

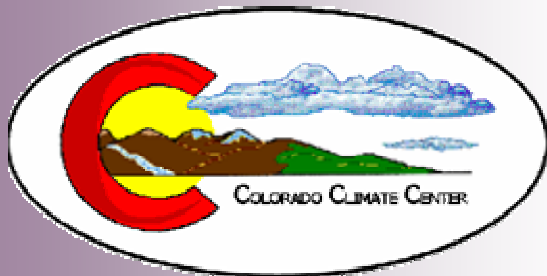
2003 Moisture Outlook

Nolan Doesken and Roger Pielke, Sr.

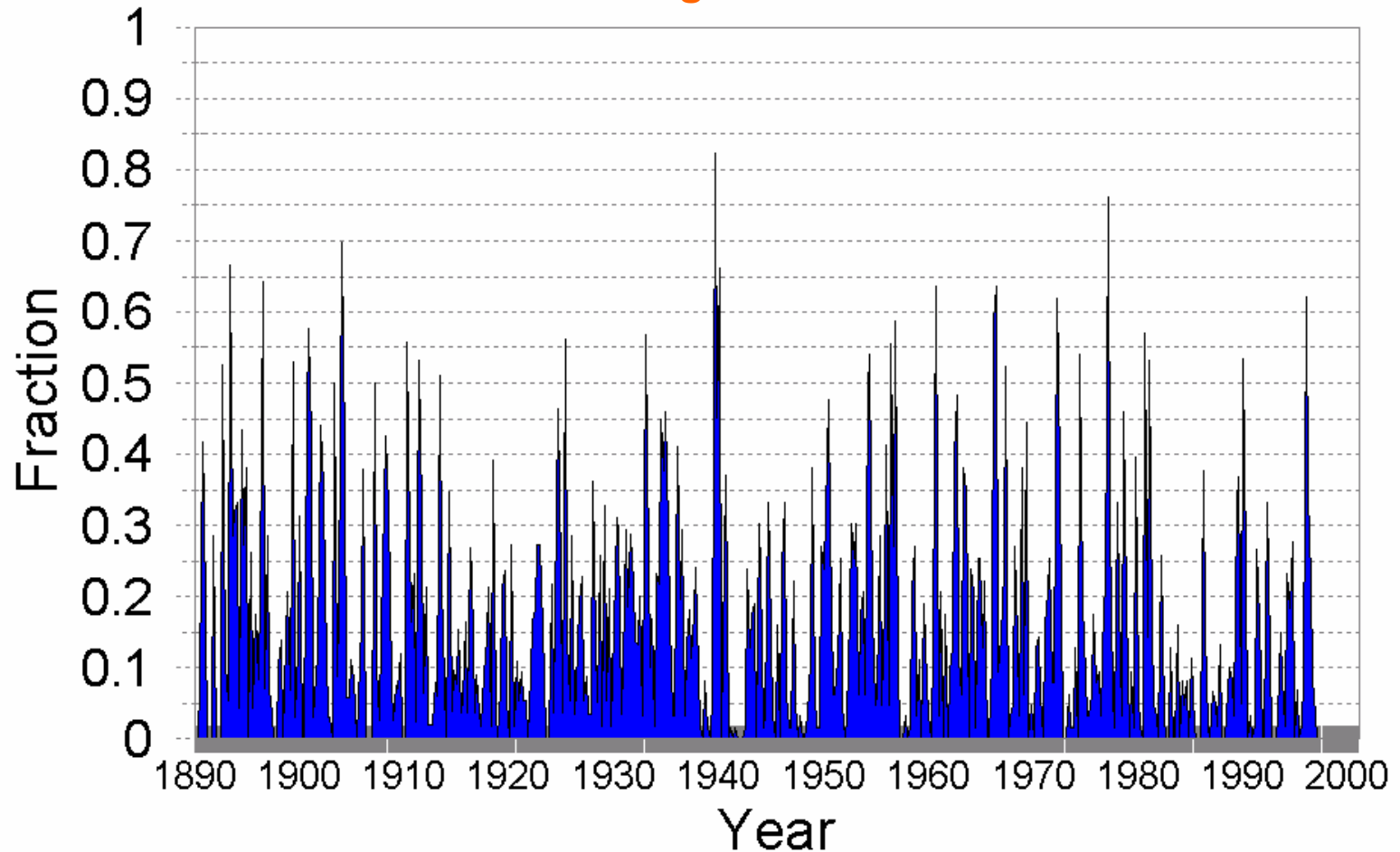
Colorado Climate Center

Prepared by Tara Green and Odie Bliss

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

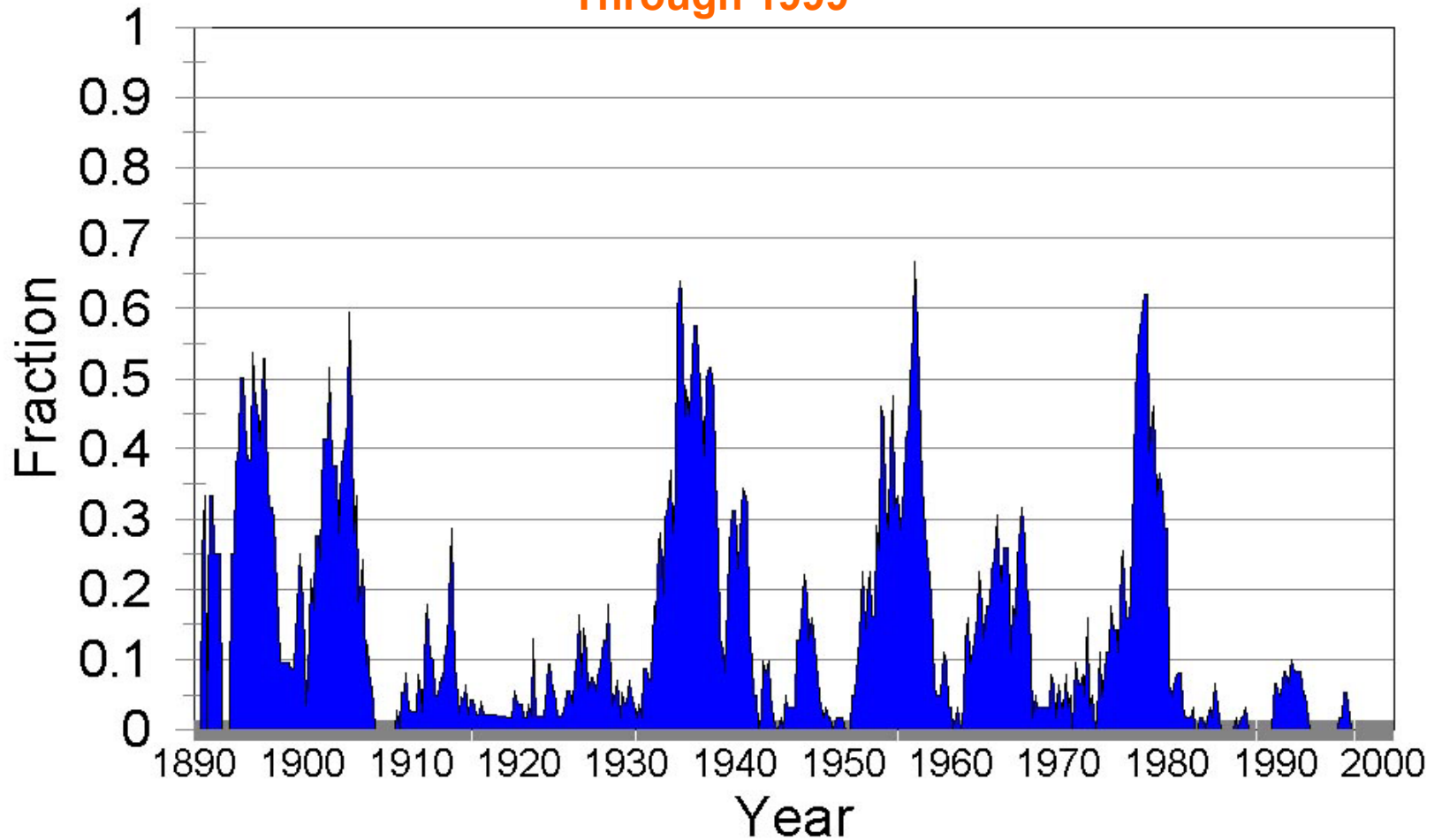


Fraction of Colorado in Drought Based on 3-month SPI Through 1999

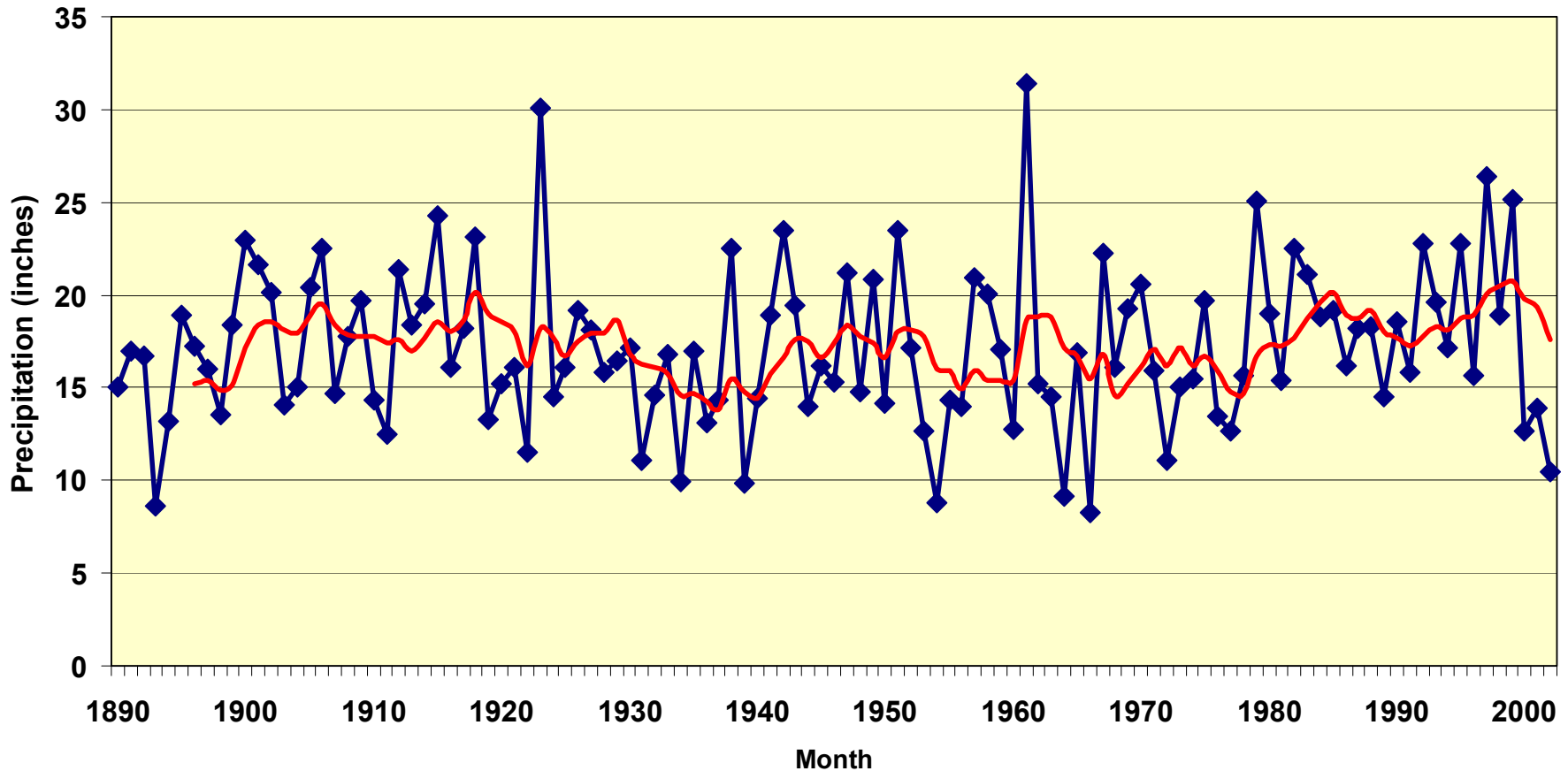


Fraction of Colorado in Drought Based on 48-month SPI

Through 1999

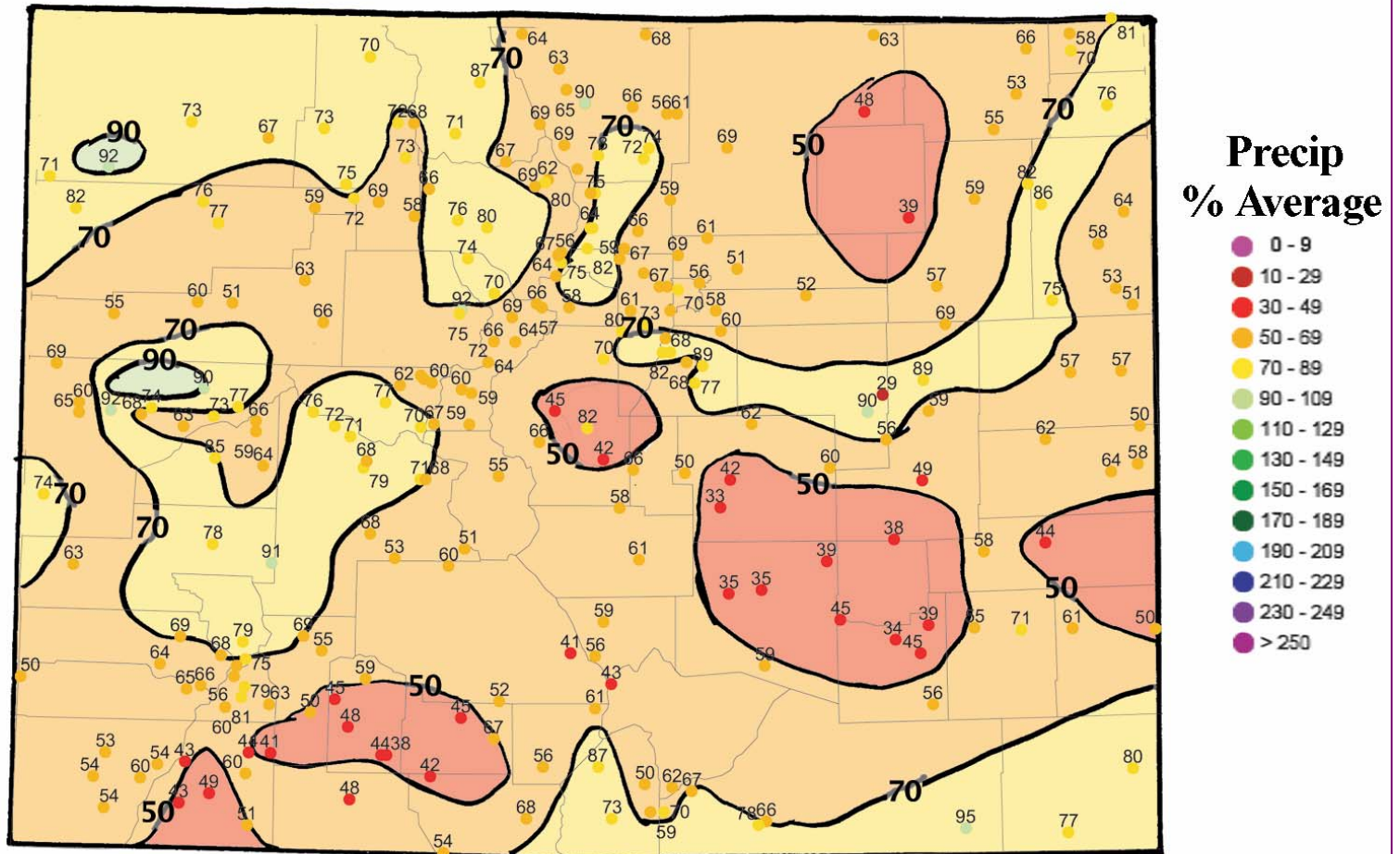


Fort Collins Total Water Year Precipitation (Oct-Sep)



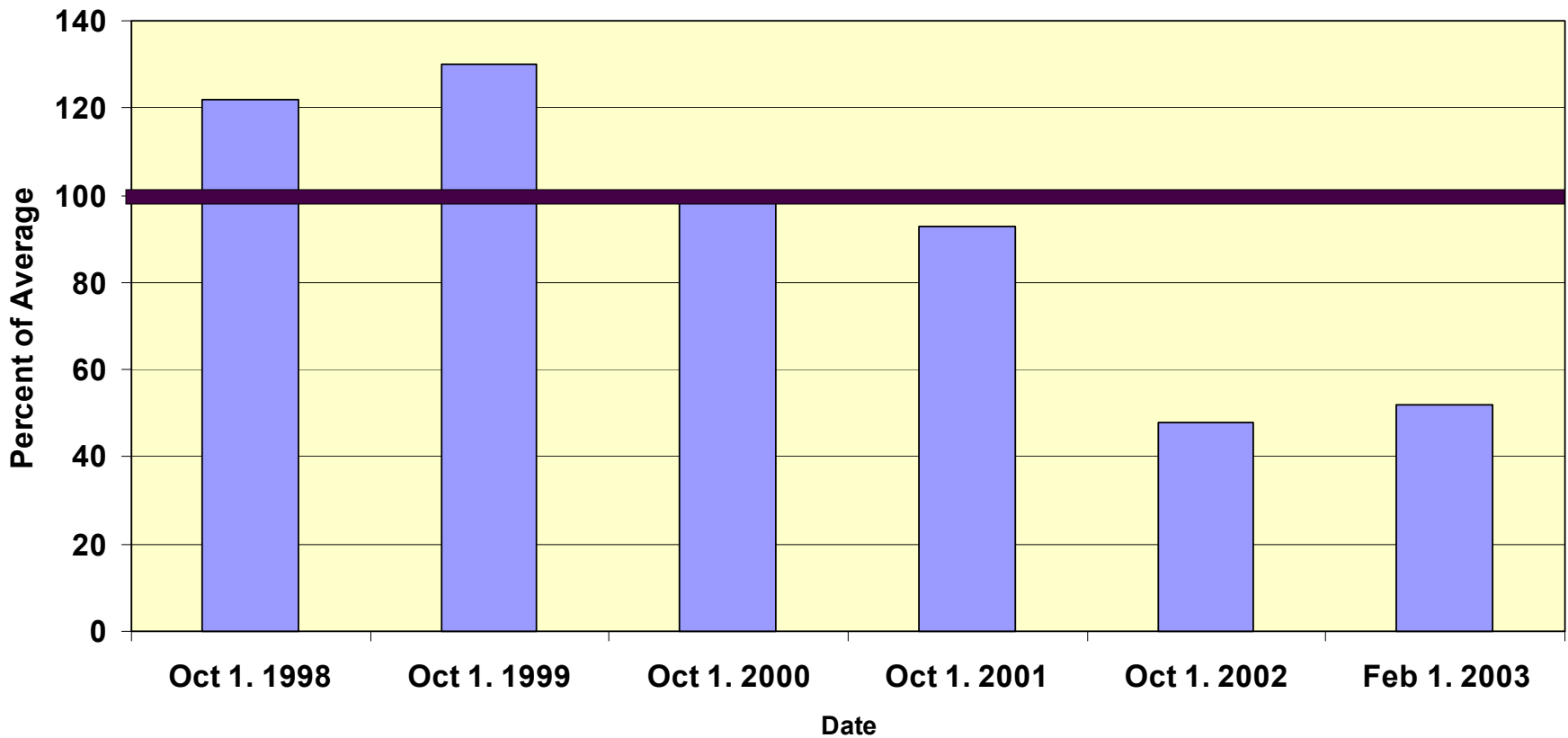
Water Year 2002 (Oct. 2001 - Sept. 2002)

Precipitation Percent of Average for 1961-1990 Averages



Reservoir Storage

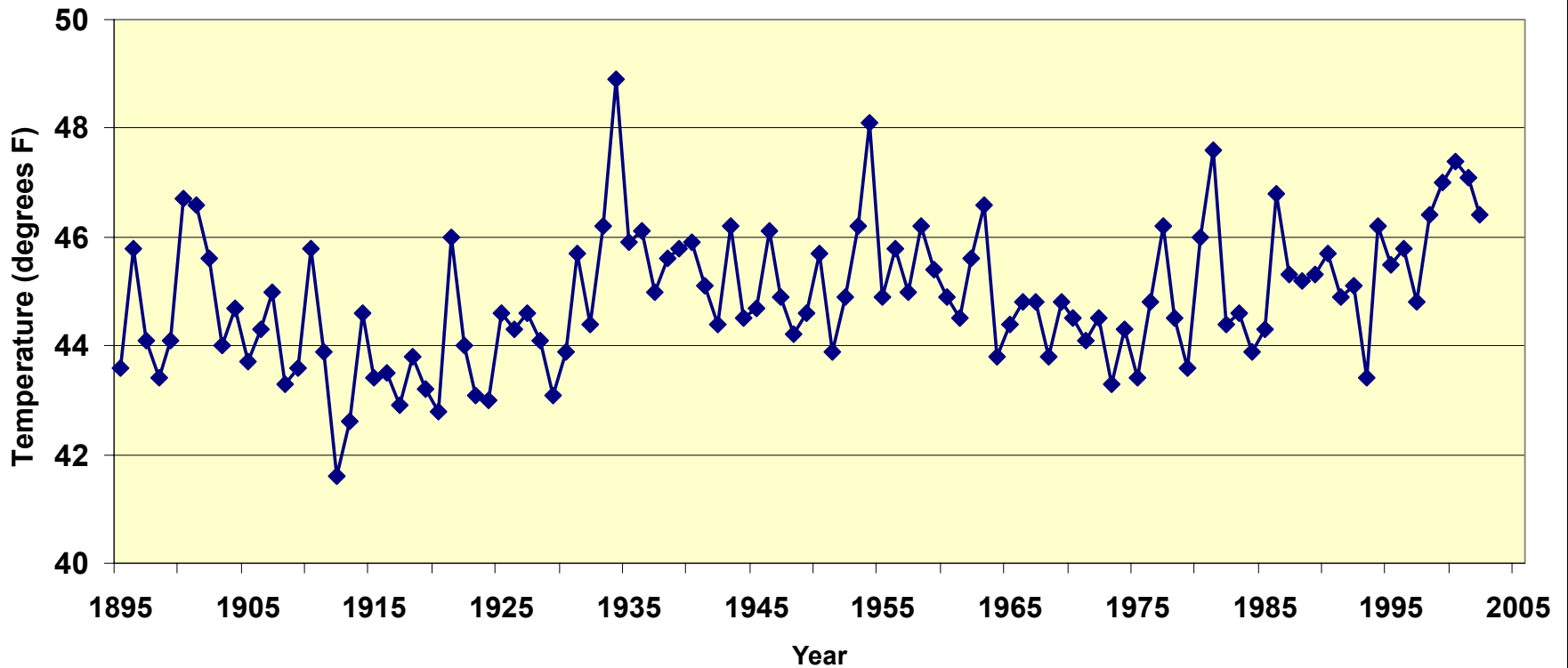
Statewide Reservoir Levels for Colorado



Provisional Data Provided by NRCS

Colorado Statewide Annual Temperatures through 2002

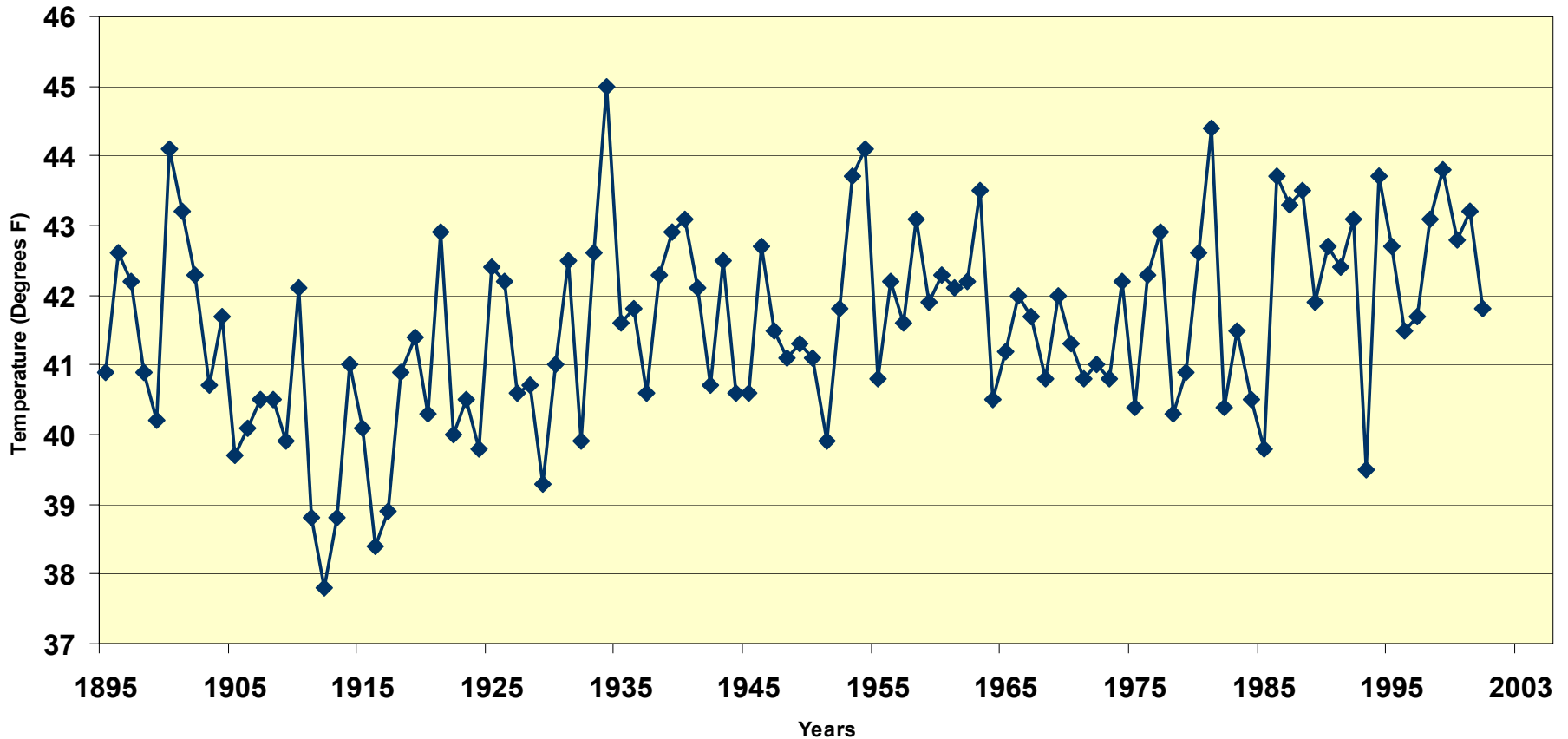
Colorado Average Annual Temperature
(1895 - 2002)



From NOAA, National Climatic Data Center

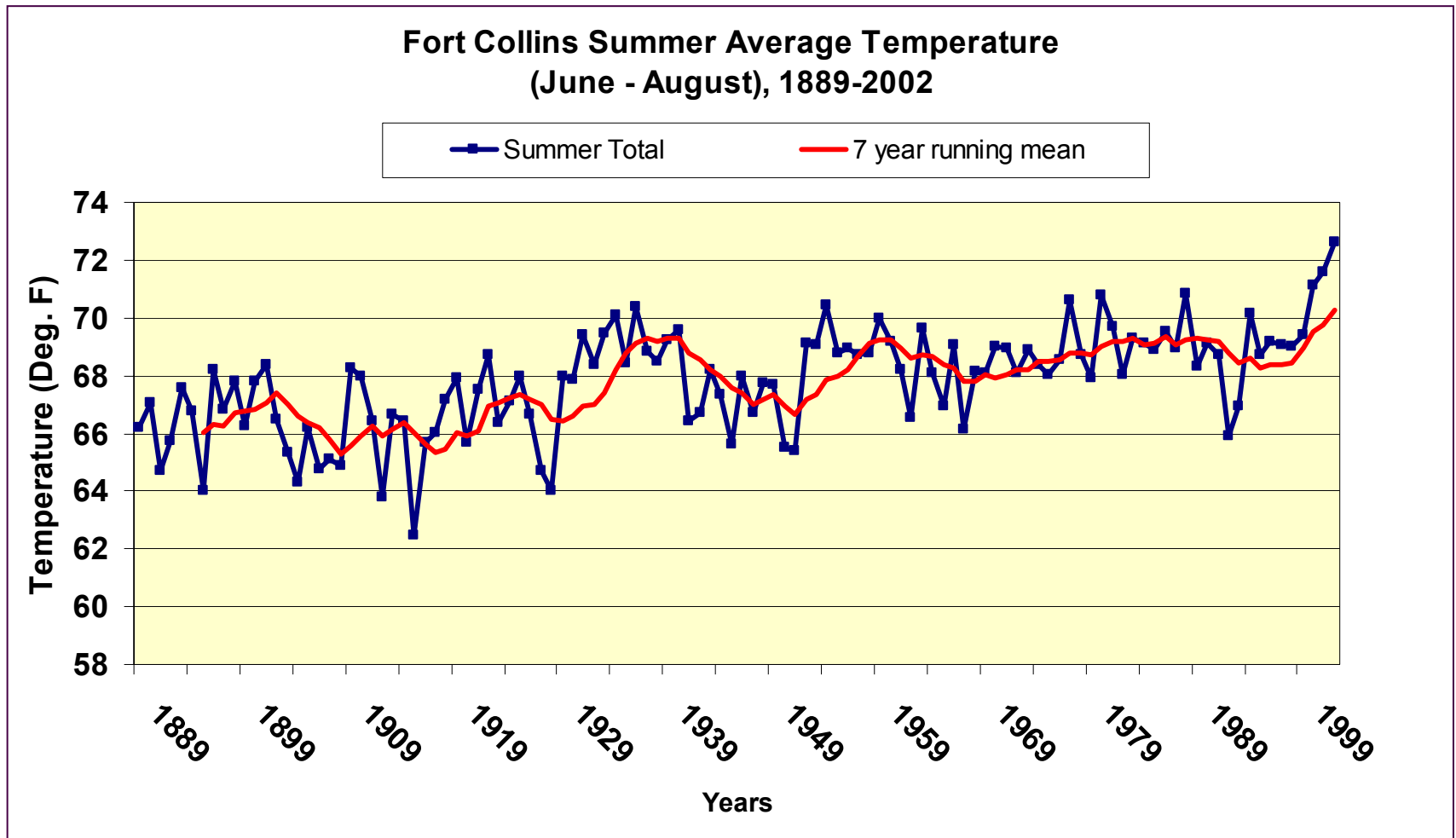
Wyoming Statewide Annual Temperatures through 2002

Wyoming Average Annual Temperature
(1895 - 2002)



From NOAA, National Climatic Data Center

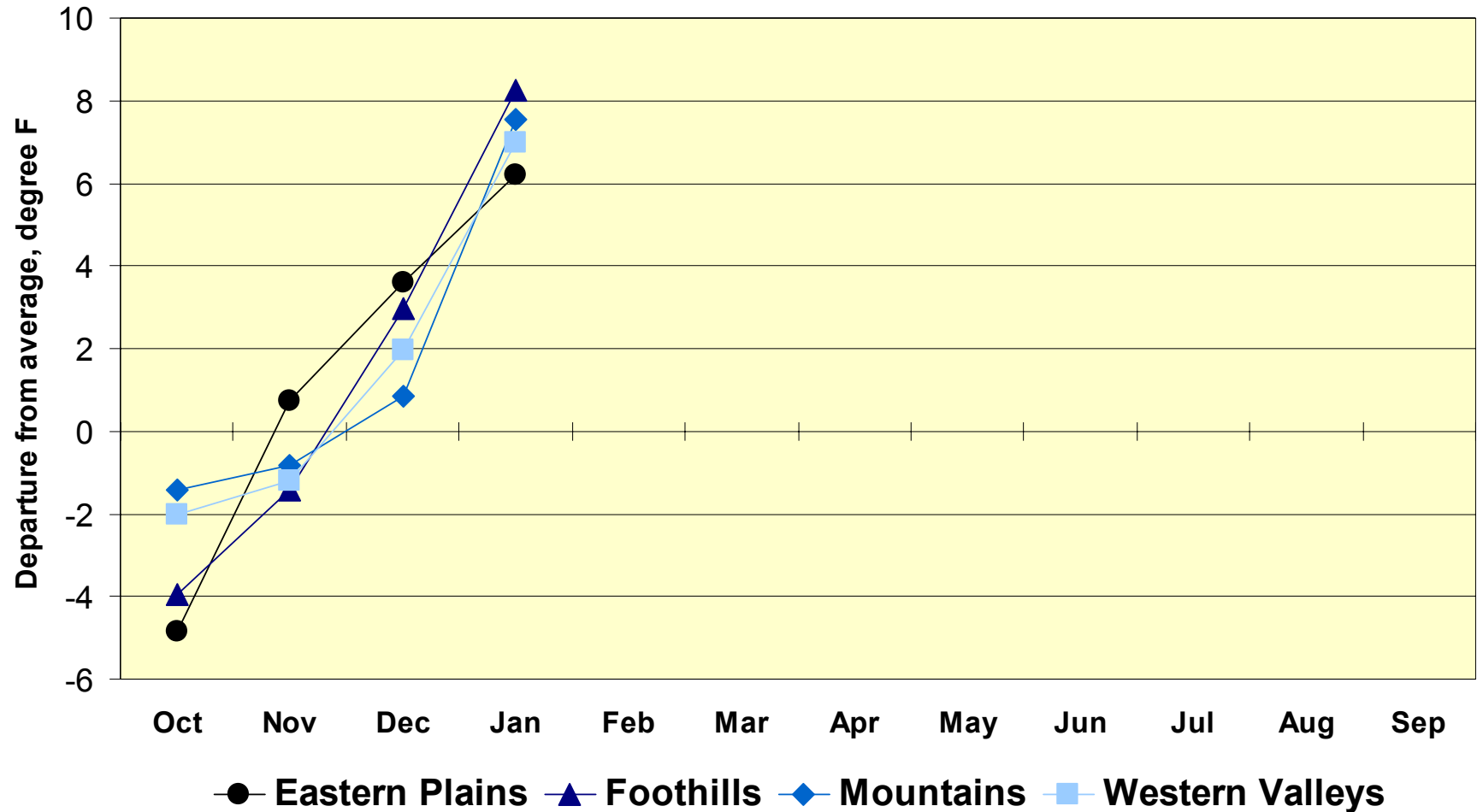
Summer Temperatures Fort Collins, 1889-2002



Where do we stand now?



Temperature - Water Year 2003

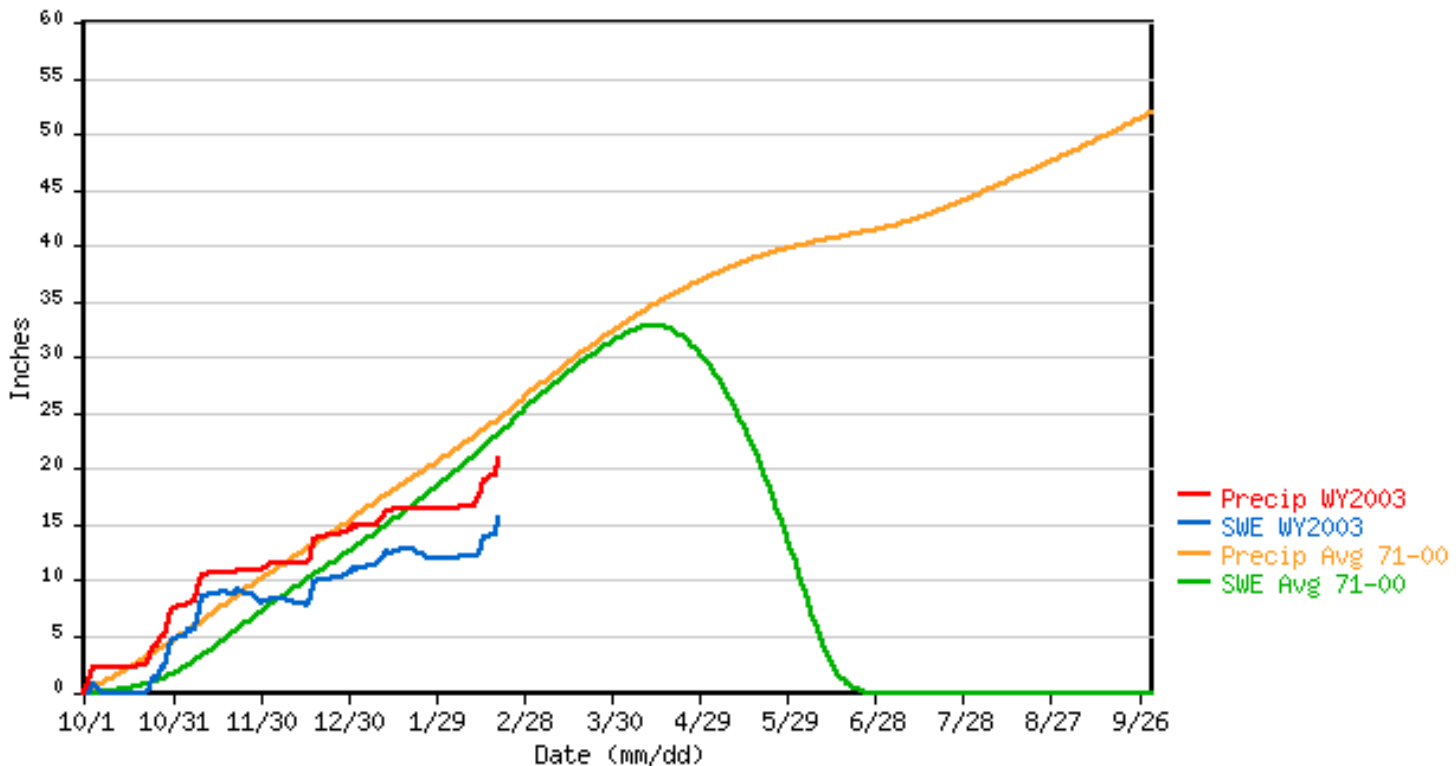


Water Year 2003 – Colorado

UPPER SAN JUAN SNOTEL

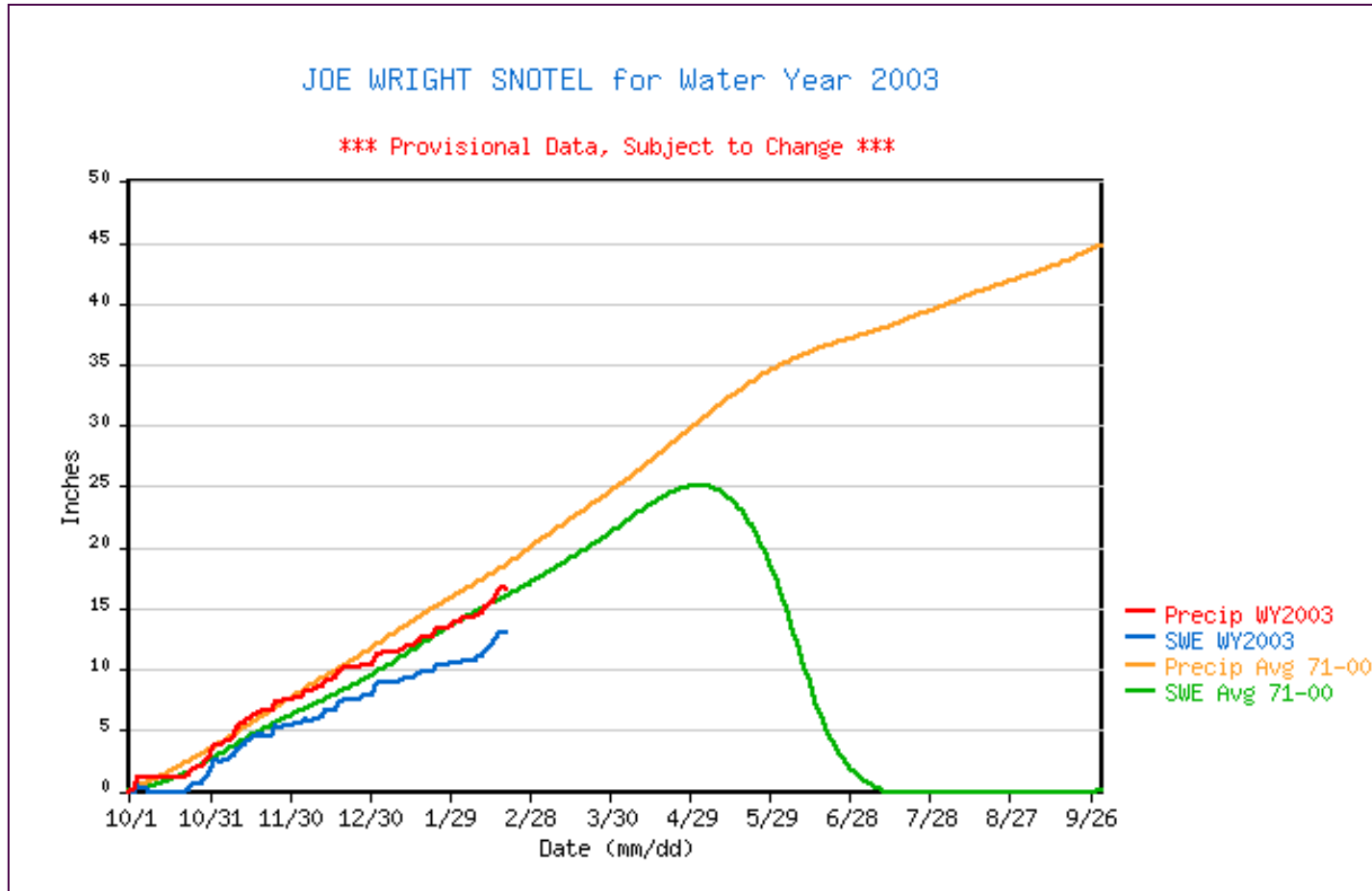
UPPER SAN JUAN SNOTEL for Water Year 2003

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



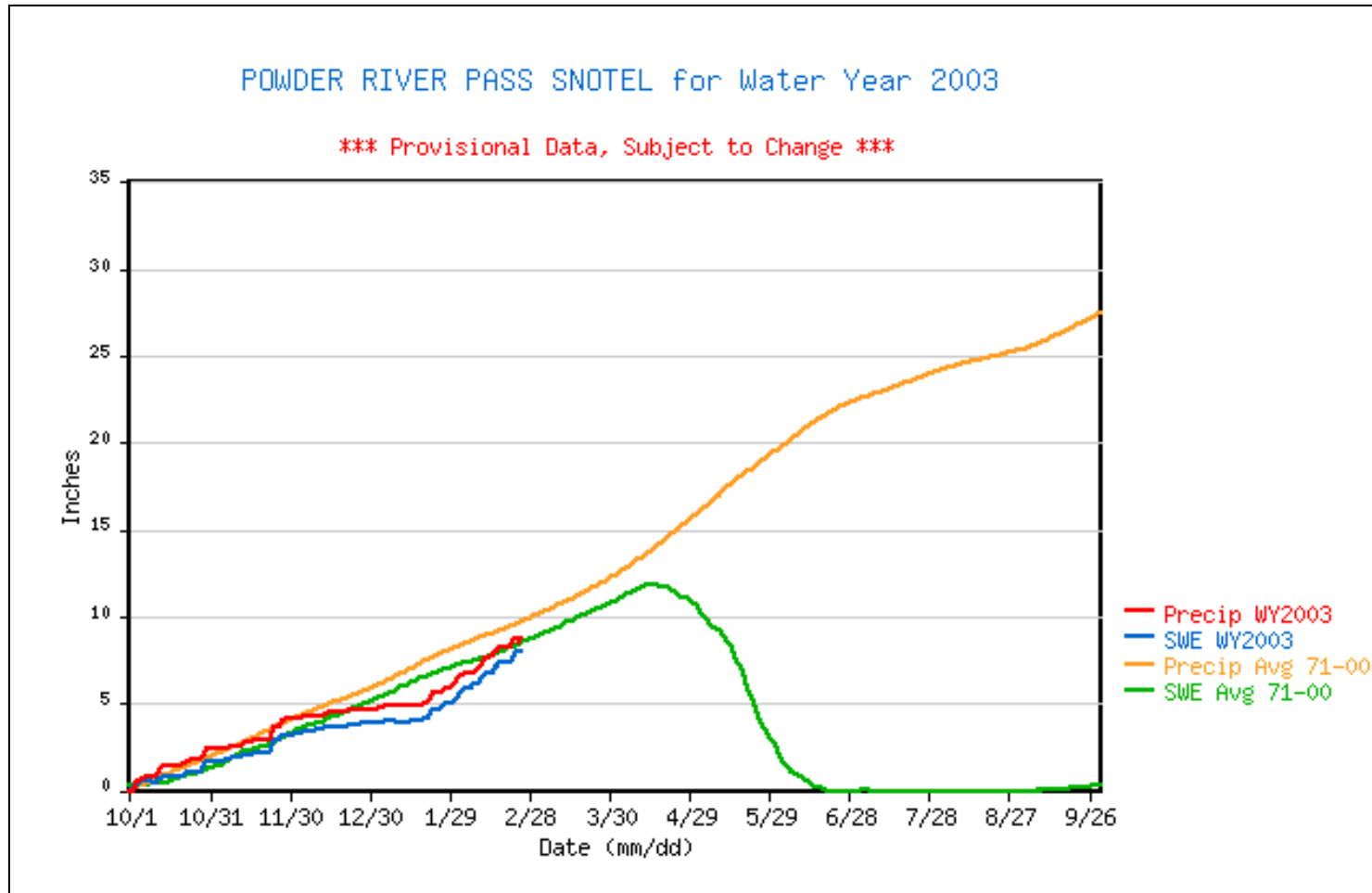
Water Year 2003 – Colorado

JOE WRIGHT SNOTEL



Water Year 2003 – Wyoming

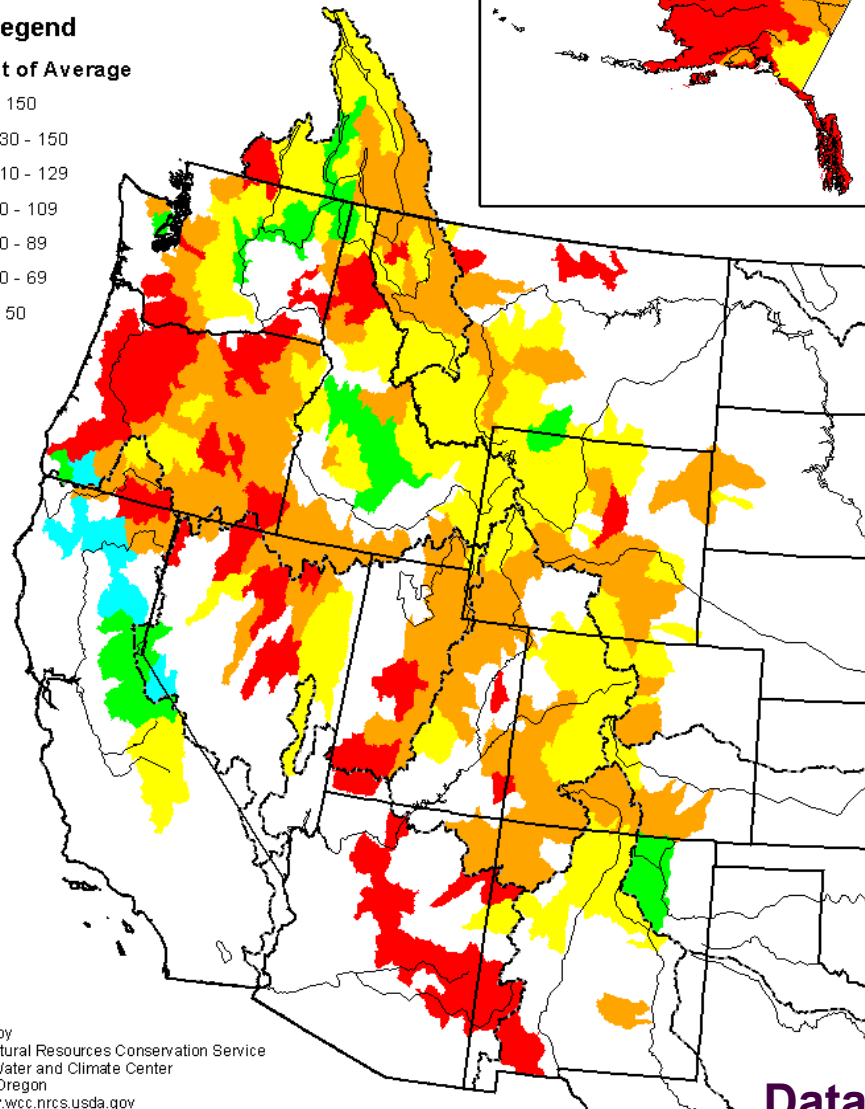
Power River SNOTEL



Mountain Snowpack as of February 1, 2003

Legend

Percent of Average

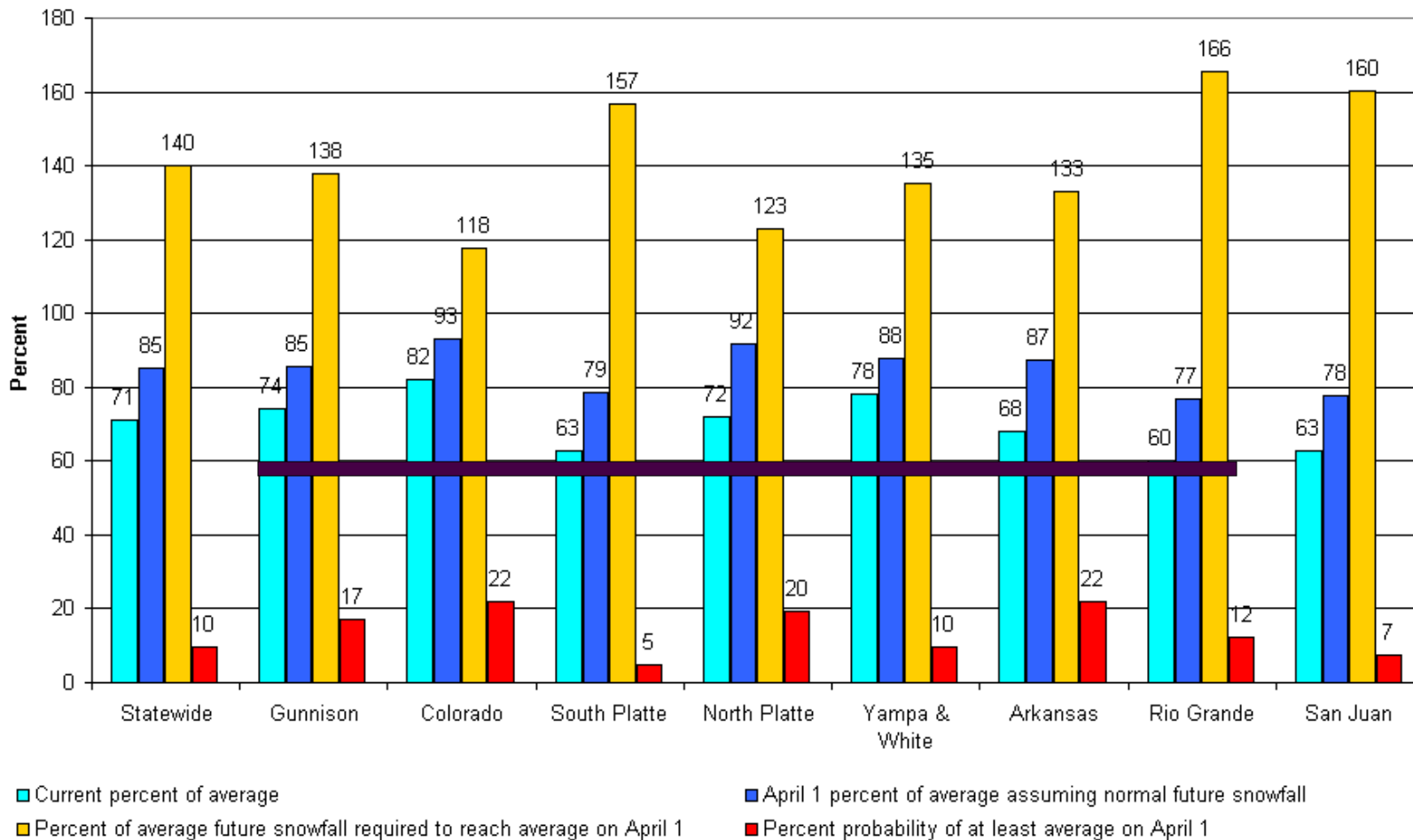


Prepared by
USDA, Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Data from USDA/NRCS

Colorado Snowpack

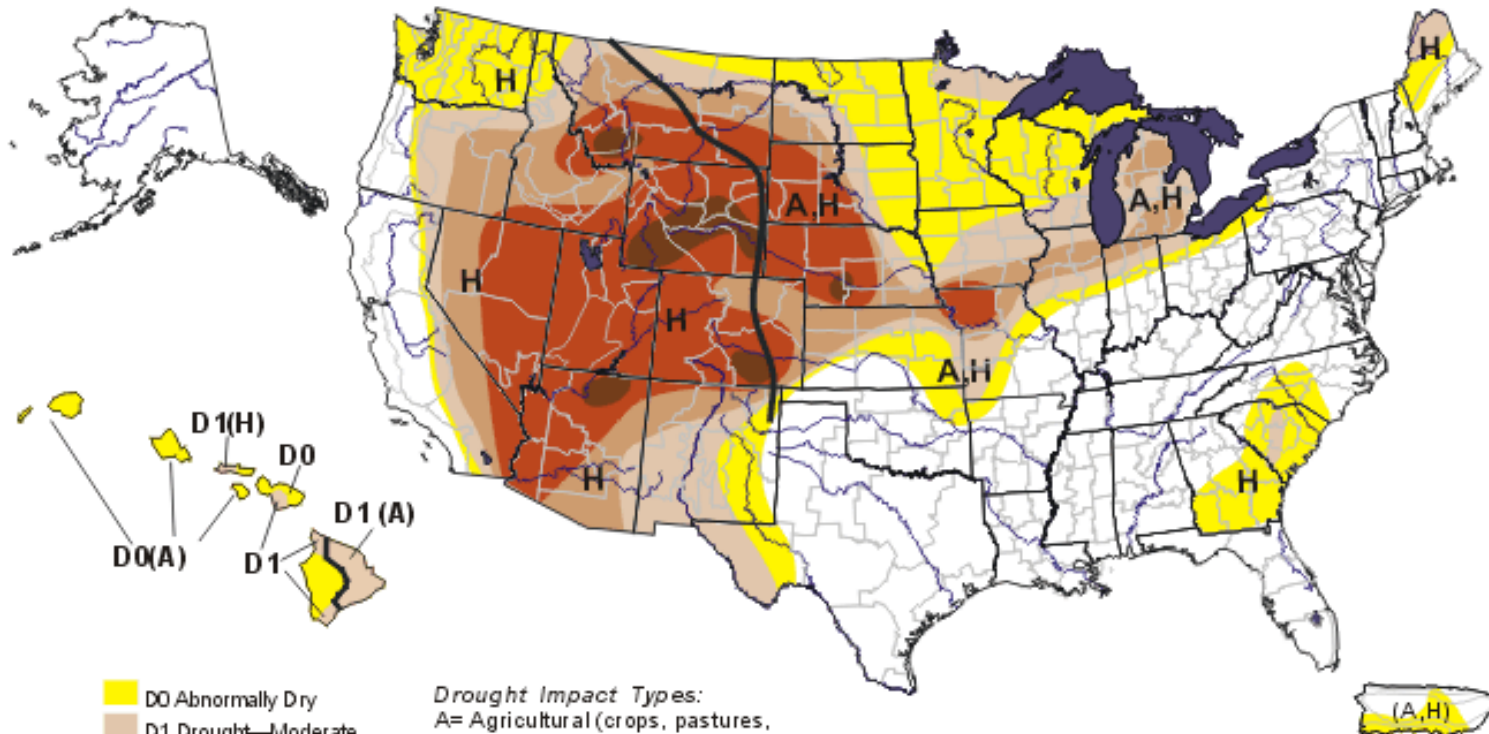
Current Conditions and Future Scenarios as of February 1, 2003



U.S. Drought Monitor

February 18, 2003

Valid 7 a.m. EST



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

Drought Impact Types:
A= Agricultural (crops, pastures, grass lands, wildfire danger)
H= Hydrological (water)
— Delineates dominant impacts
(No type = both impacts)

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, February 20, 2003

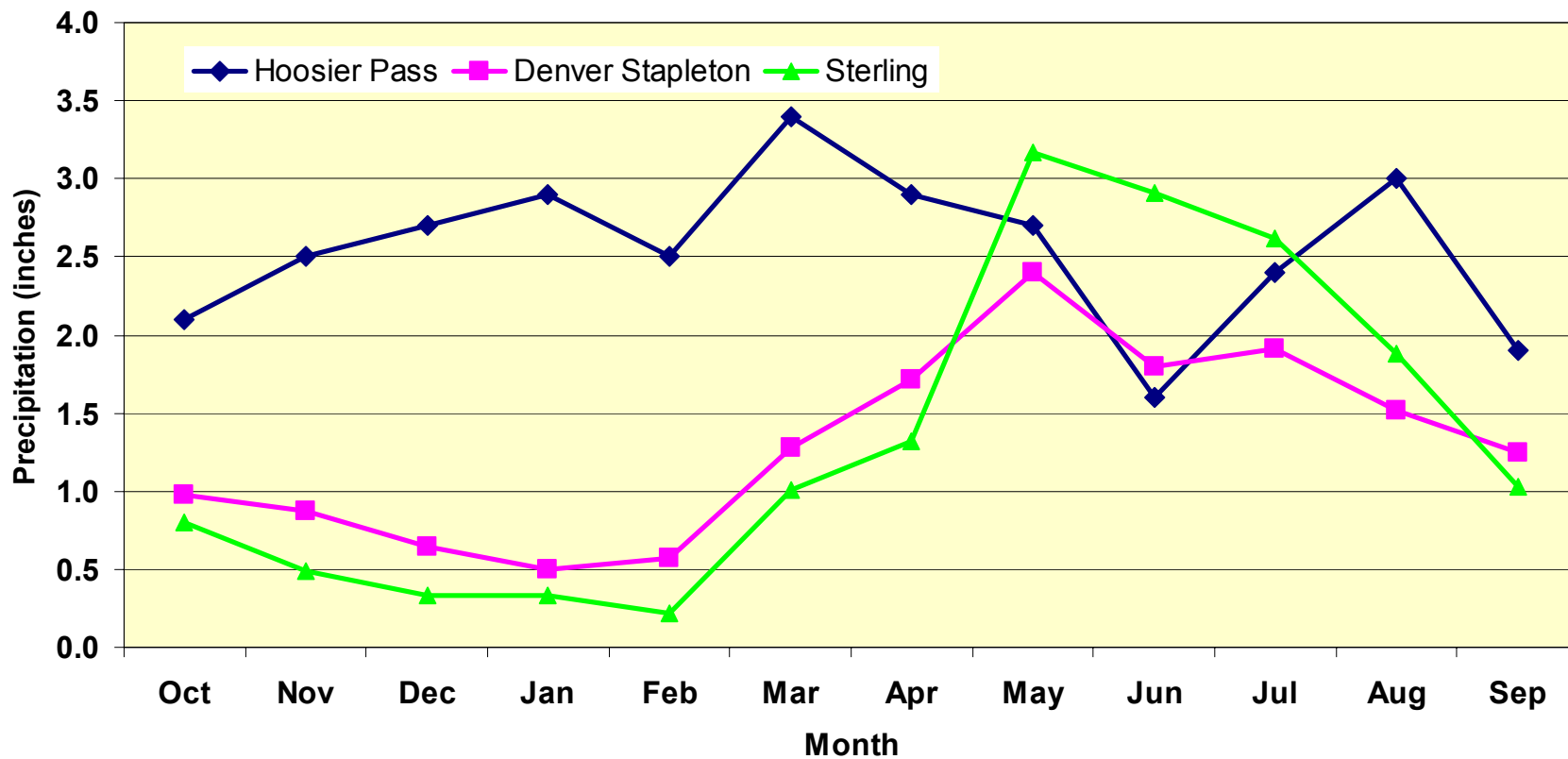
Author: Mark Svoboda and Mike Hayes, NDMC

What May Be Ahead in 2003

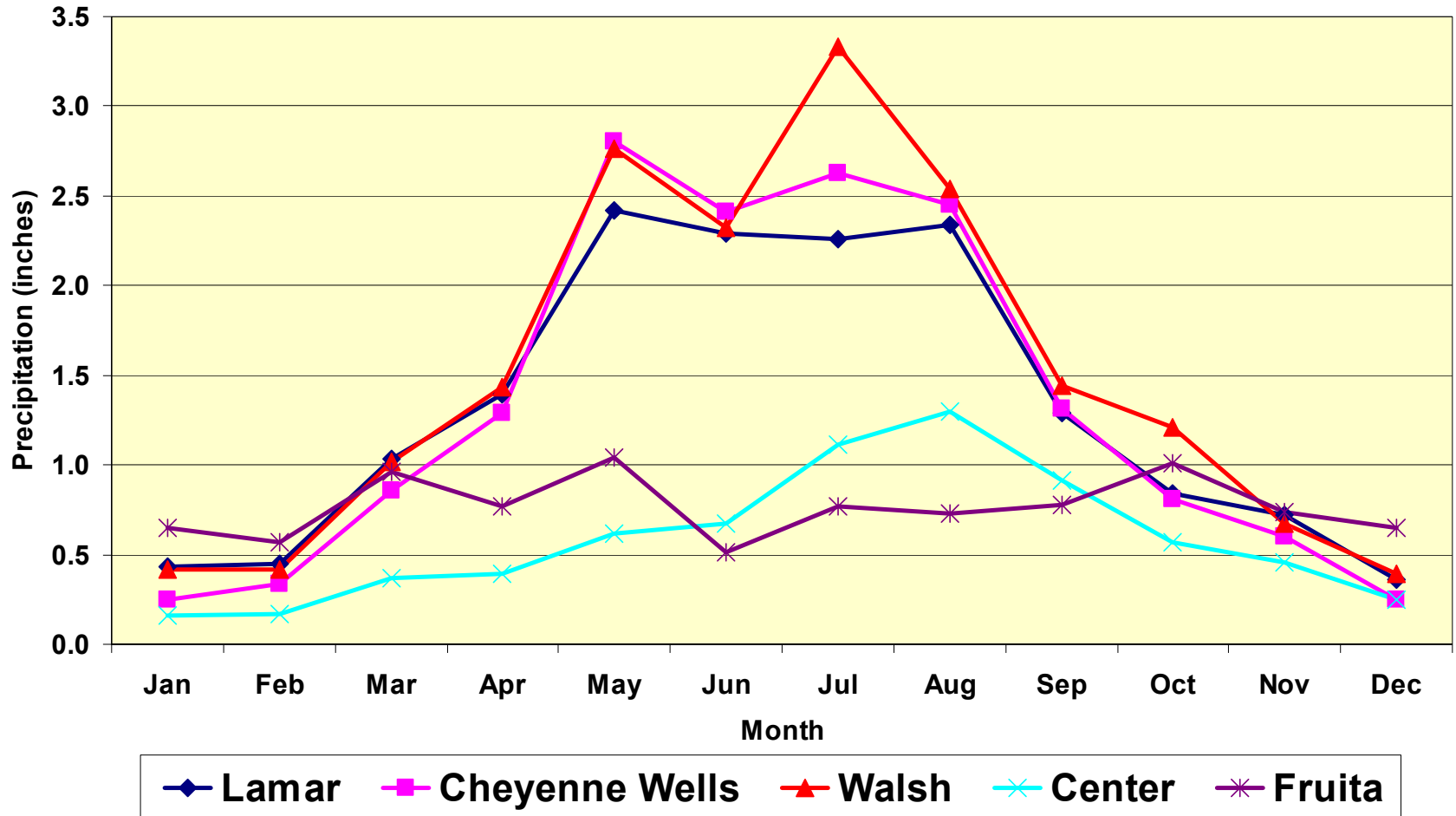


Precipitation

Monthly Average Precipitation for Selected Sites
in the South Platte Basin



Monthly Average Precipitation for 1971-2000

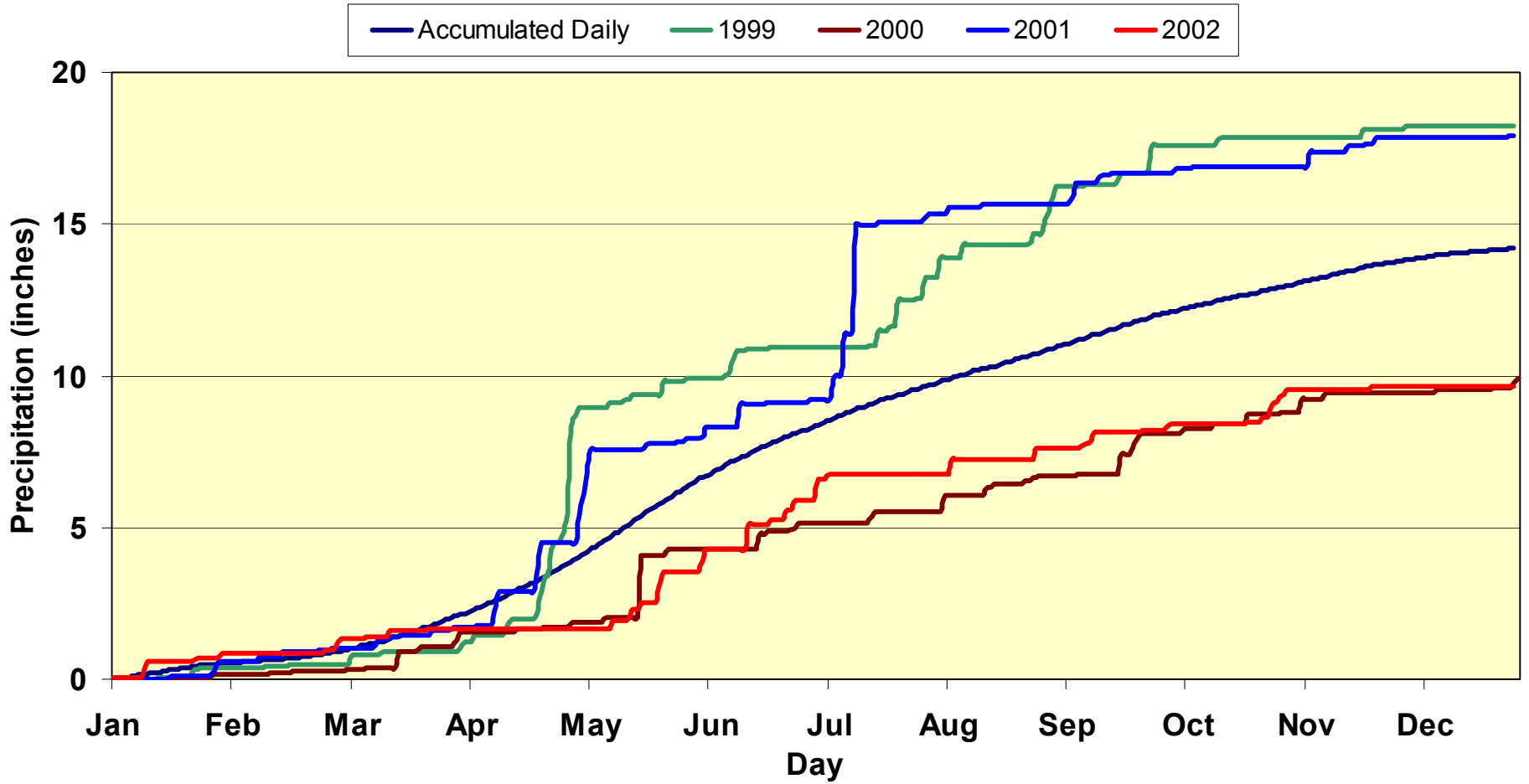


Precipitation

- A few storms contribute a large fraction of annual precipitation while many small events contribute a small fraction.



Greeley Daily Accumulated Precipitation





What Happens Next

- We have never experienced 2 consecutive extreme statewide drought years.
- Past multi-year drought, characterized by one extreme year preceded and followed by other dry year.
- Entire Region rarely all recovers quickly and at the same time.
- *Hope for the best, plan for the worst!!*

Positive Indicators

- Late winter snows
- Cool spring
- Multi-day precipitation
- Wet Snow
- Low intensity rainfall
- Light winds
- High humidity
- Abundant cloud cover



Negative Indicators

- Little late winter snow
- Missed opportunities
- Warm spring
- Brief, sporadic precipitation
- High intensity rainfall
- Frequent, strong winds
- Low humidity
- Abundant sunshine

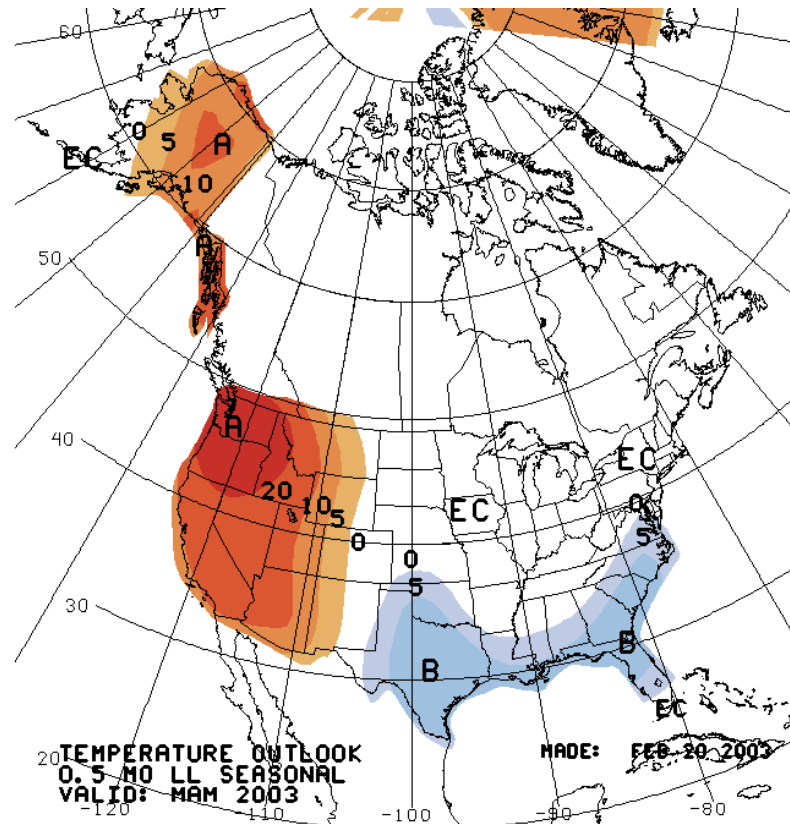




Current Indicators

- El Niño still present
- Unfavorable Pacific decadal oscillation
- Missed opportunities
- February better – but not a good indicator
- Wet often follows dry
- Most extreme dry periods last one year (Exceptions: SE CO)

Temperature March-May 2003

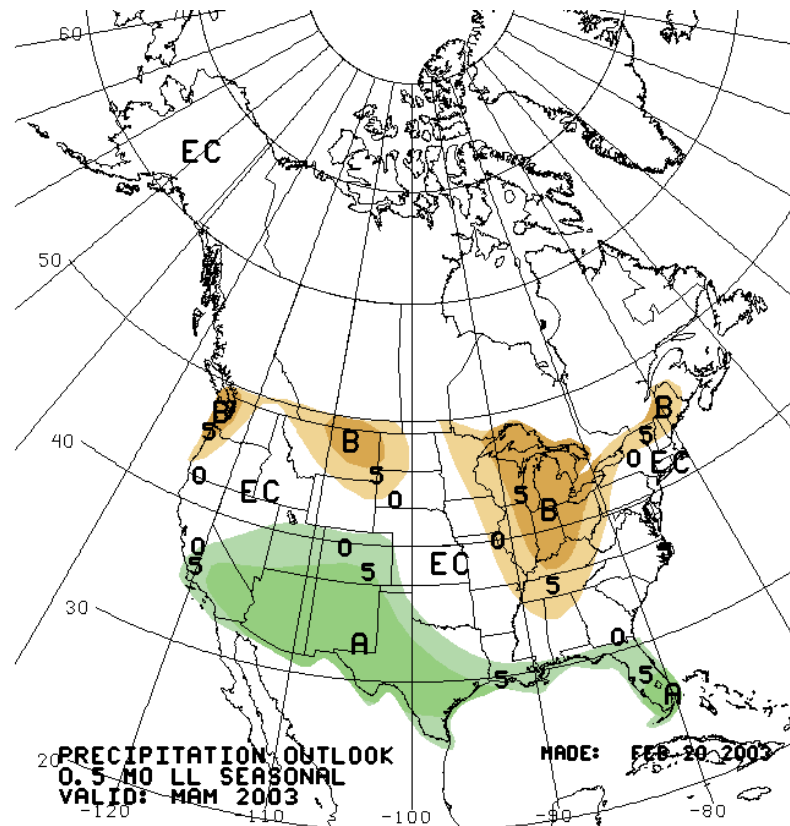


From the Colorado Prediction Center

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

Precipitation

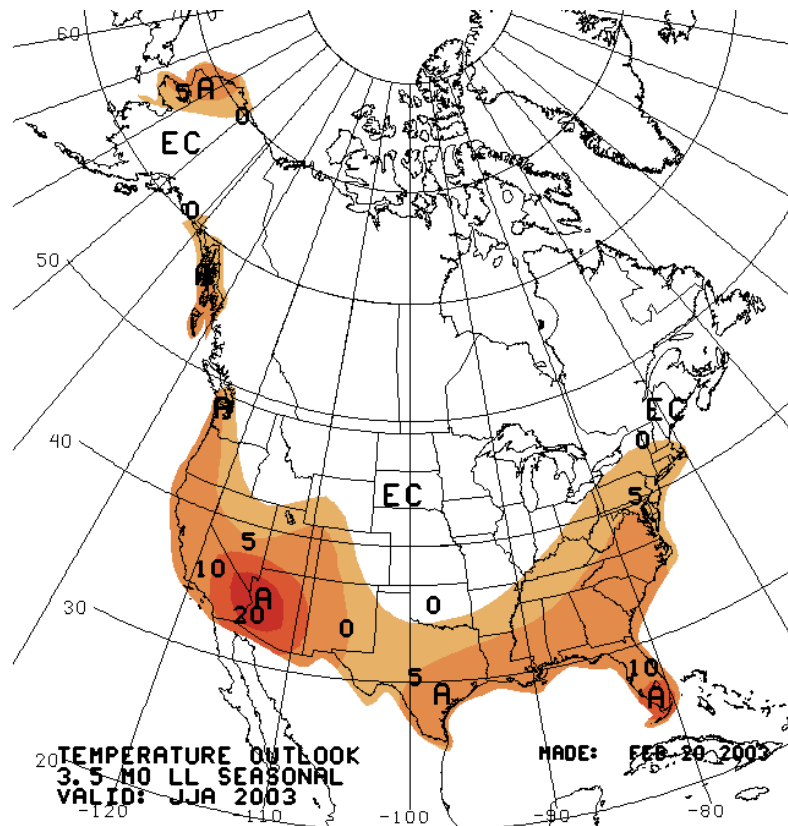
March-May 2003



From the Colorado Prediction Center

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

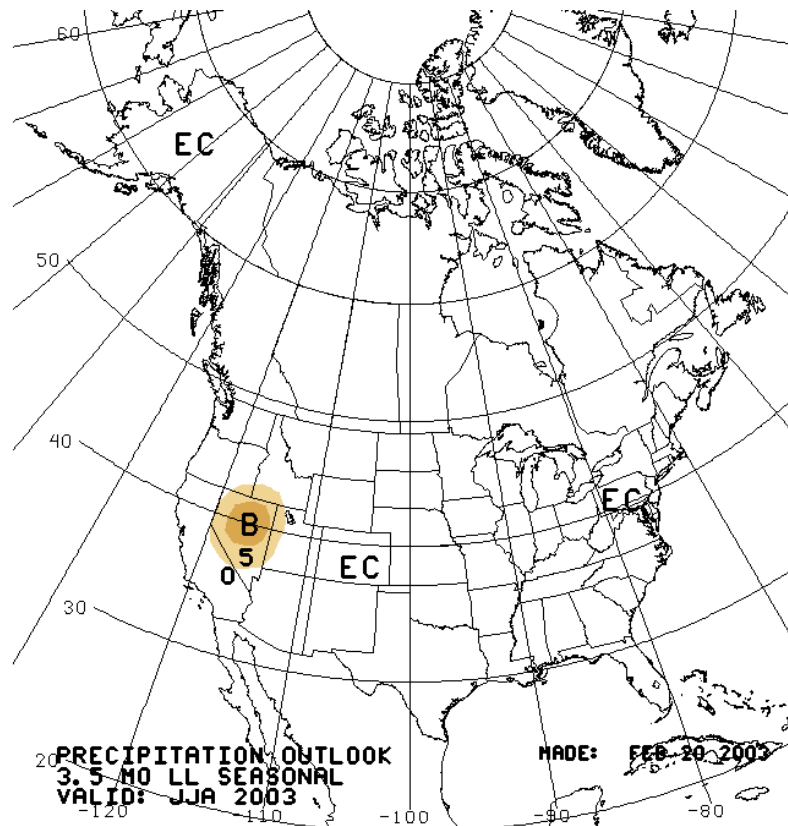
Temperature June-Aug 2003



From the Colorado Prediction Center

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

Precipitation June-Aug 2003



From the Colorado Prediction Center

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

Breaking This Drought Will Be Tough

- A wet spring is essential to begin that process.

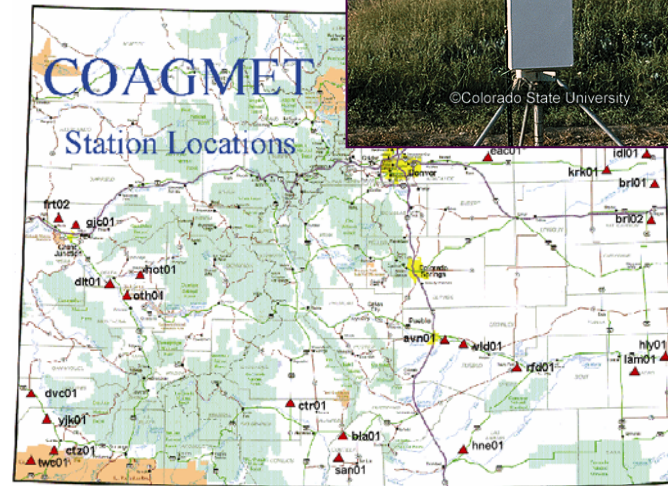


COAGMET

Weather Data for Agriculture

- Automated weather stations with daily and hourly readings of:

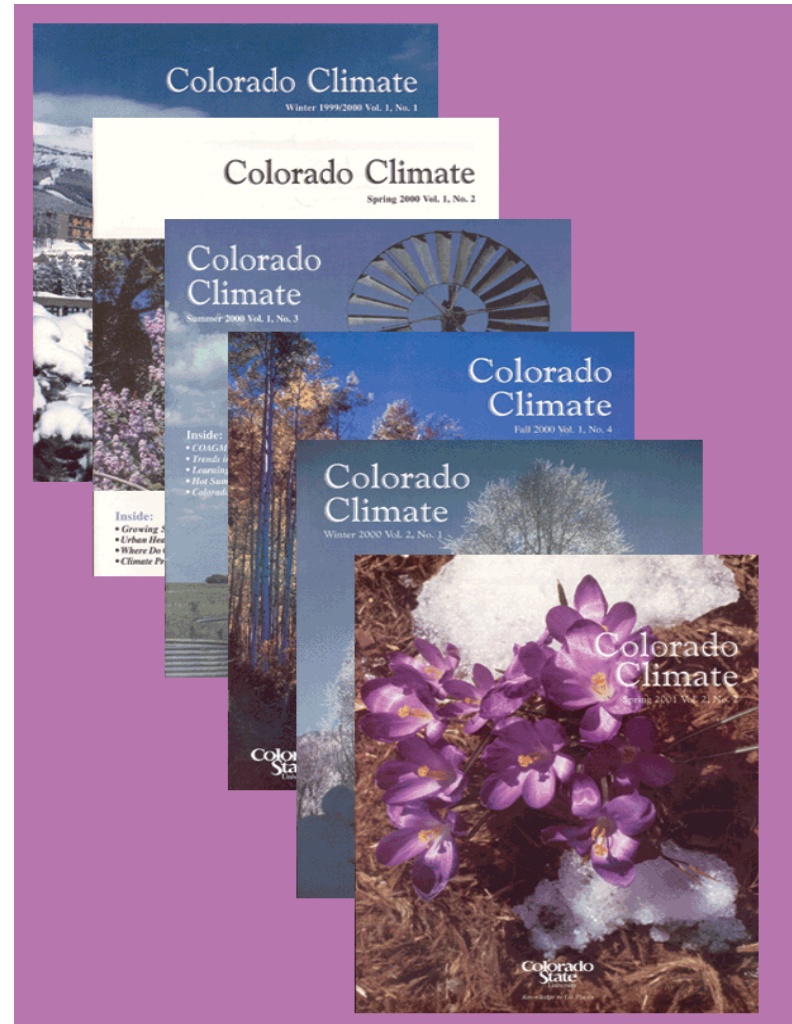
- Temperature
- Humidity
- Wind
- Precipitation
- Solar energy
- Evapotranspiration



<http://www.COAGMET.com>

Colorado Climate Magazine

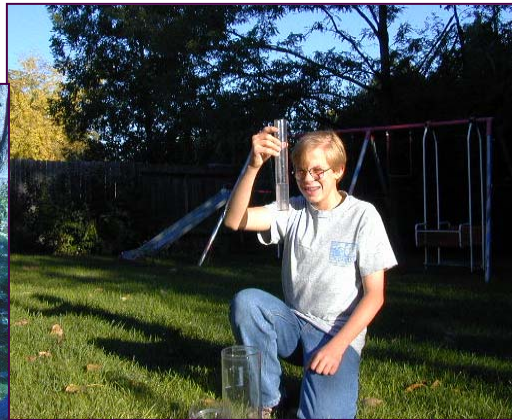
- Good bedtime reading about the climate of Colorado -- recent and historic
- \$15/year subscription pays printing and mailing costs



CoCo RaHS

YOU CAN HELP!

<http://www.cocorahs.com>





Colorado Climate Center

Colorado State University

- Data and Power Point Presentations available for downloading
- <http://climate.atmos.colostate.edu>
click on “Drought”
then click on “Presentations”