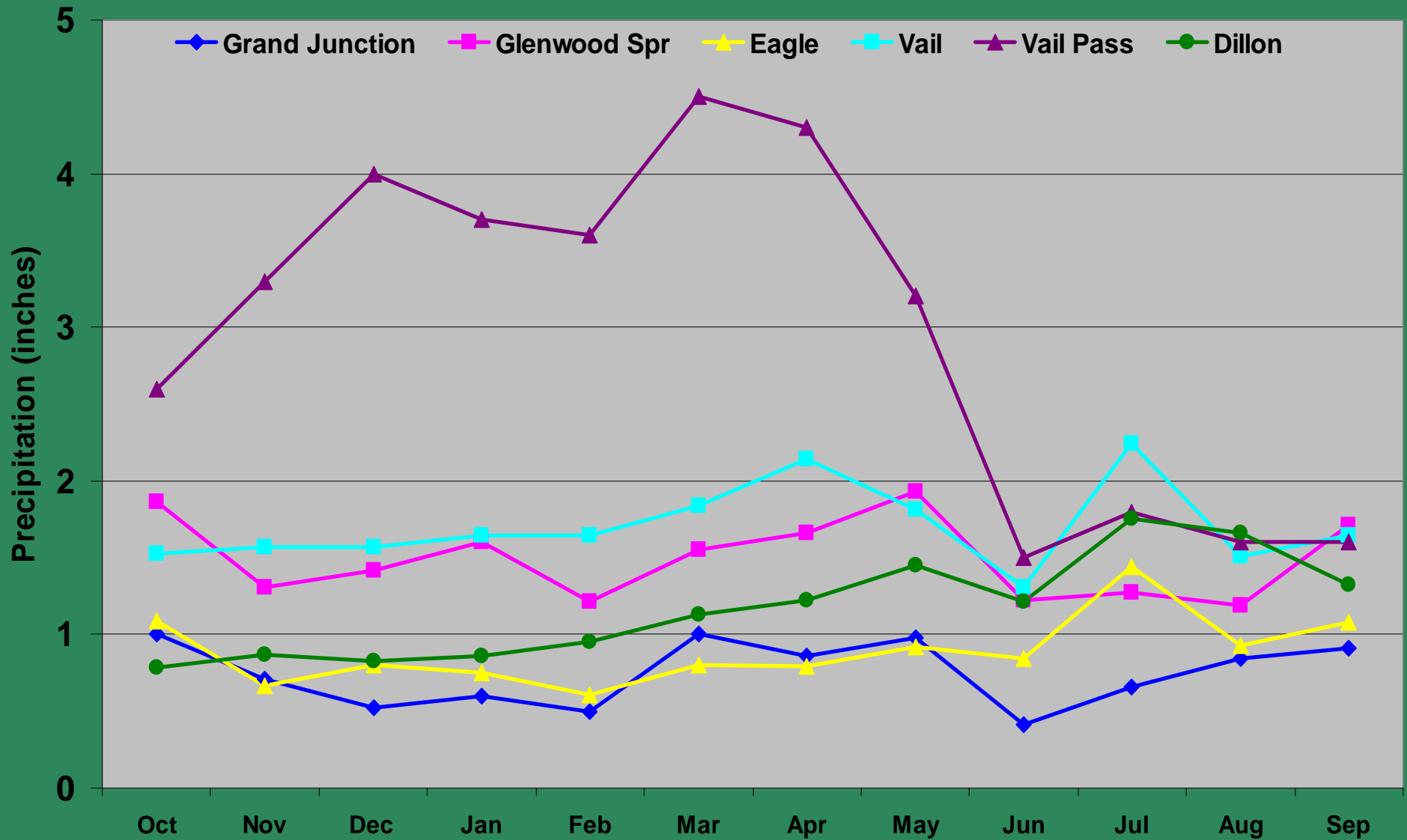


Map prepared with the PRISM climate modeling system by the Spatial Climate Analysis Service, Oregon State University.
<http://www.ocs.orst.edu/prism> Copyright (c) 2004, OSU SCAS



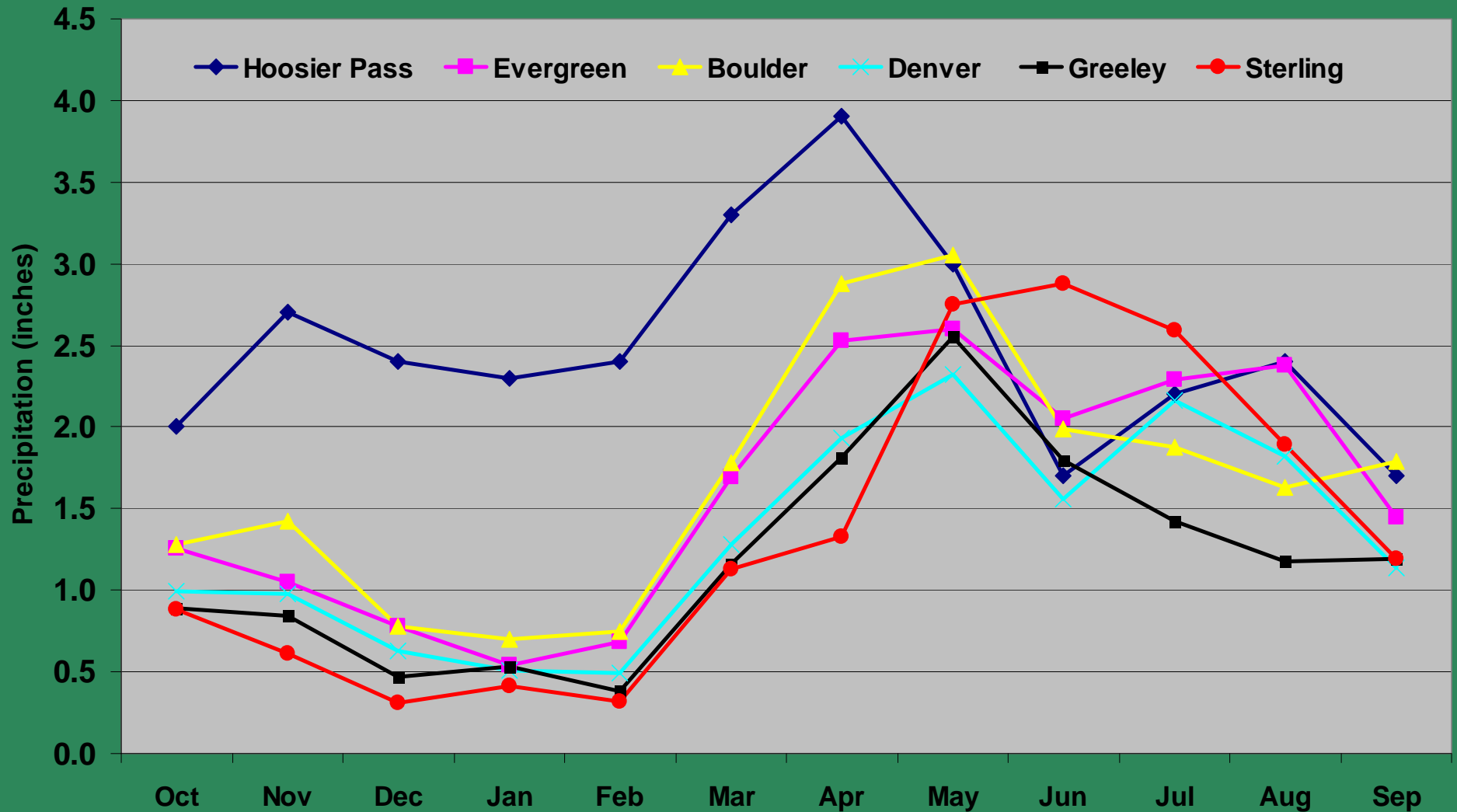
Average seasonal precipitation, I-70 transect

Water Year Average Precipitation for Selected Stations in the I-70 Transect



South Platte Basin Precipitation

Average Precipitation for Selected Stations in the South Platte Basin



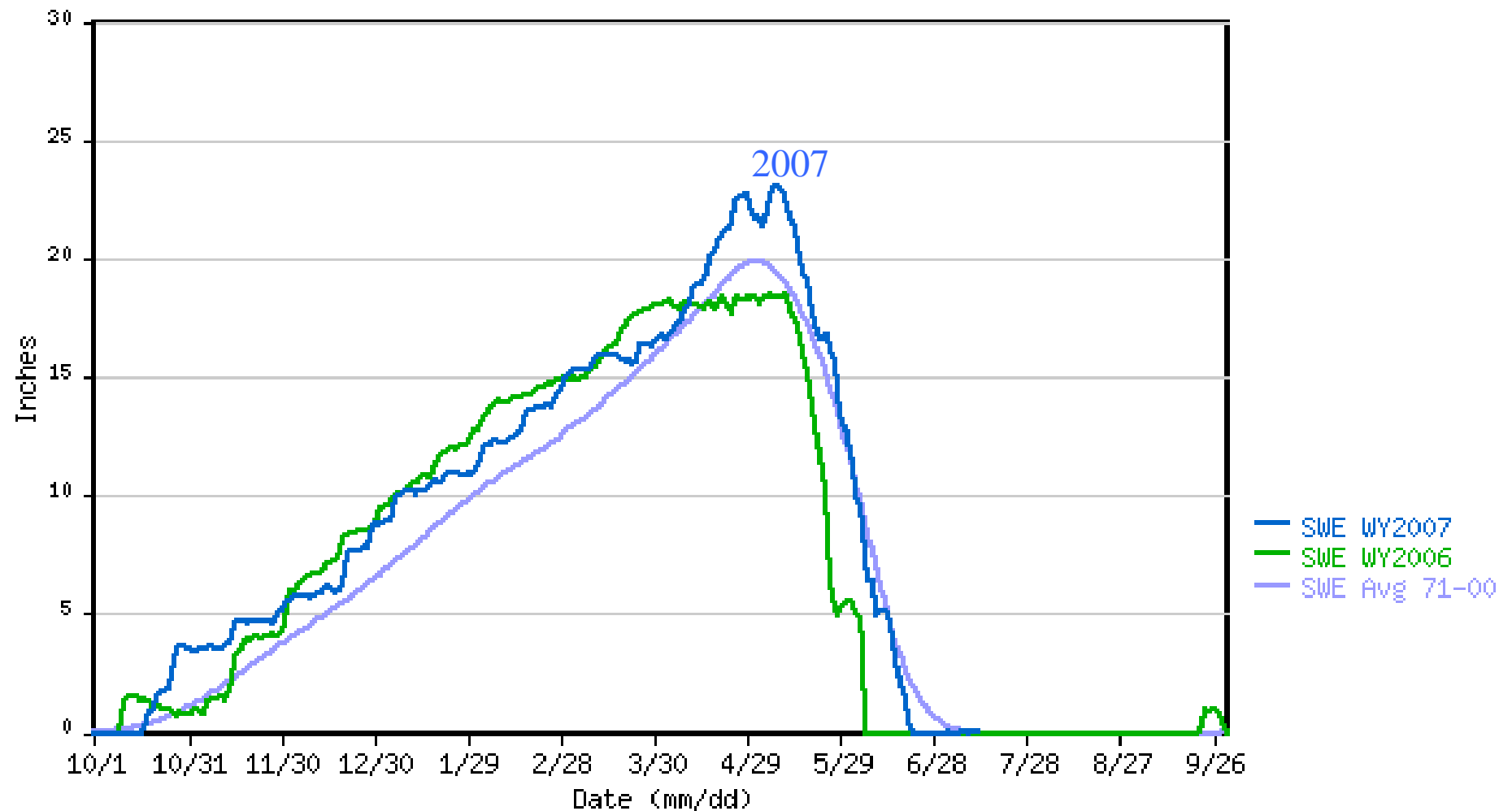
Most Surface Water Supplies in Colorado Come From Mountain Snowmelt



University Camp Snotel

UNIVERSITY CAMP SNOTEL as of 07/12/2007

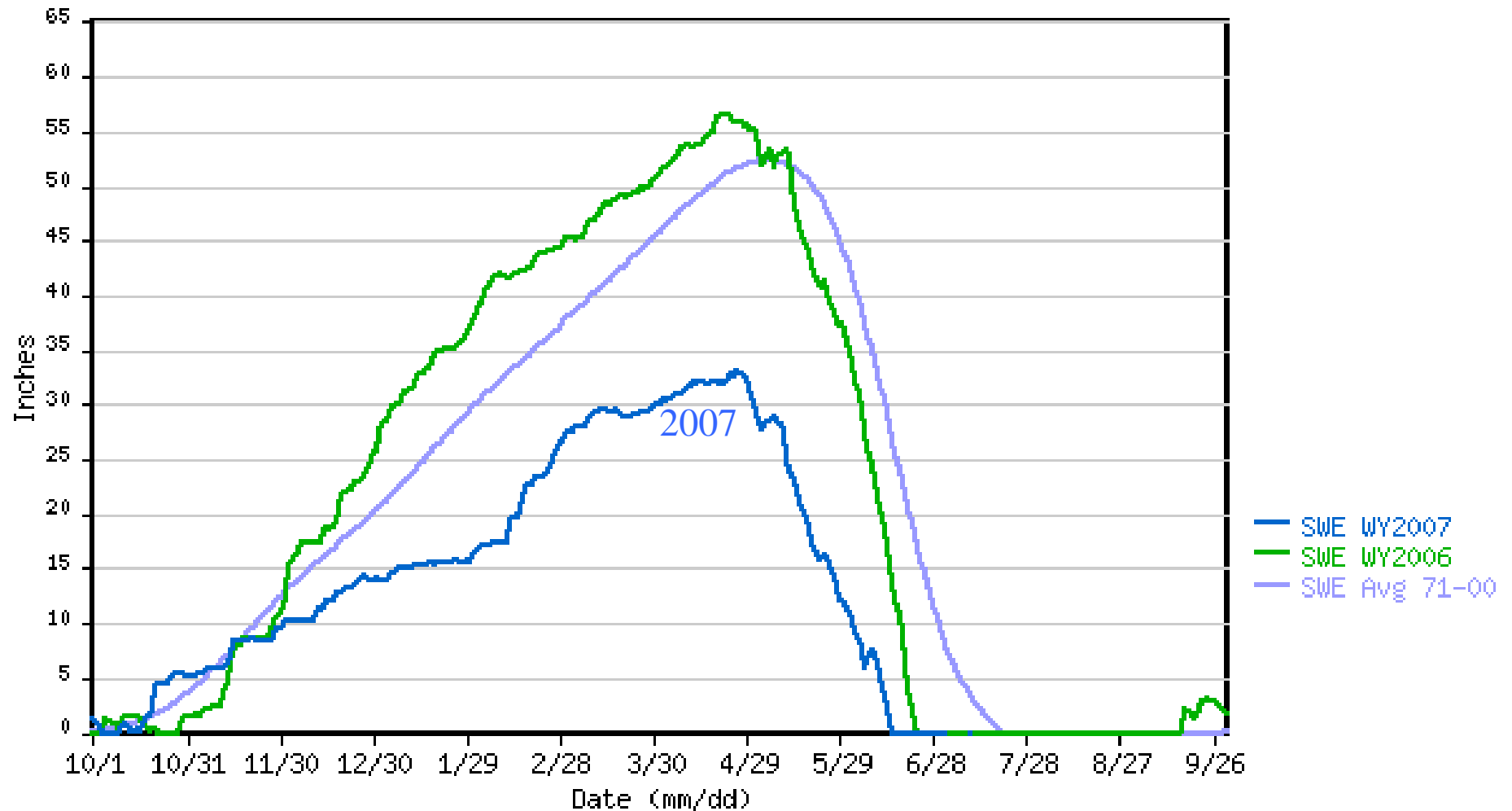
*** Provisional Data, Subject to Change ***



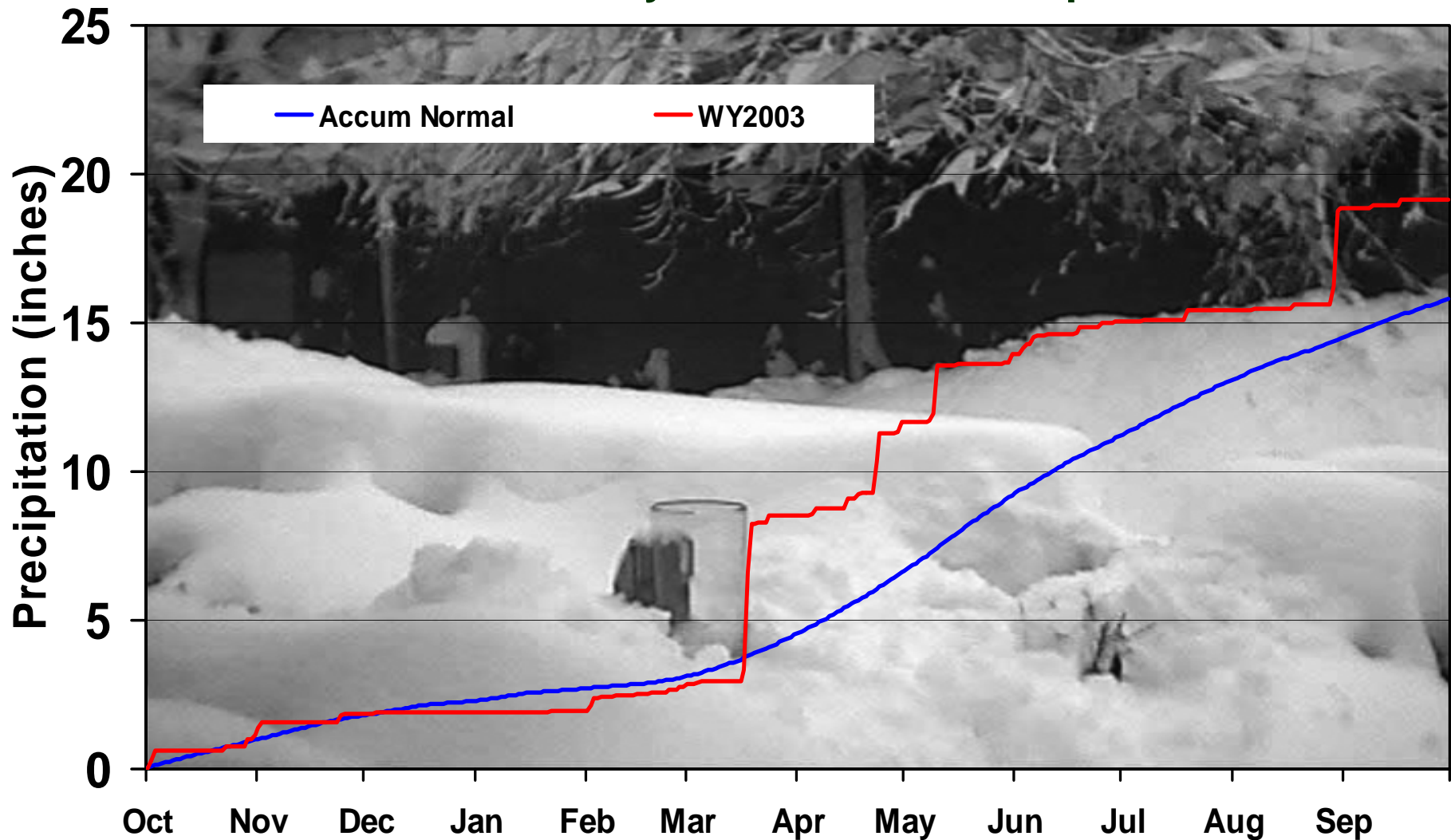
Tower Snotel

TOWER SNOTEL as of 07/12/2007

*** Provisional Data, Subject to Change ***



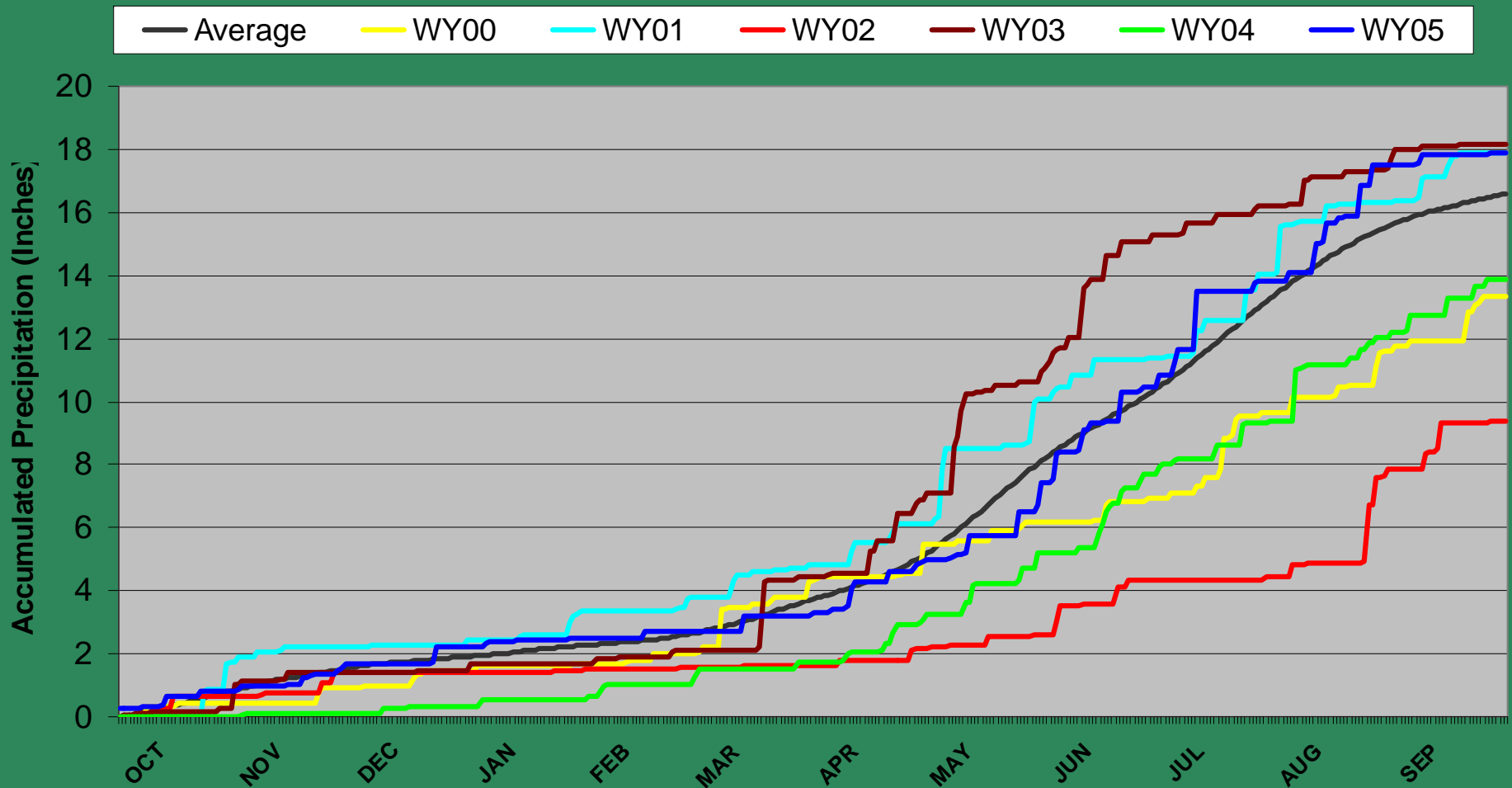
Fort Collins Daily Accumulated Precipitation

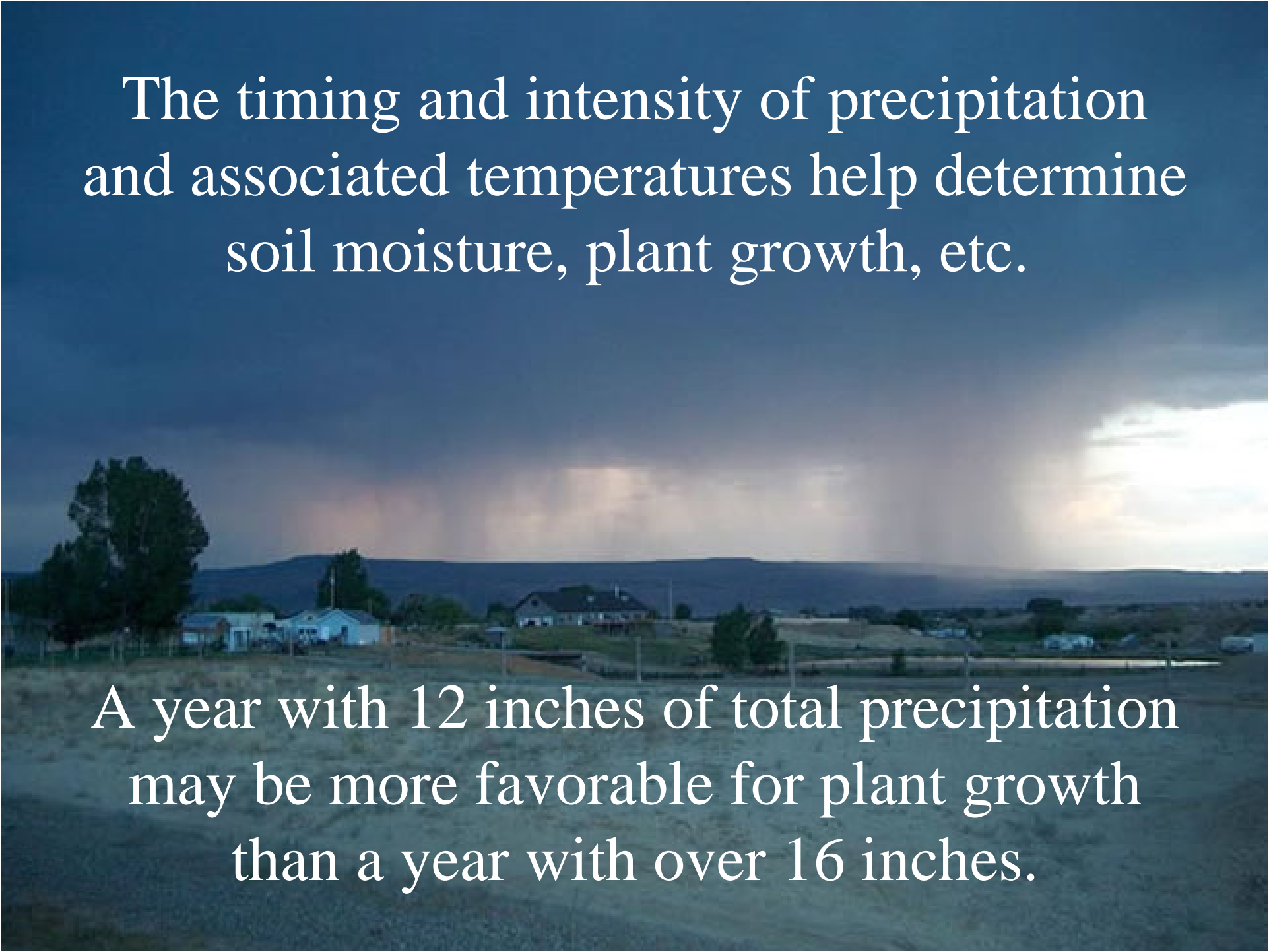


In many years, a few storms are responsible for a large fraction of the year's precipitation

No two years are ever the same

Akron 4E



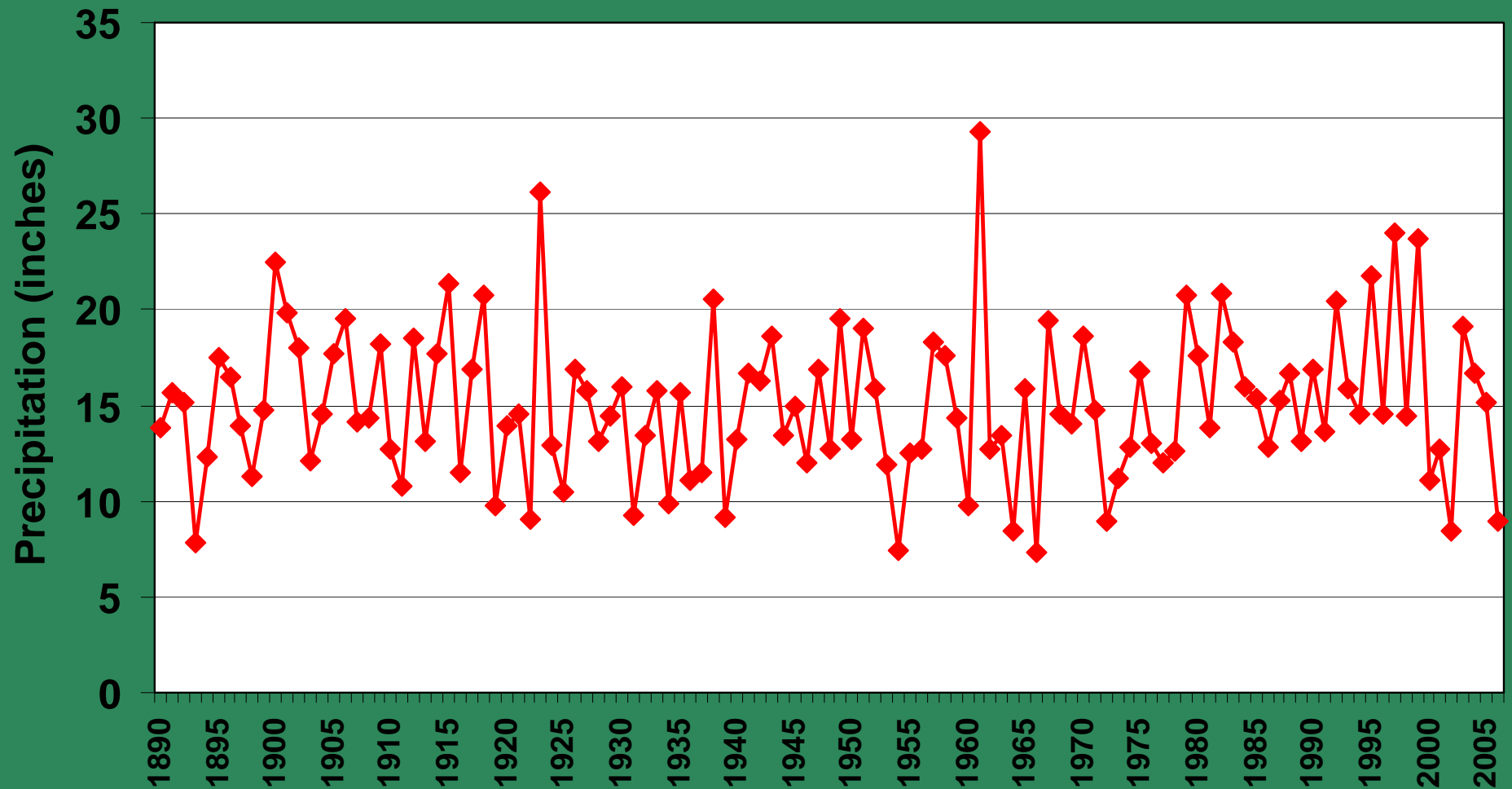


The timing and intensity of precipitation and associated temperatures help determine soil moisture, plant growth, etc.

A year with 12 inches of total precipitation may be more favorable for plant growth than a year with over 16 inches.

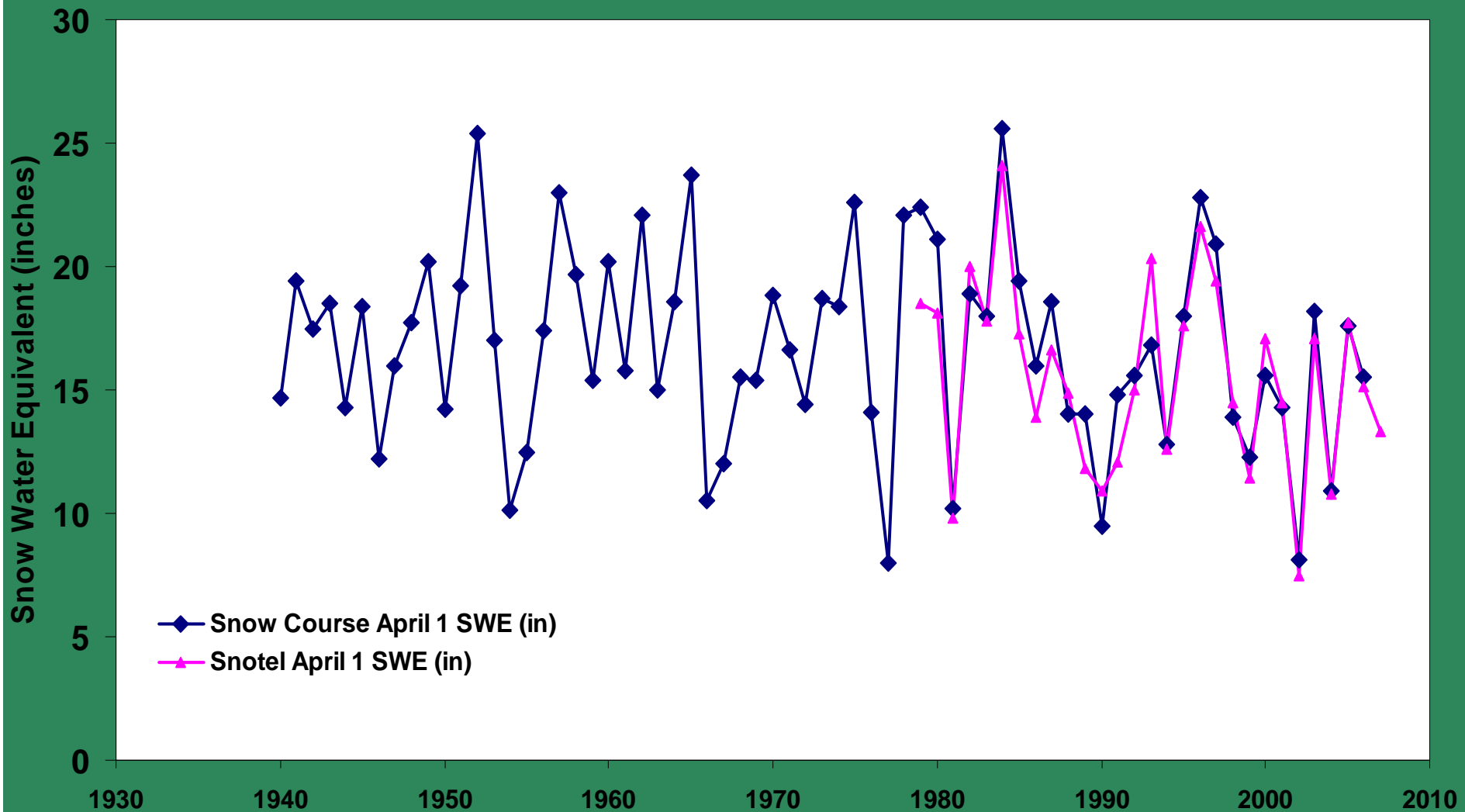
Precipitation varies greatly from year to year

**Fort Collins Total Water Year Precipitation
(1890 through 2006)**



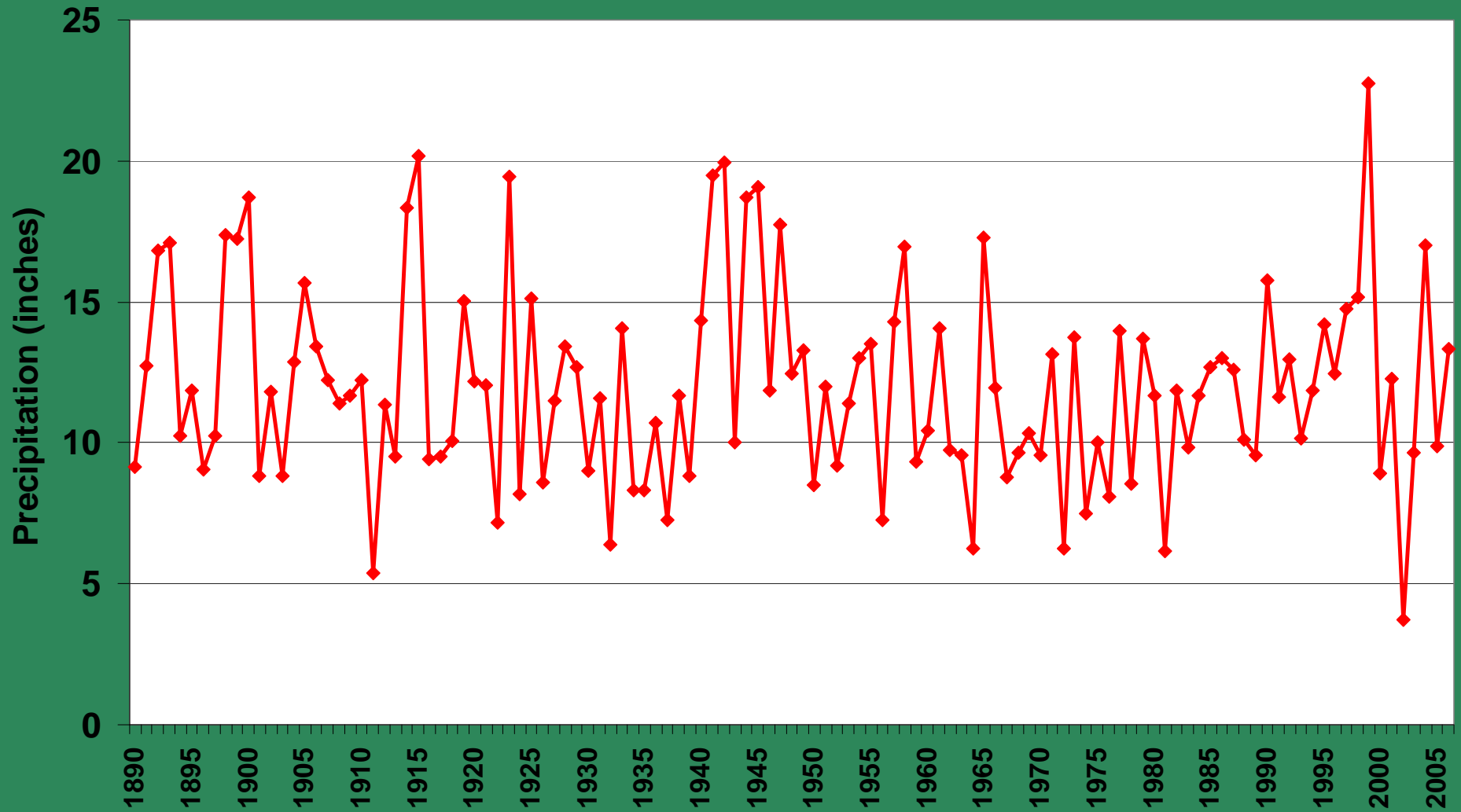
Porphyry Creek Mountain Snowpack

Porphyry Creek, CO (Elevation 10,760') April 1 SWE (in)



Rocky Ford Precipitation

Rocky Ford Water Year (Oct-Sep) Precipitation
from 1890 through 2006



Drought is a frequent visitor to Colorado



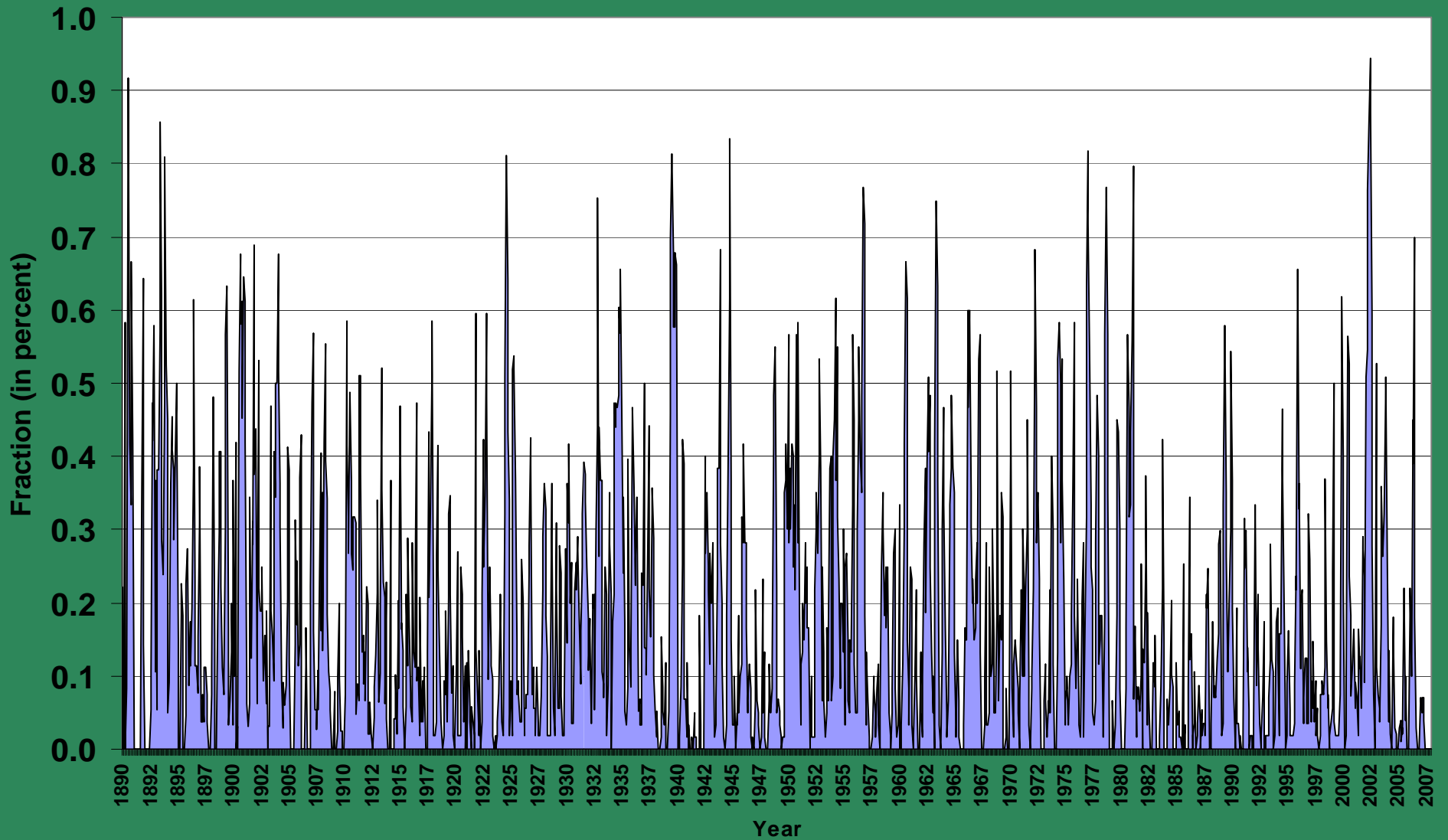
John Haynes

Cheyenne Wells, CO 2002

Fraction of Colorado in Drought

Based on 3 month SPI

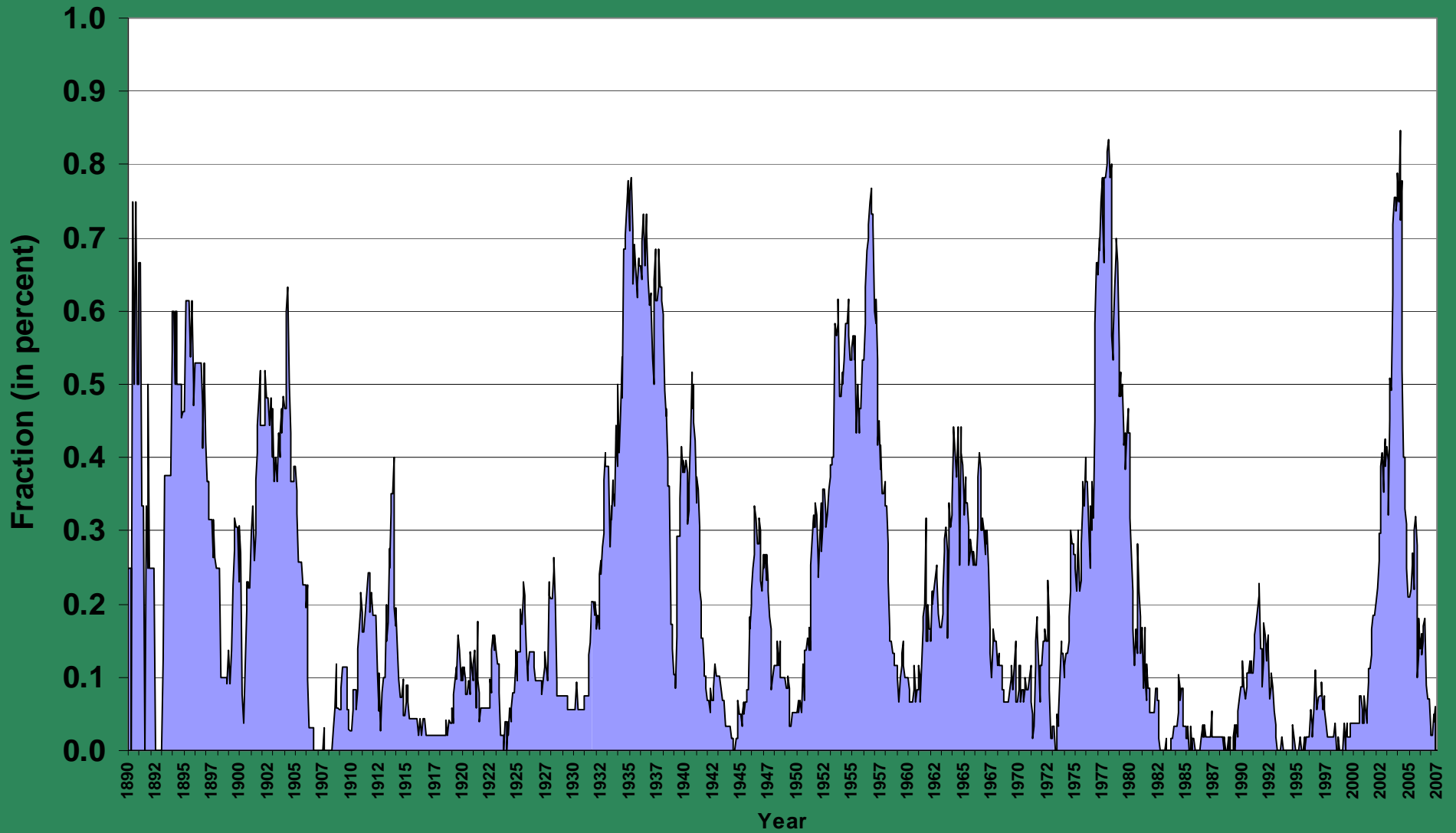
(1890 - May 2007)



Fraction of Colorado in Drought

Based on 48 month SPI

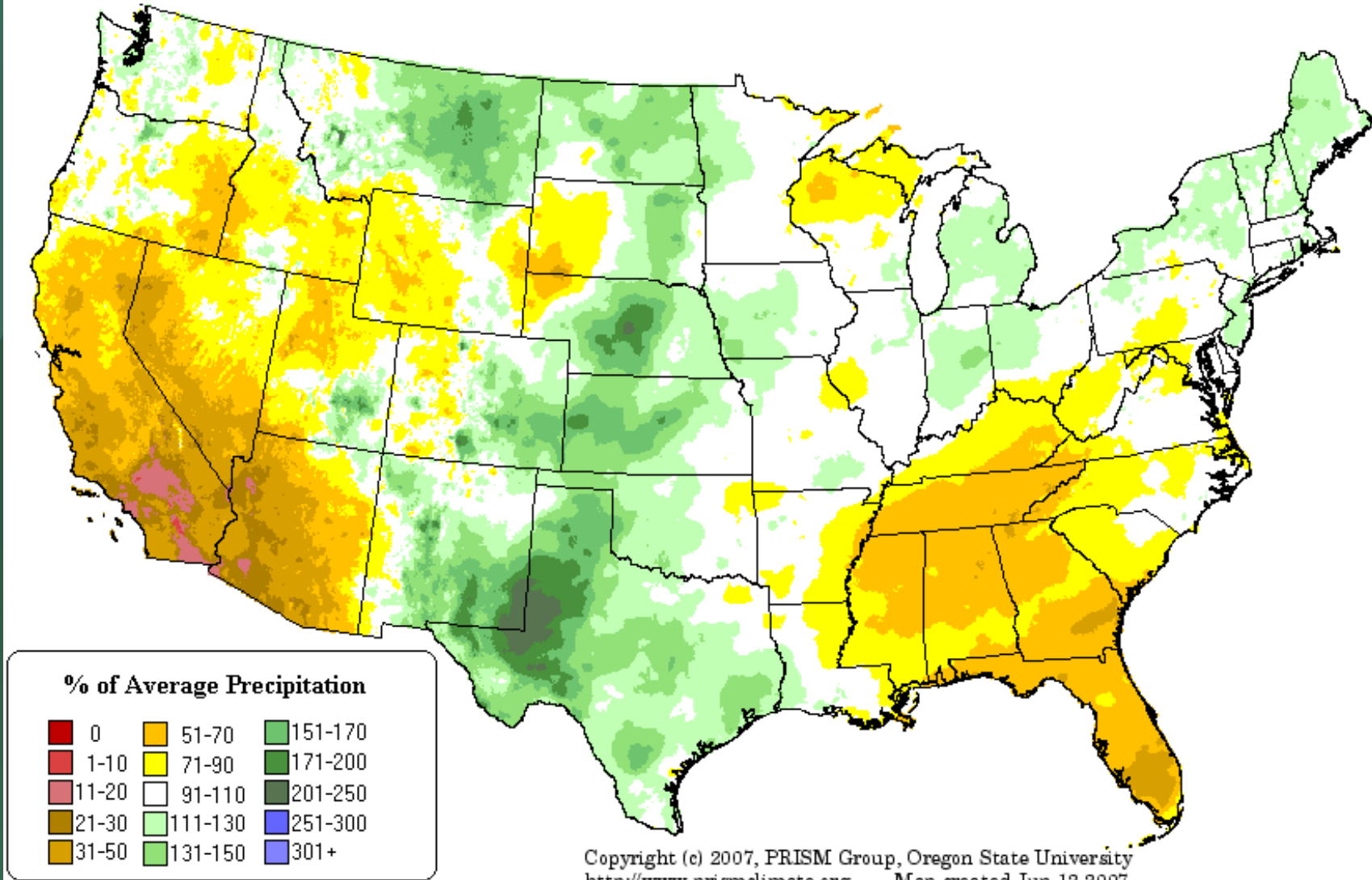
(1890 - May 2007)



Current Status

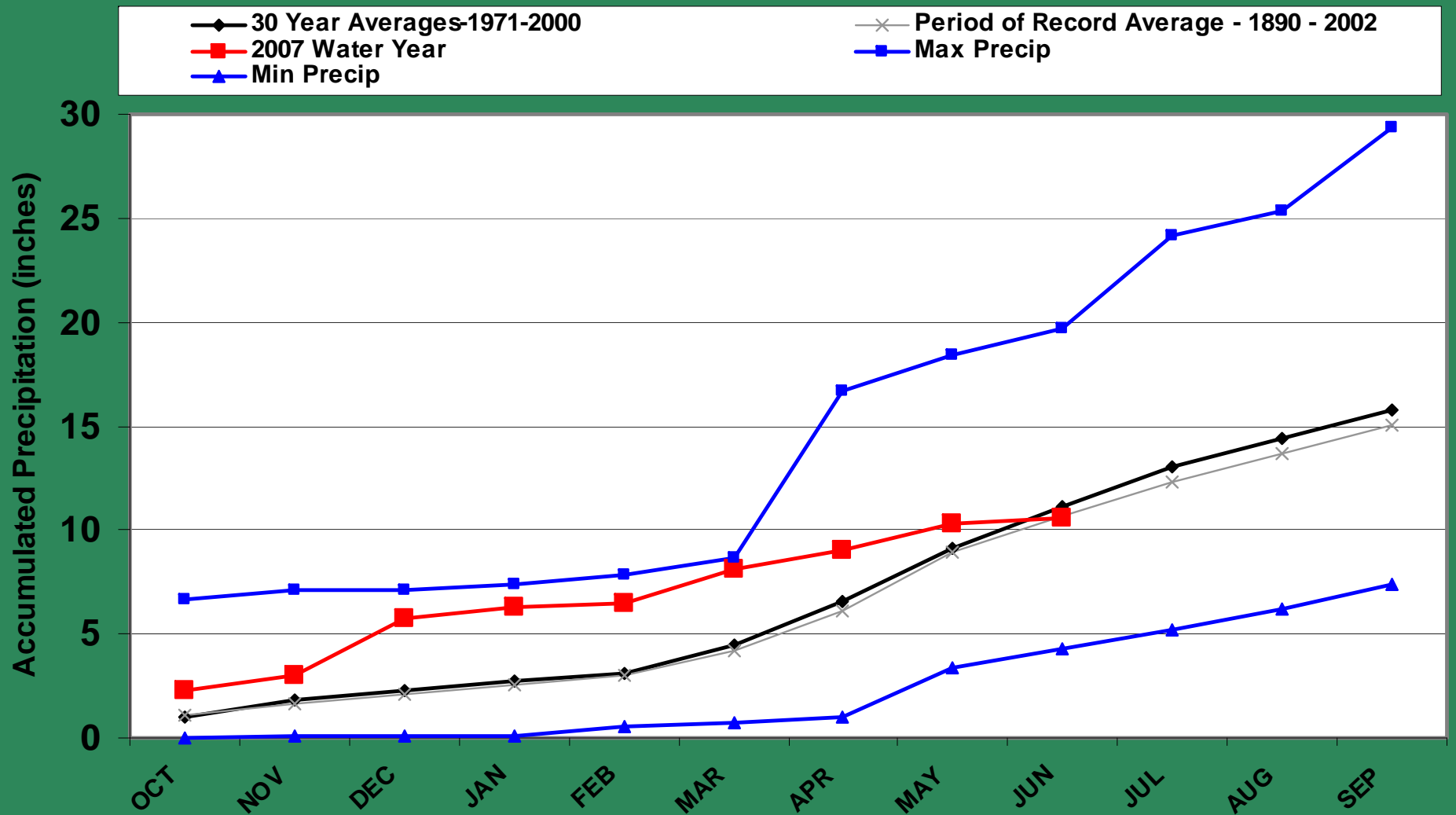
<http://www.prismclimate.org>

8-month Percent of Average Precipitation: May 2007 Provisional Data



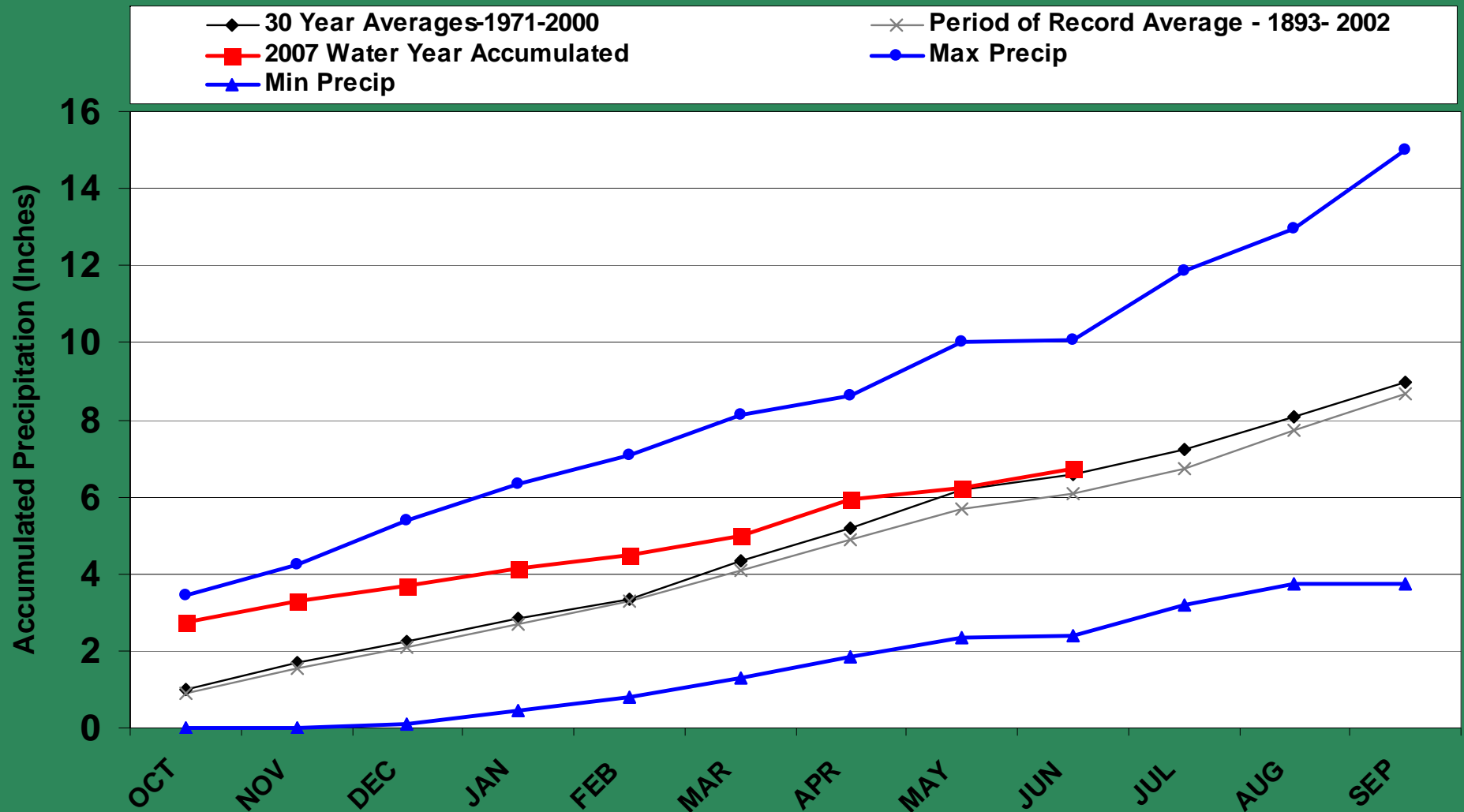
Fort Collins

Fort Collins 2007 Water Year



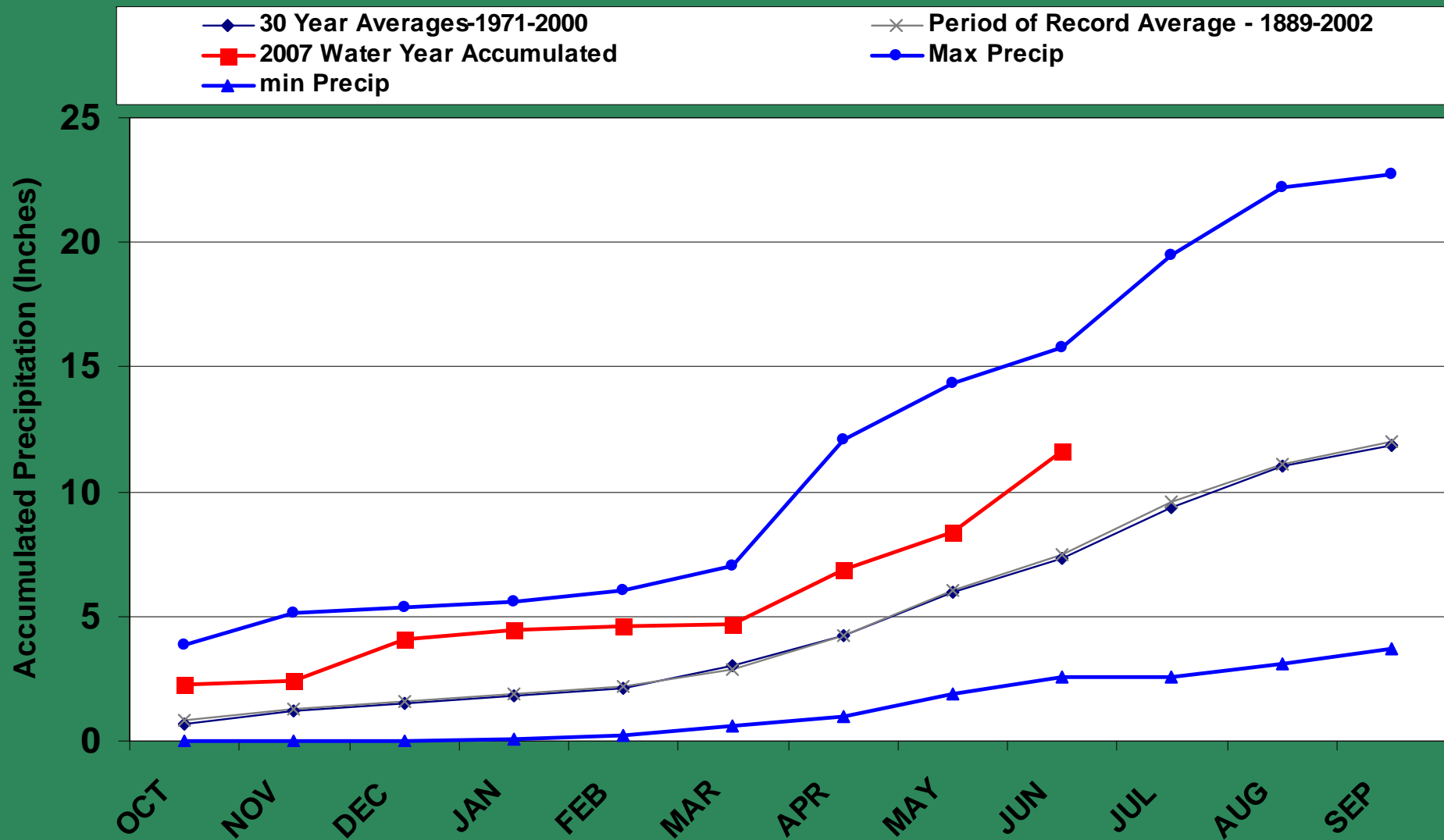
Grand Junction

Grand Junction WSFO 2007 Water Year



Rocky Ford

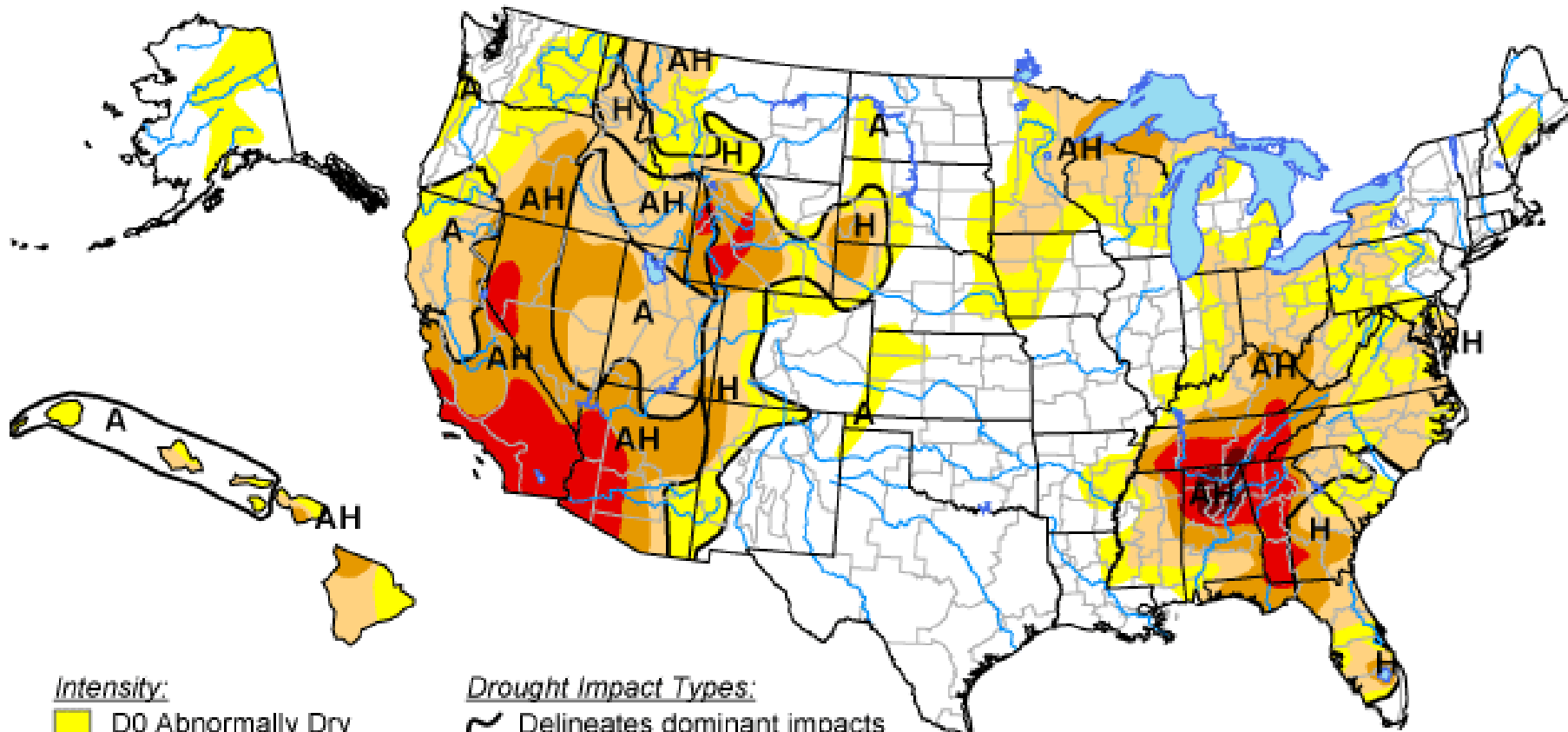
Rocky Ford 2007 Water Year








U.S. Drought Monitor

July 10, 2007


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)

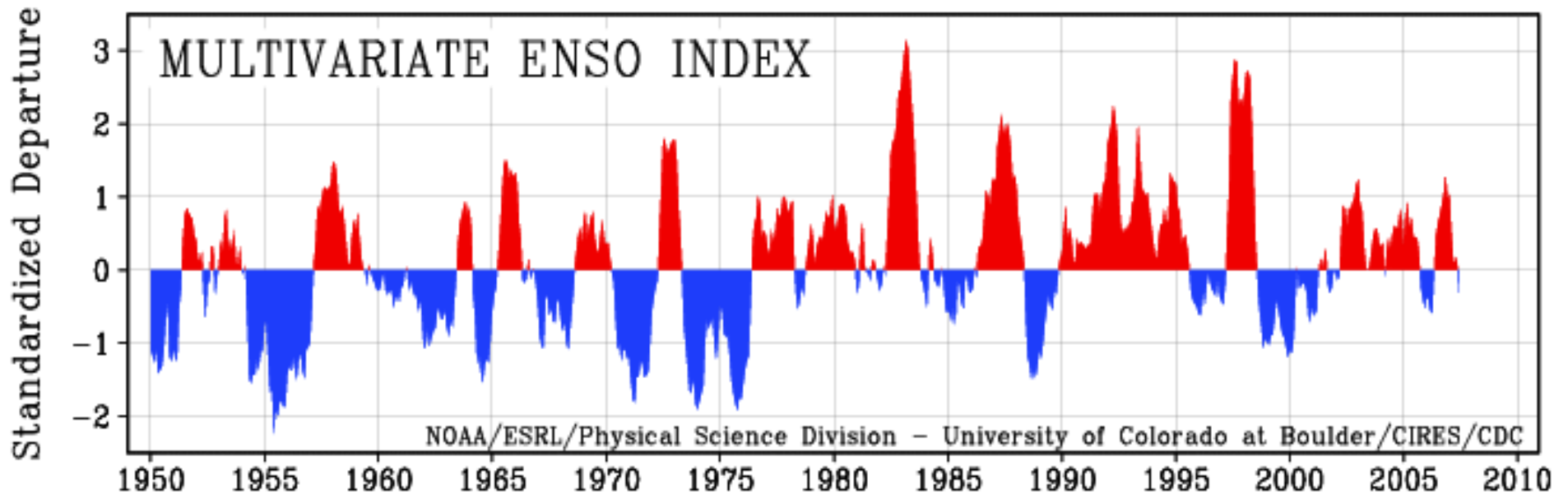
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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



Released Thursday, July 12, 2007
Author: Douglas Le Comte, CPC/NOAA

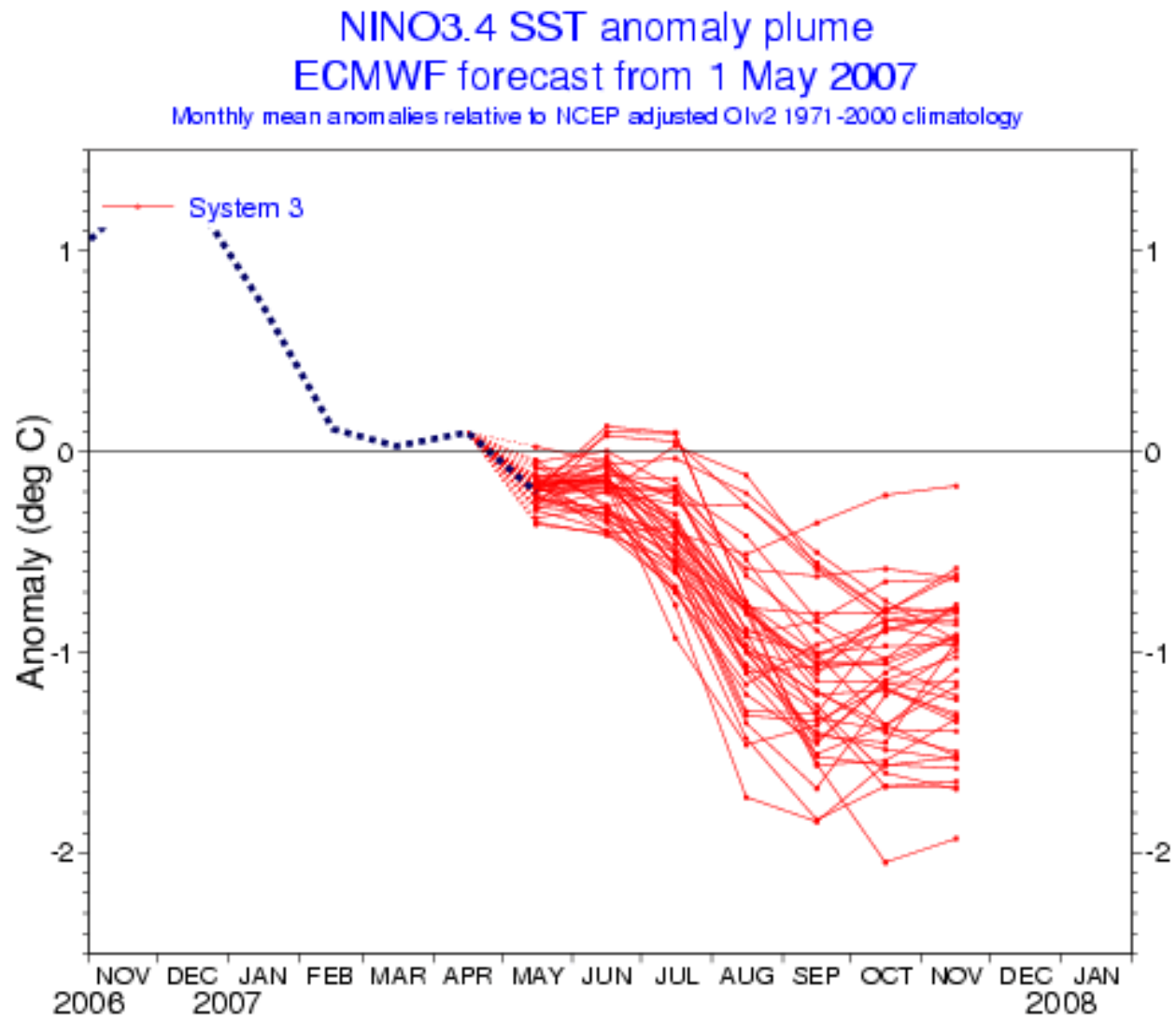
Long range prediction of precipitation weeks and months in advance is *NOT EASY*



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

El Nino Forecast

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

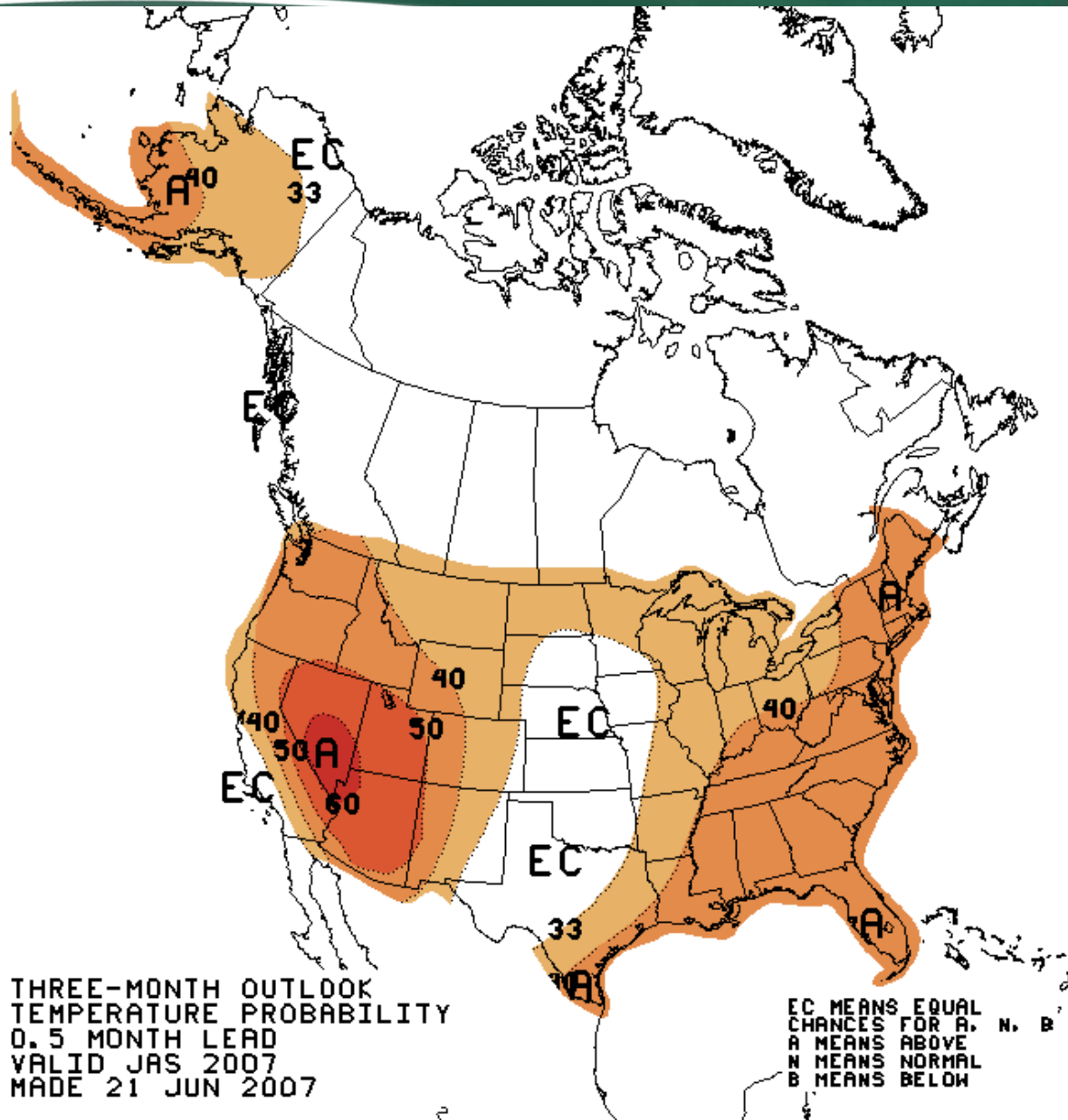


Forecast issue date: 15 May 2007

ECMWF

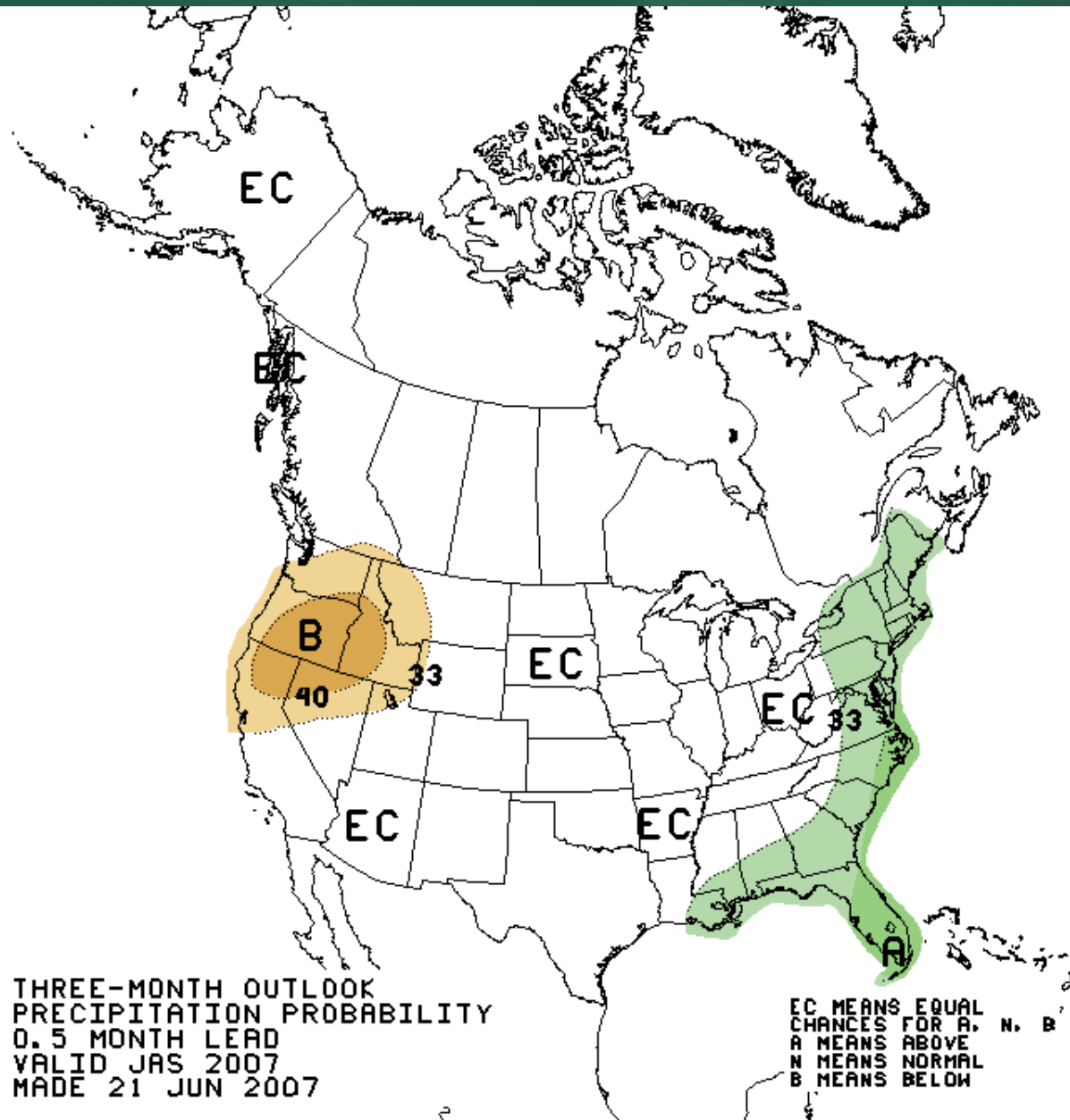
July-Sept Temperature

<http://www.cpc.ncep.noaa.gov/products/predictions/30day/>

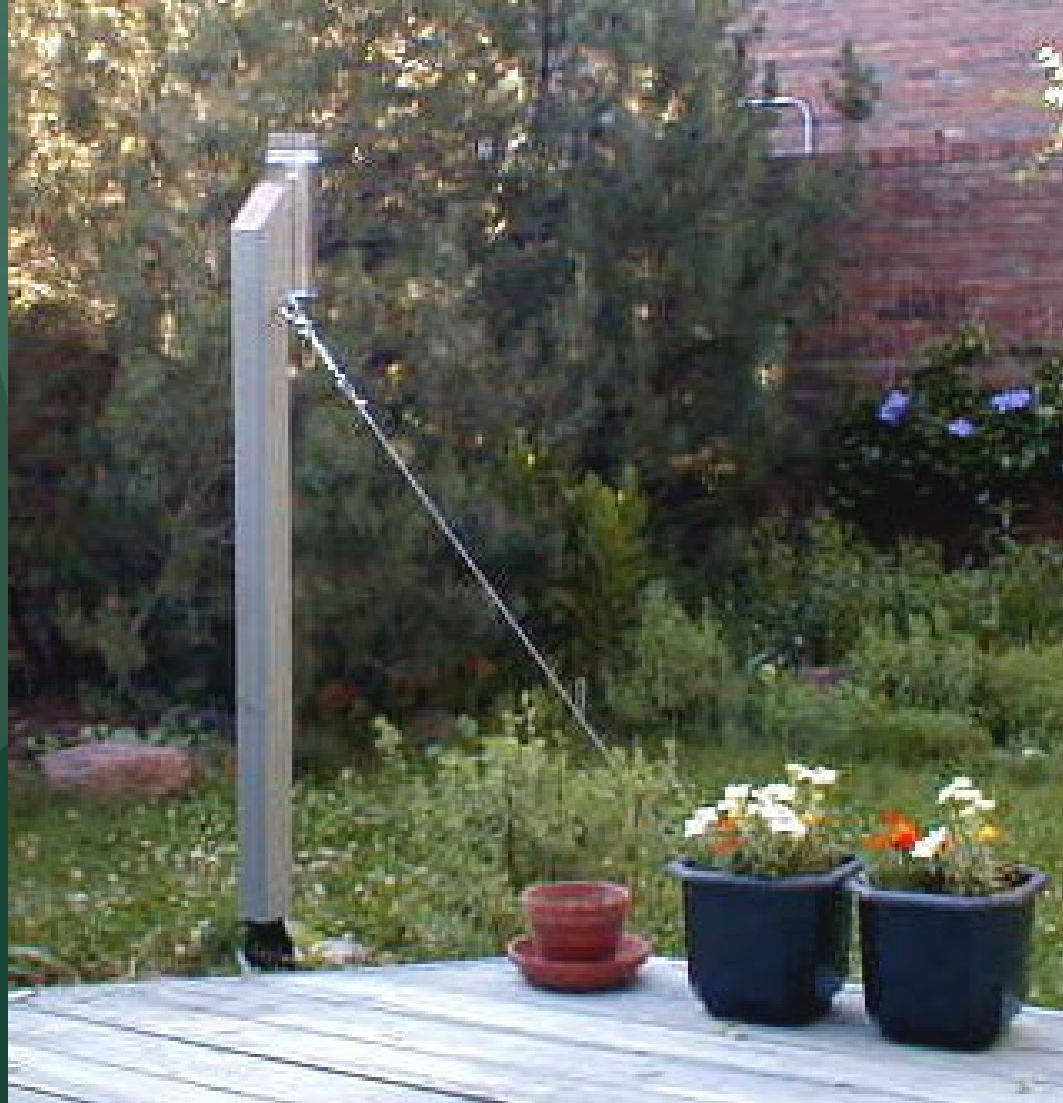


July-Sept Precipitation

<http://www.cpc.ncep.noaa.gov/products/predictions/30day/>



Master Gardeners Can Also Assist Climatologists





Rain!



Hail!



Snow!

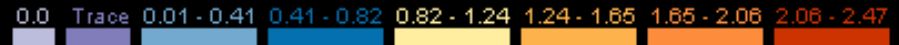
CoCoRaHS (Community Collaborative Rain, Hail and Snow) – A simple but effective way to help scientists track Colorado Climate



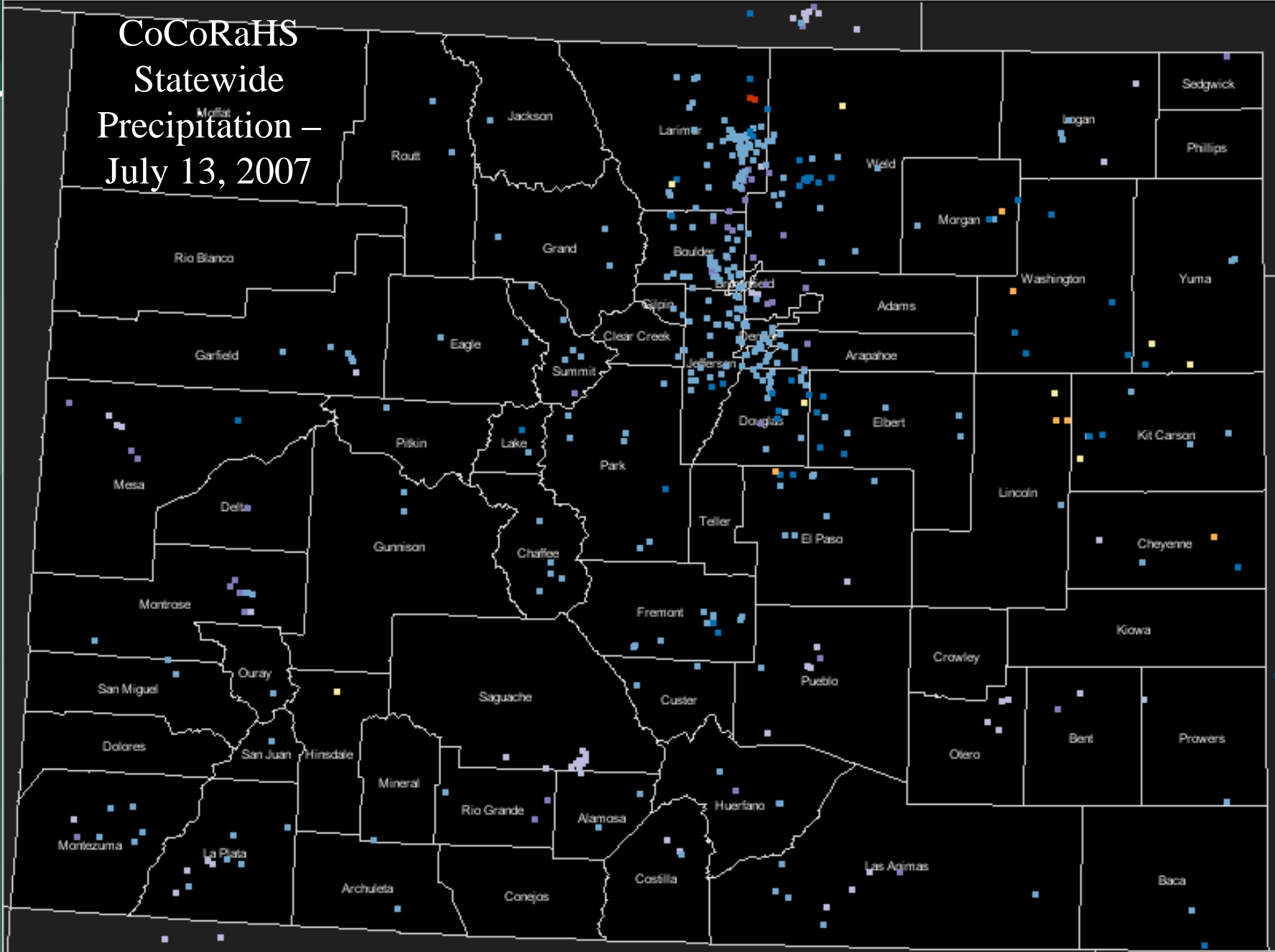
<http://www.cocorahs.org>

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

Colorado 7/13/2007

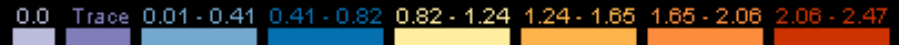


CoCoRaHS Statewide Precipitation – July 13, 2007

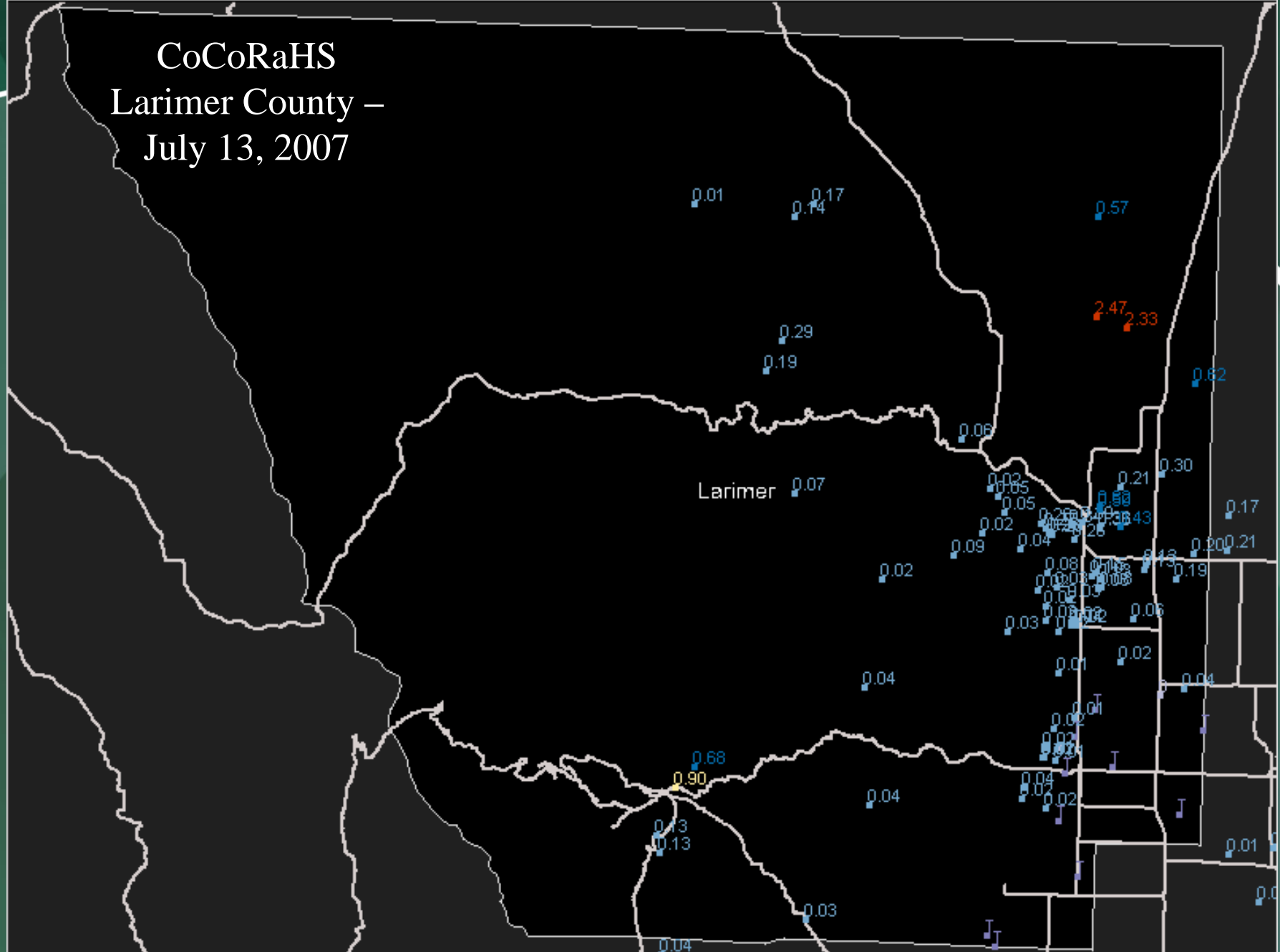


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Larimer County, Colorado 7/13/2007



CoCoRaHS
Larimer County –
July 13, 2007





Join Us!

Visit the CoCoRaHS Web Site

<http://www.cocorahs.org>



Support for this project provided by NOAA Environmental Literacy Program and many local charter sponsors.

Colorado Climate Center

Data and Power Point Presentations available for downloading

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

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

