

Spring
2010

May 25th, 2010

NIDIS - UPPER COLORADO BASIN PILOT PROJECT

Weekly Climate, Water & Drought Assessment

Today's Agenda

- Assessment of current water conditions
- Precipitation Forecast
- Recommendations for Drought Monitor

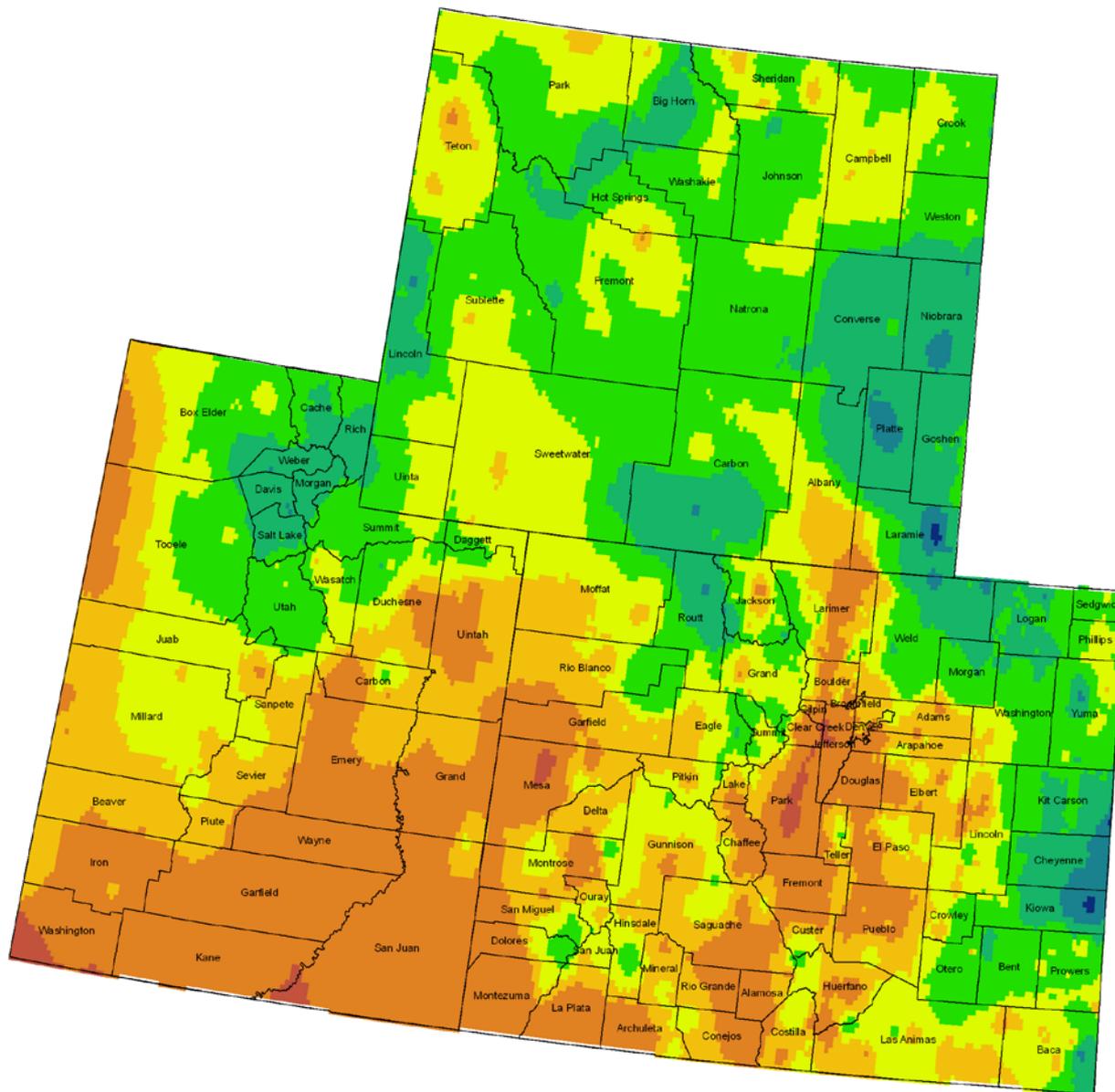
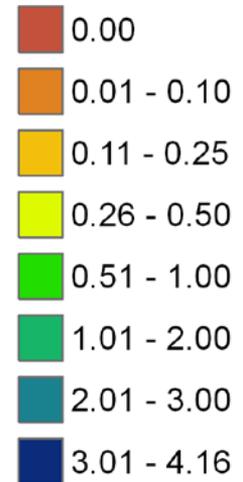
Precipitation/Snowpack Update



Colorado, Utah and Wyoming 7 Day Precipitation 16 - 22 May 2010

Extract_16_21

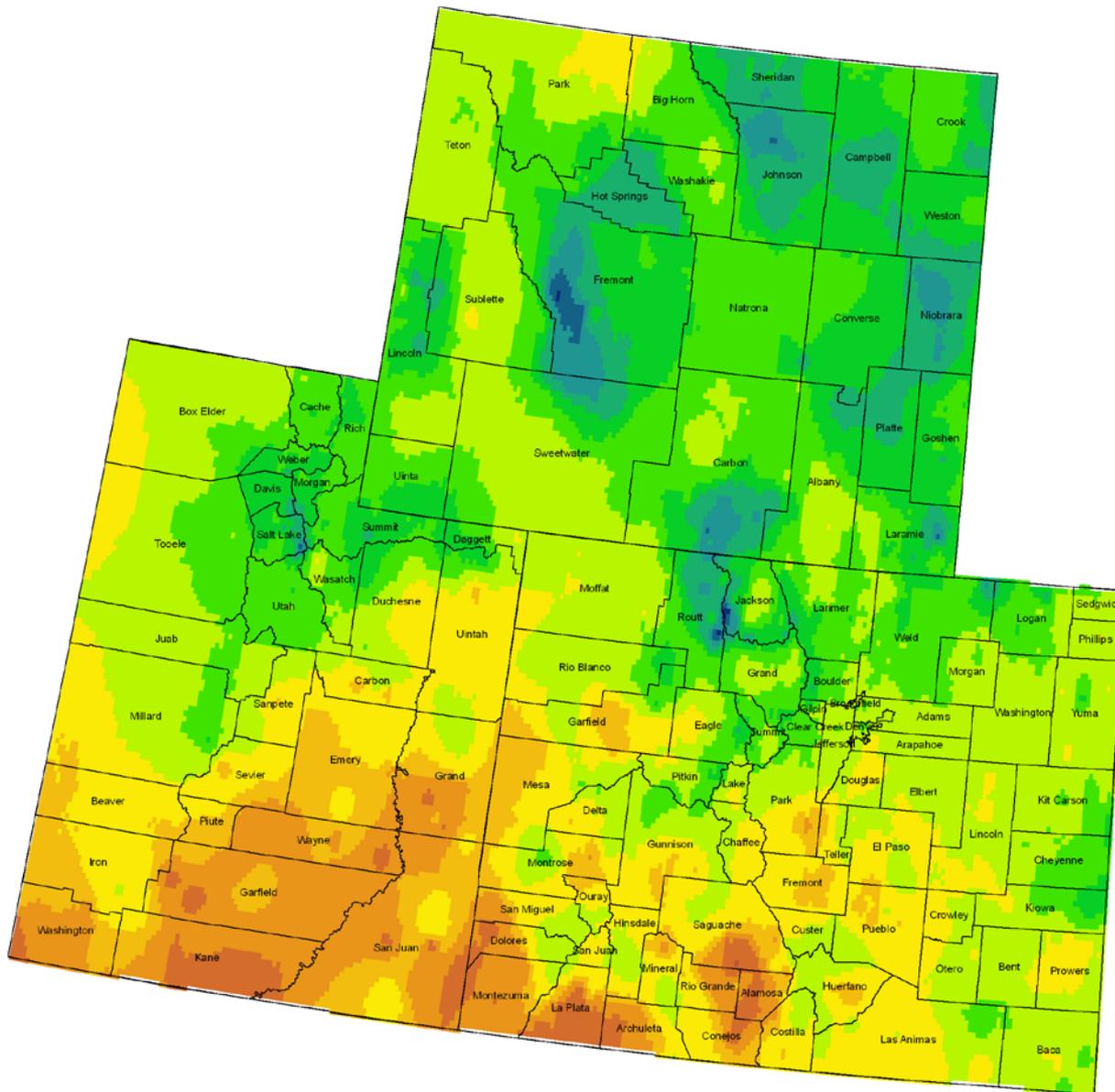
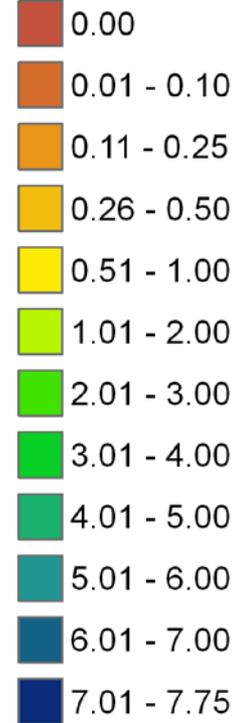
PPT



Colorado, Utah and Wyoming Precipitation 1 - 23 May 2010

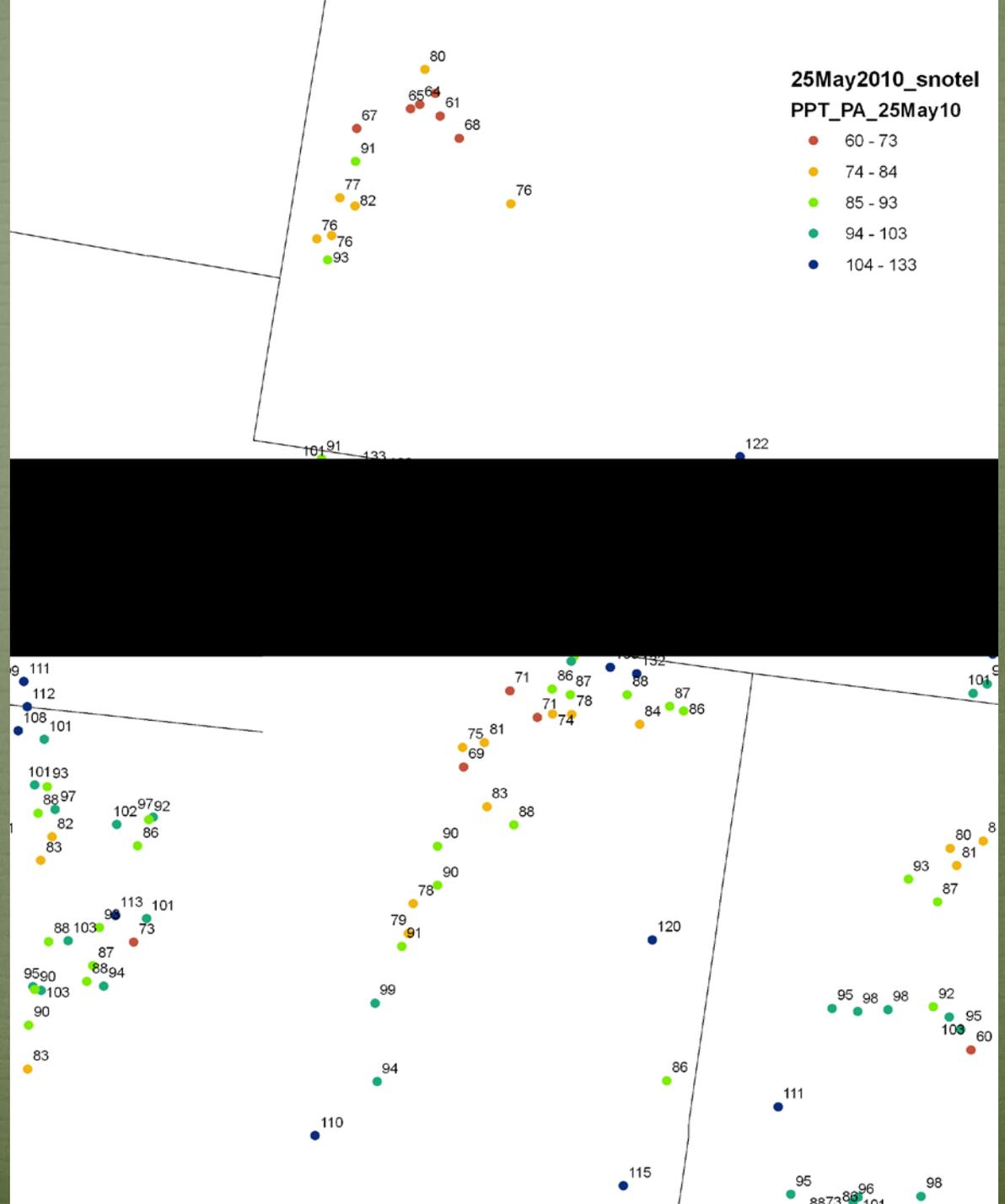
1_23may

PPT

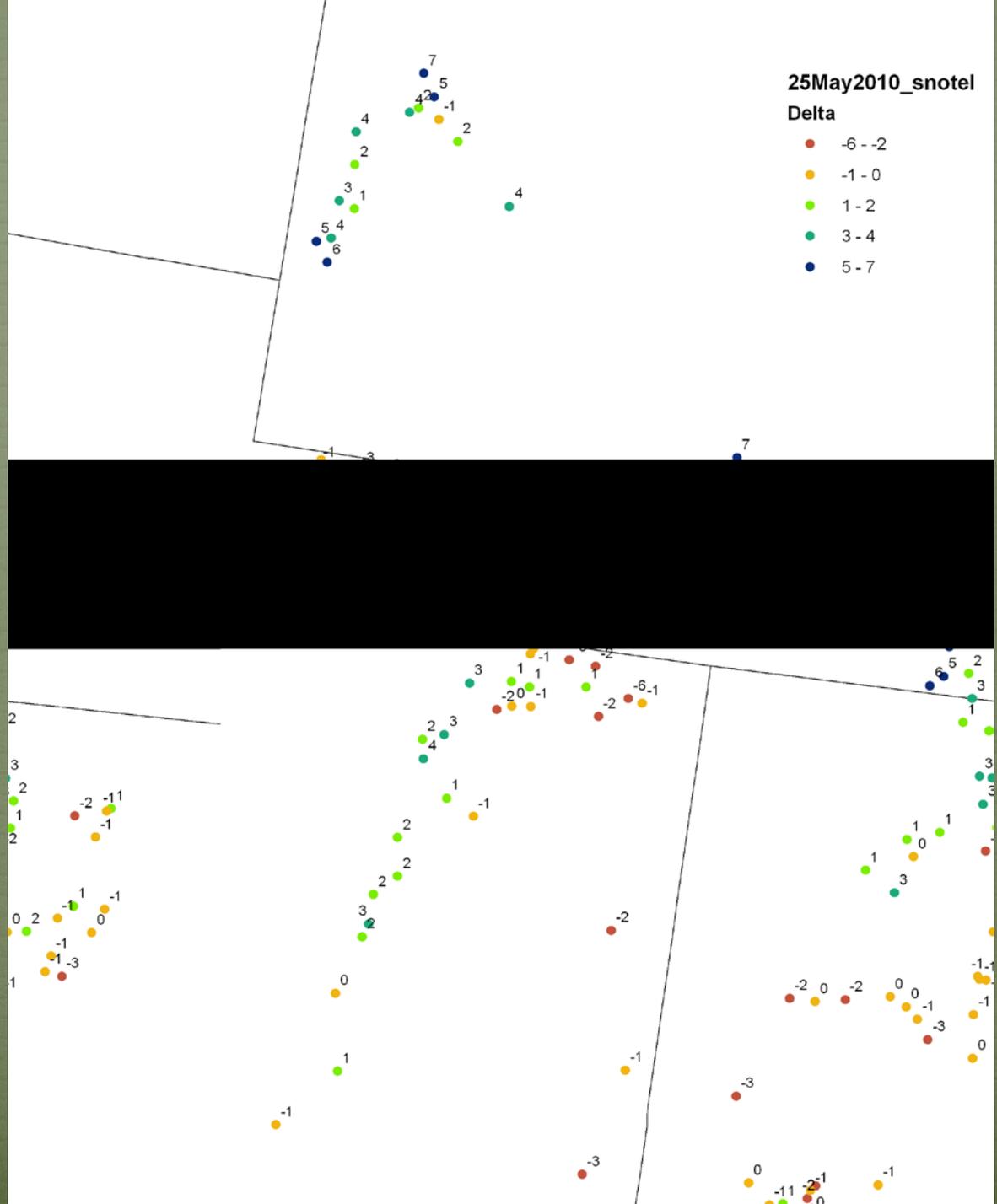


Snotel WYTD Precipitation as Percentage of Average

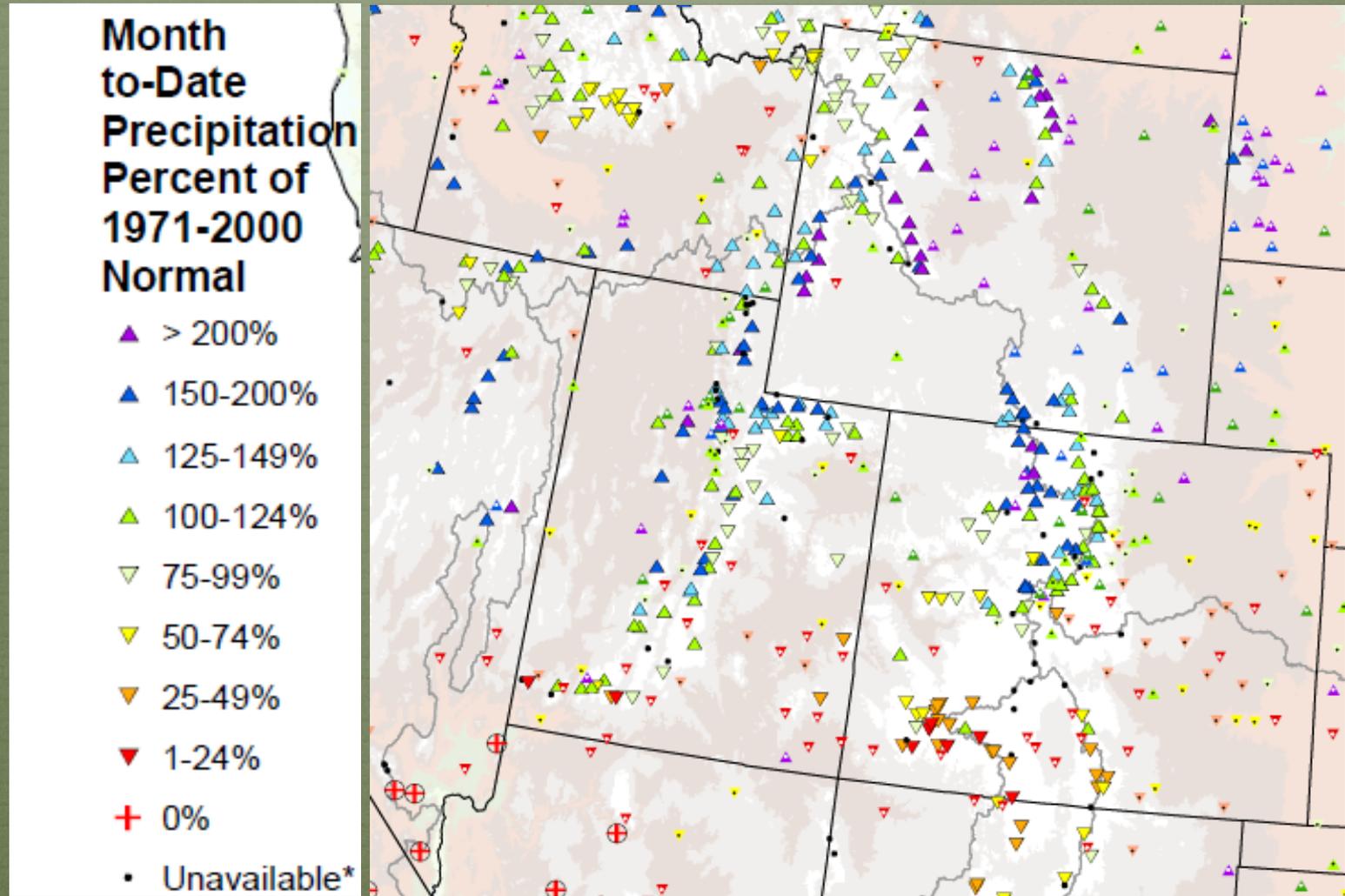
Upper Colorado 90%
of Average Overall
(1% decrease from
last week)



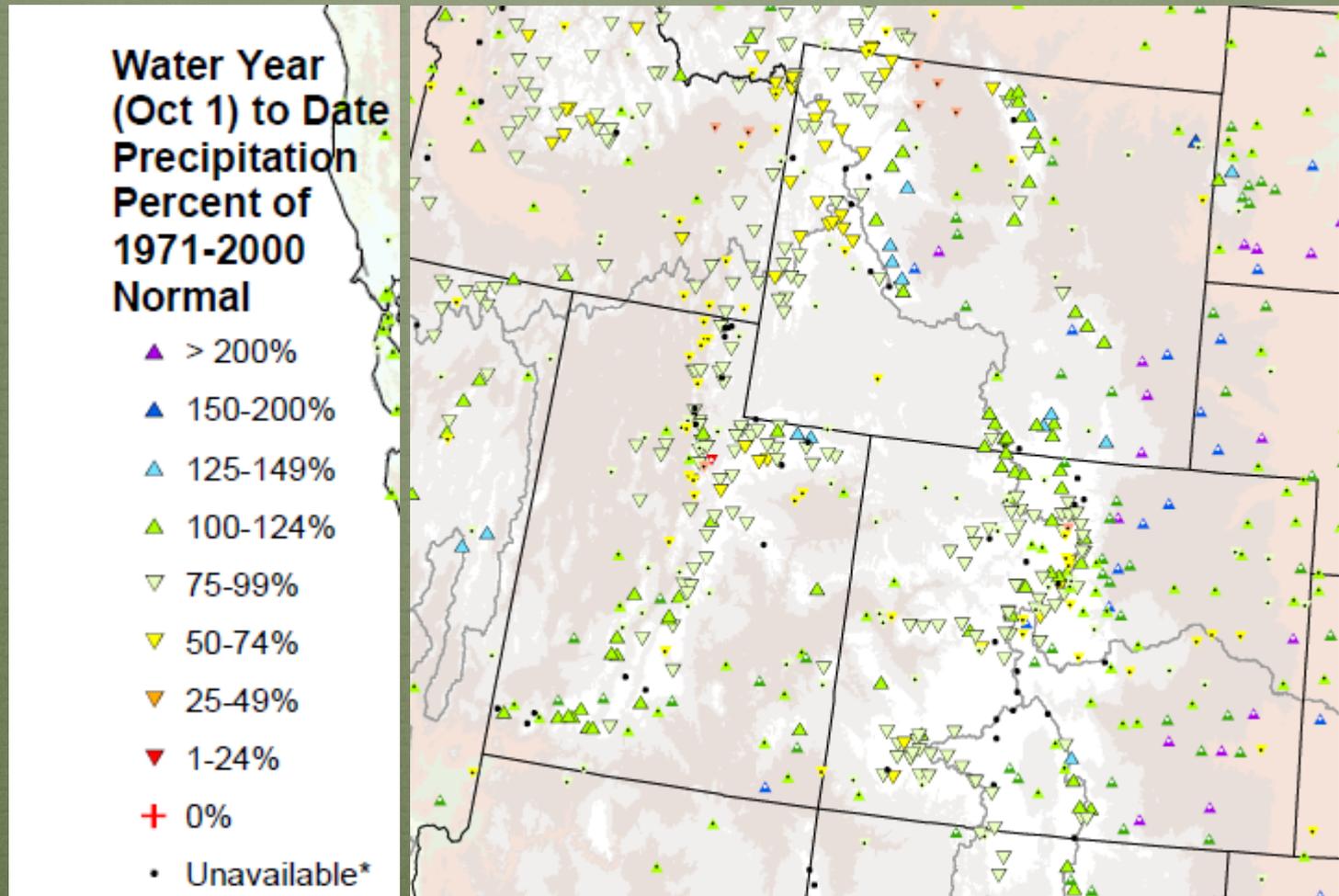
1 Week Change in Snotel WYTD Precipitation Percent of Average



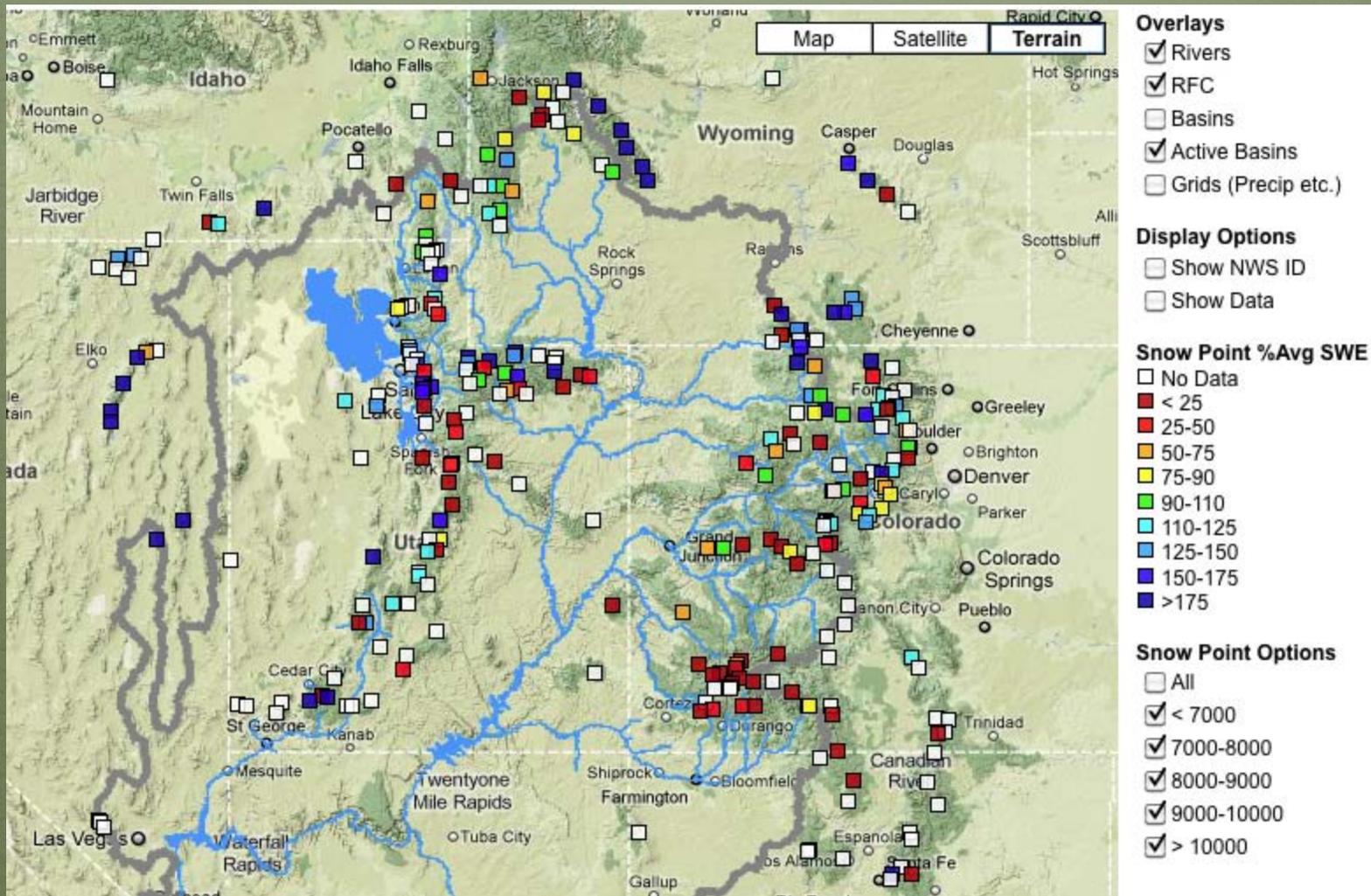
ACIS and Snotel Month to Date Precip as Percent of Average



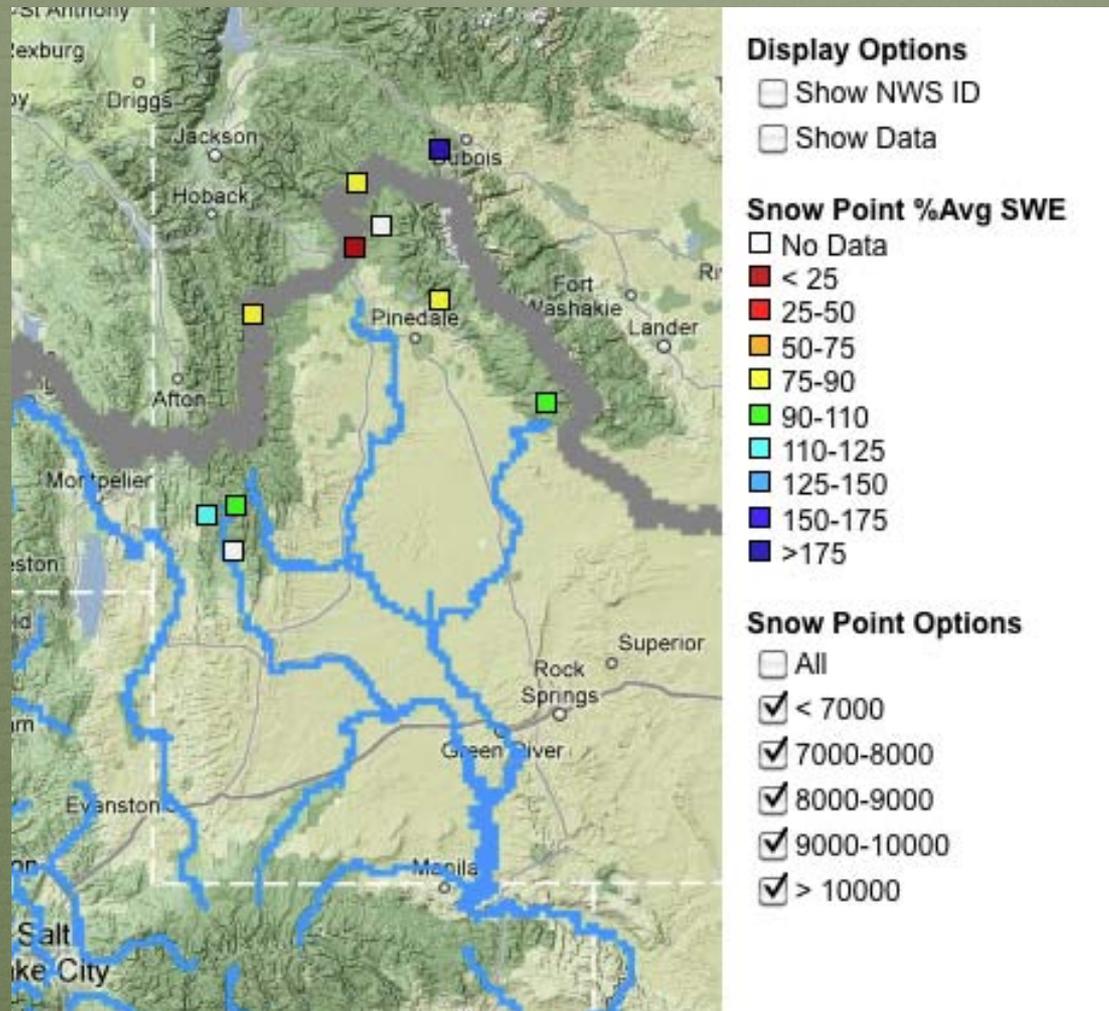
ACIS and Snotel WYTD Precipitation as Percent of Average



Upper Colorado River Basin

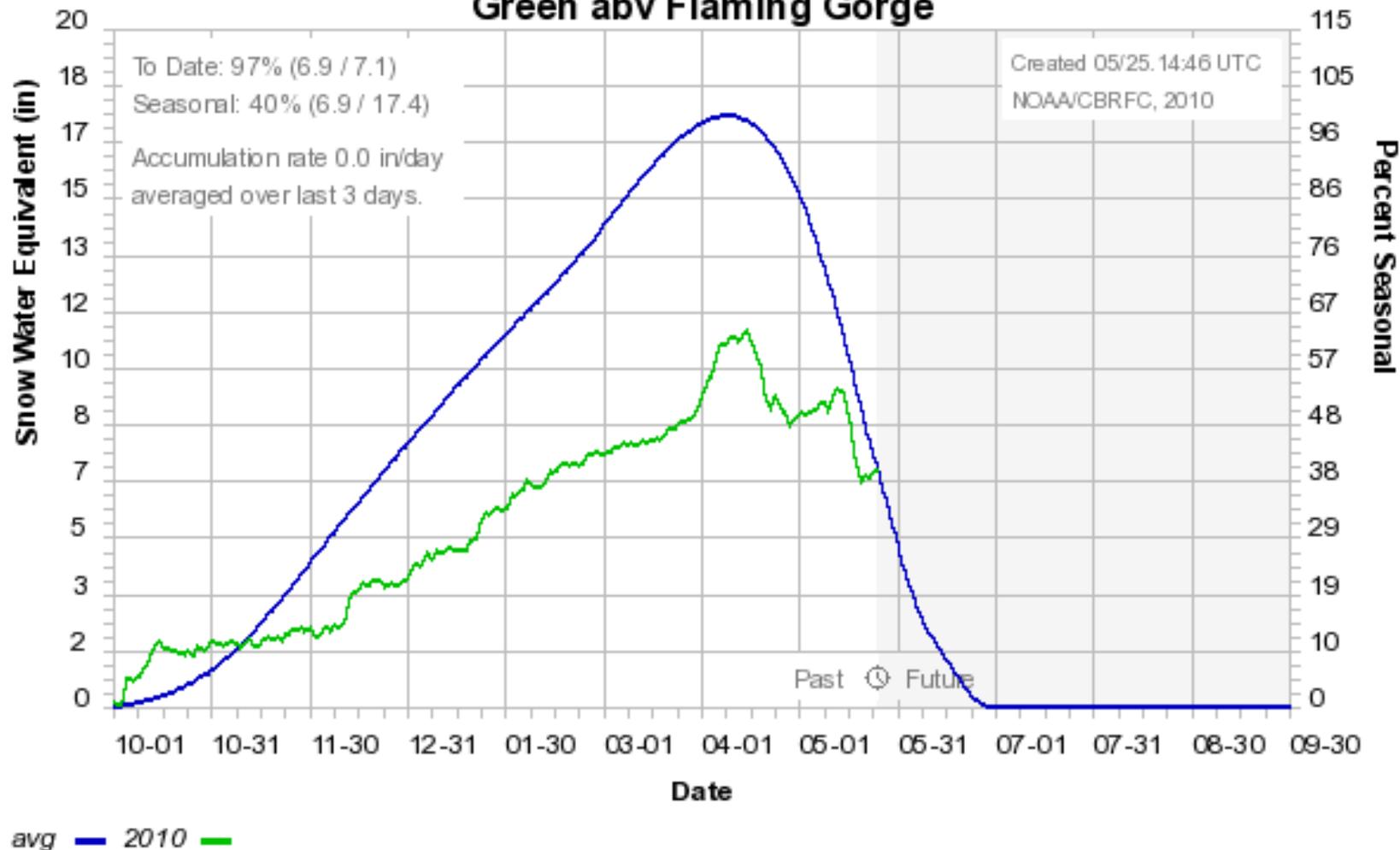


Green River Basin above Flaming Gorge



Colorado Basin River Forecast Center

Green abv Flaming Gorge

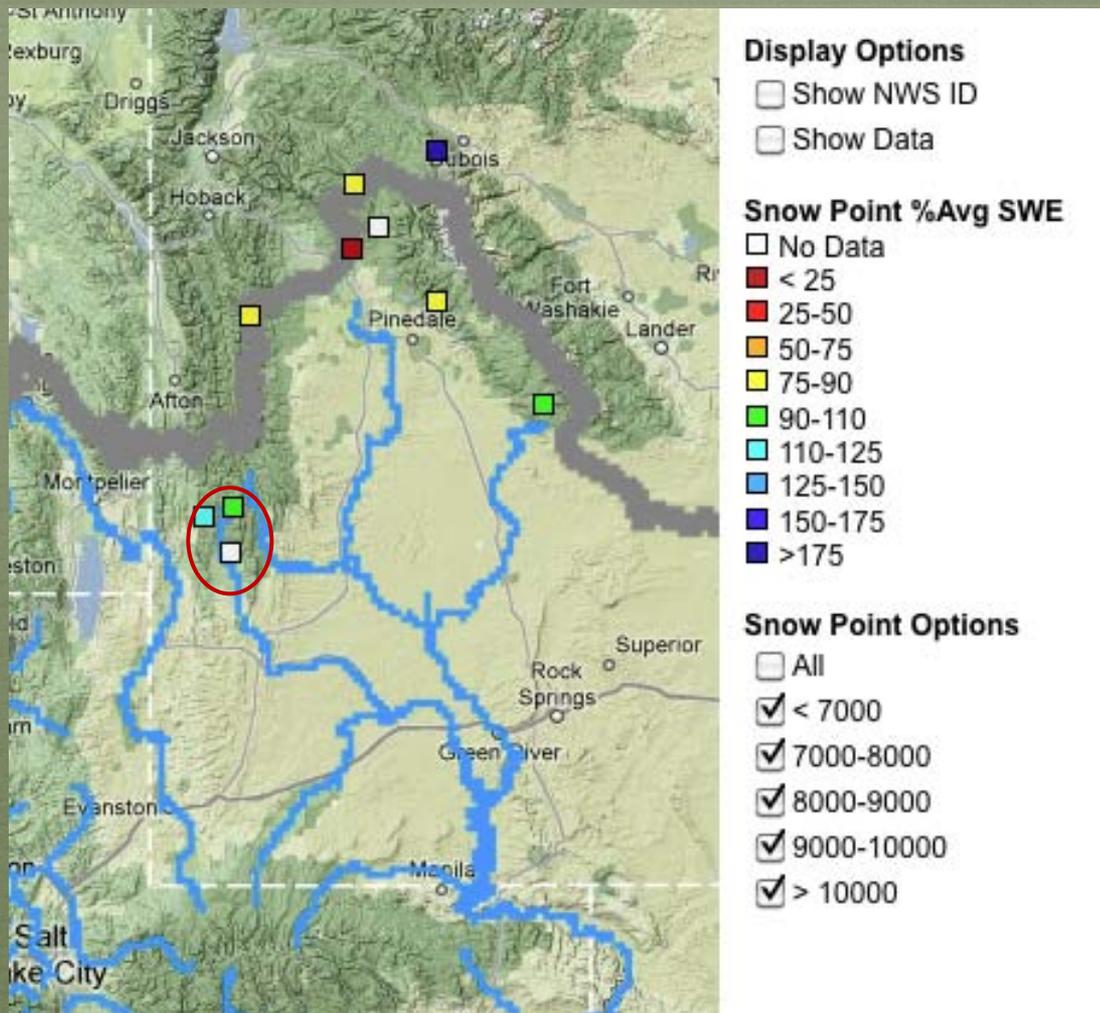


Basin Snowpack: 97%

Peak snowpack: 64% of average peak

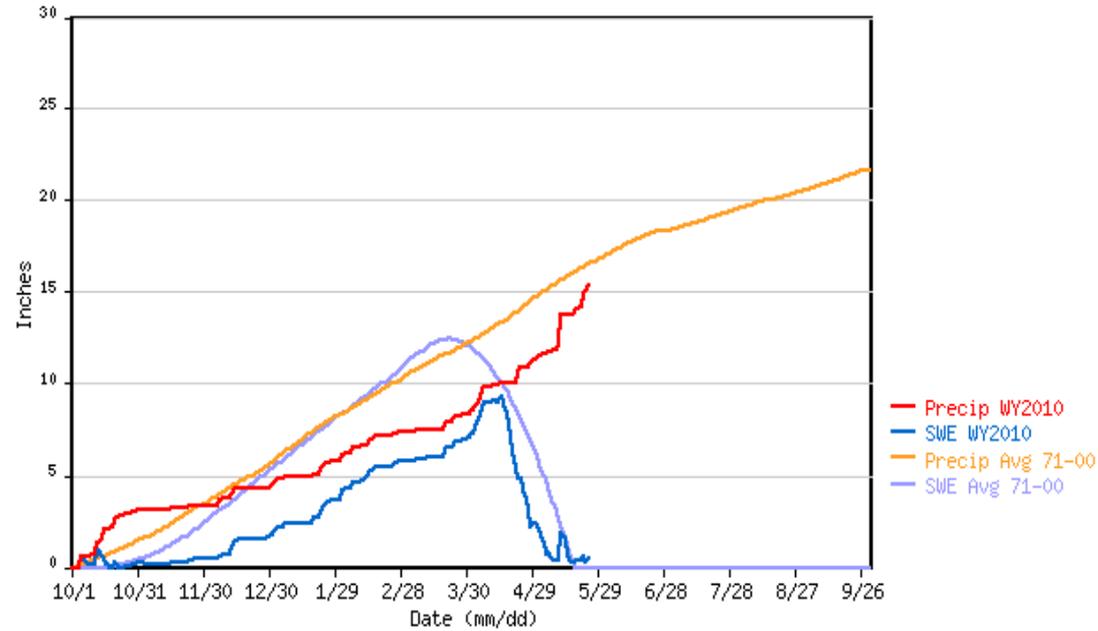
WYTD Precipitation percent of average: 71%

Indian Creek and Hams Fork



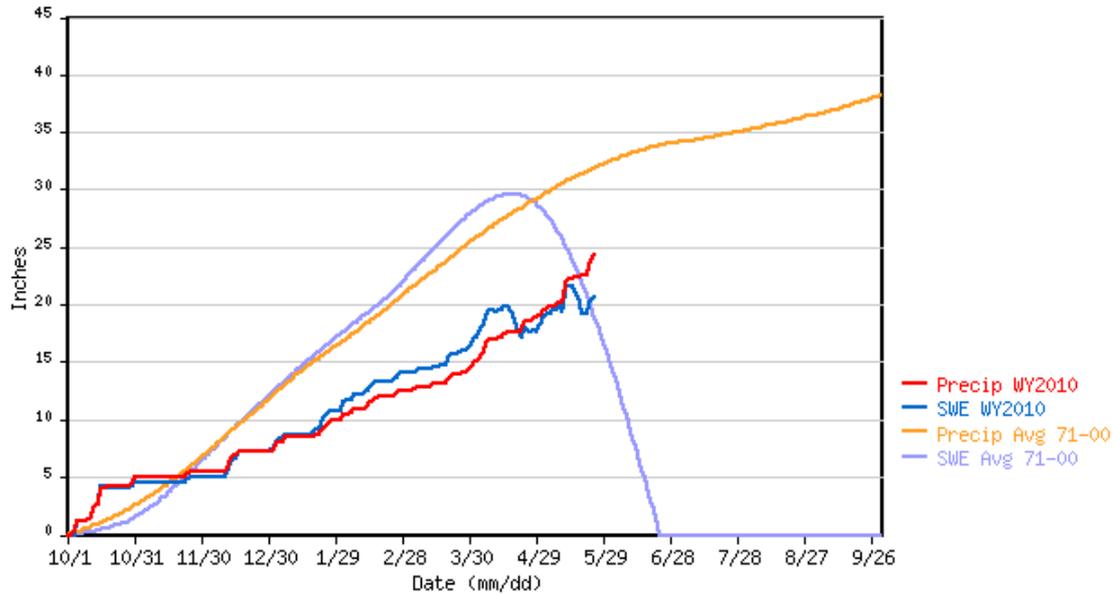
HAMS FORK SNOTEL for Water Year 2010

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

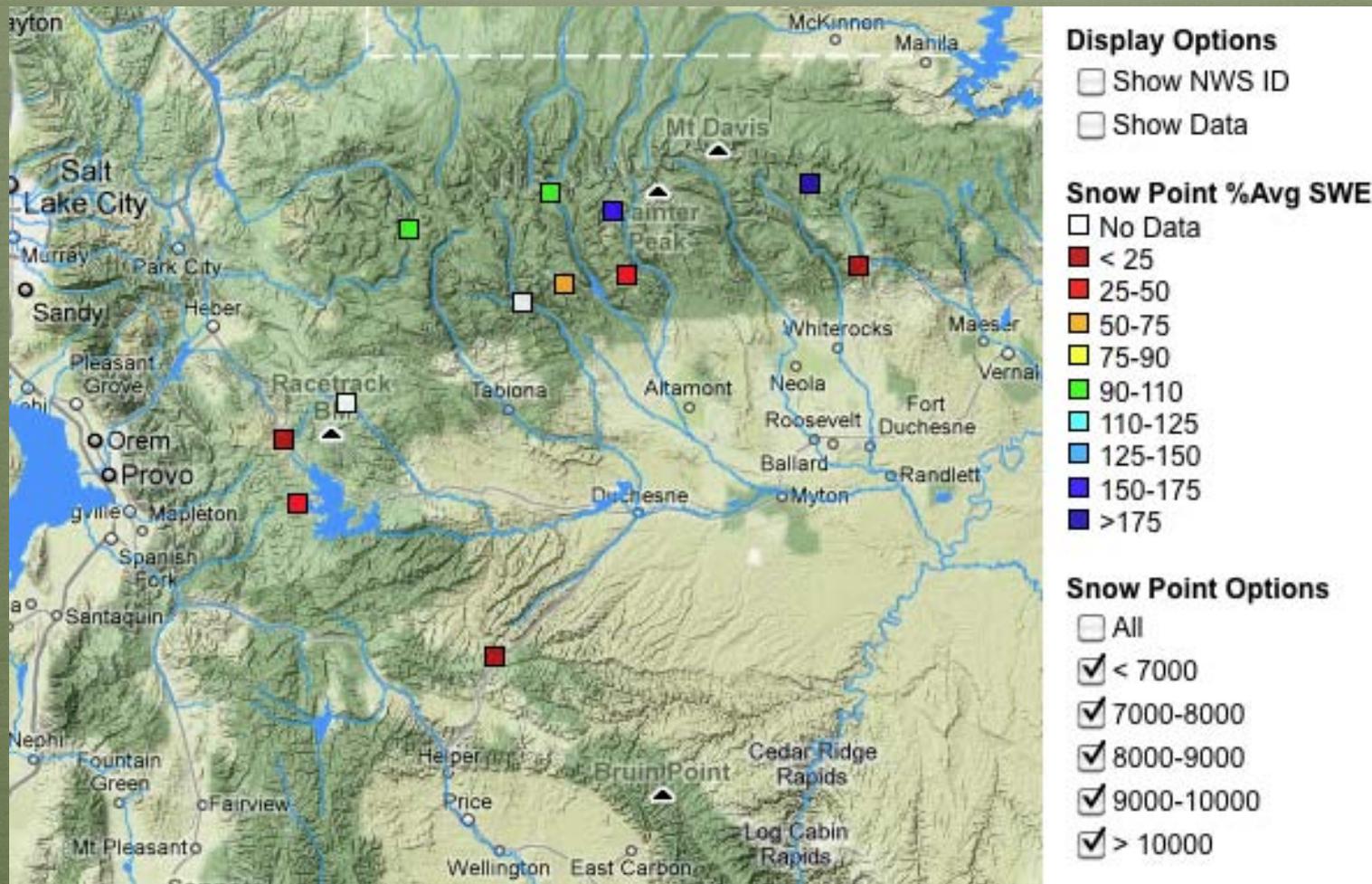


INDIAN CREEK SNOTEL for Water Year 2010

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



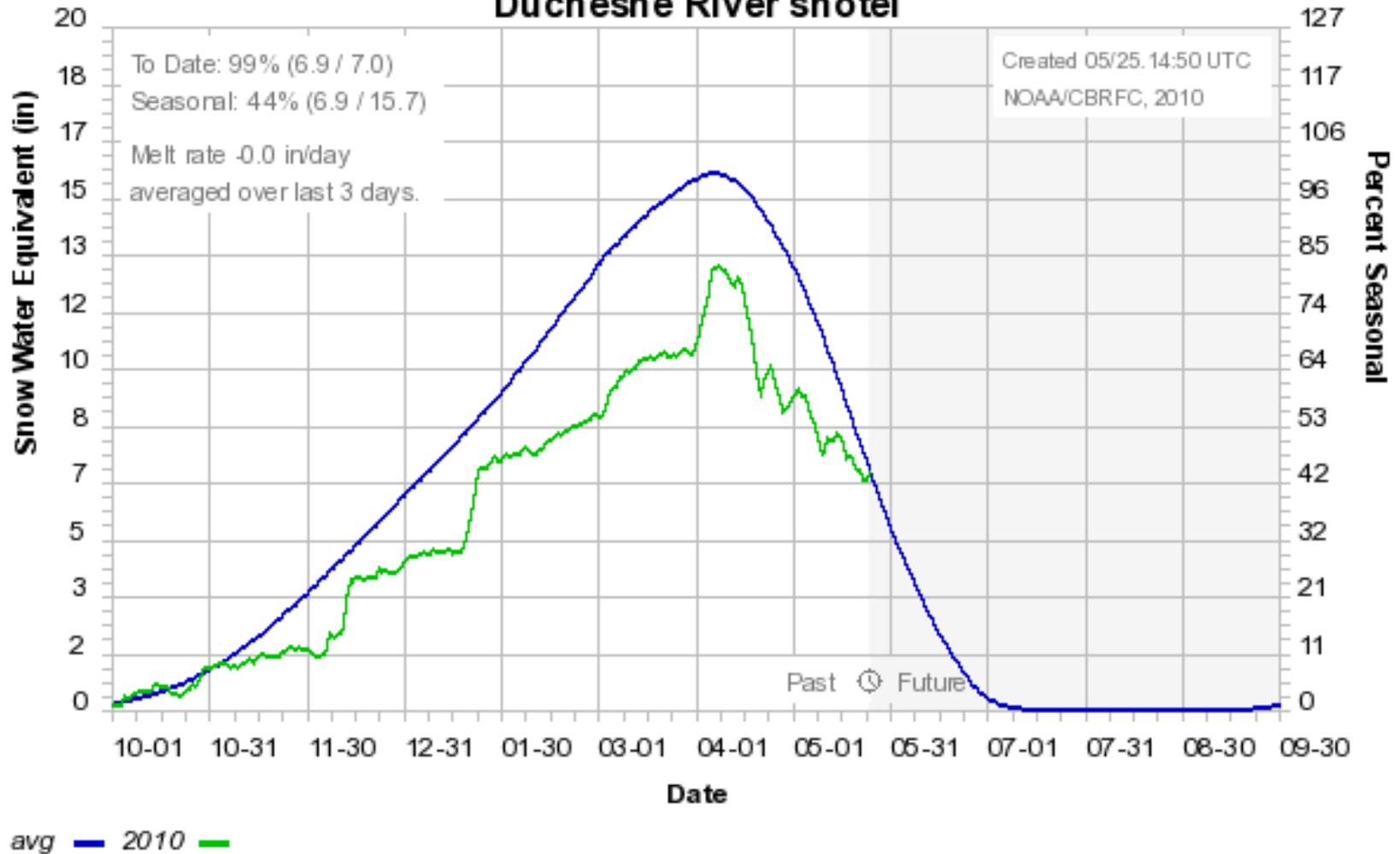
Duchesne River Basin



NATIONAL WEATHER SERVICE

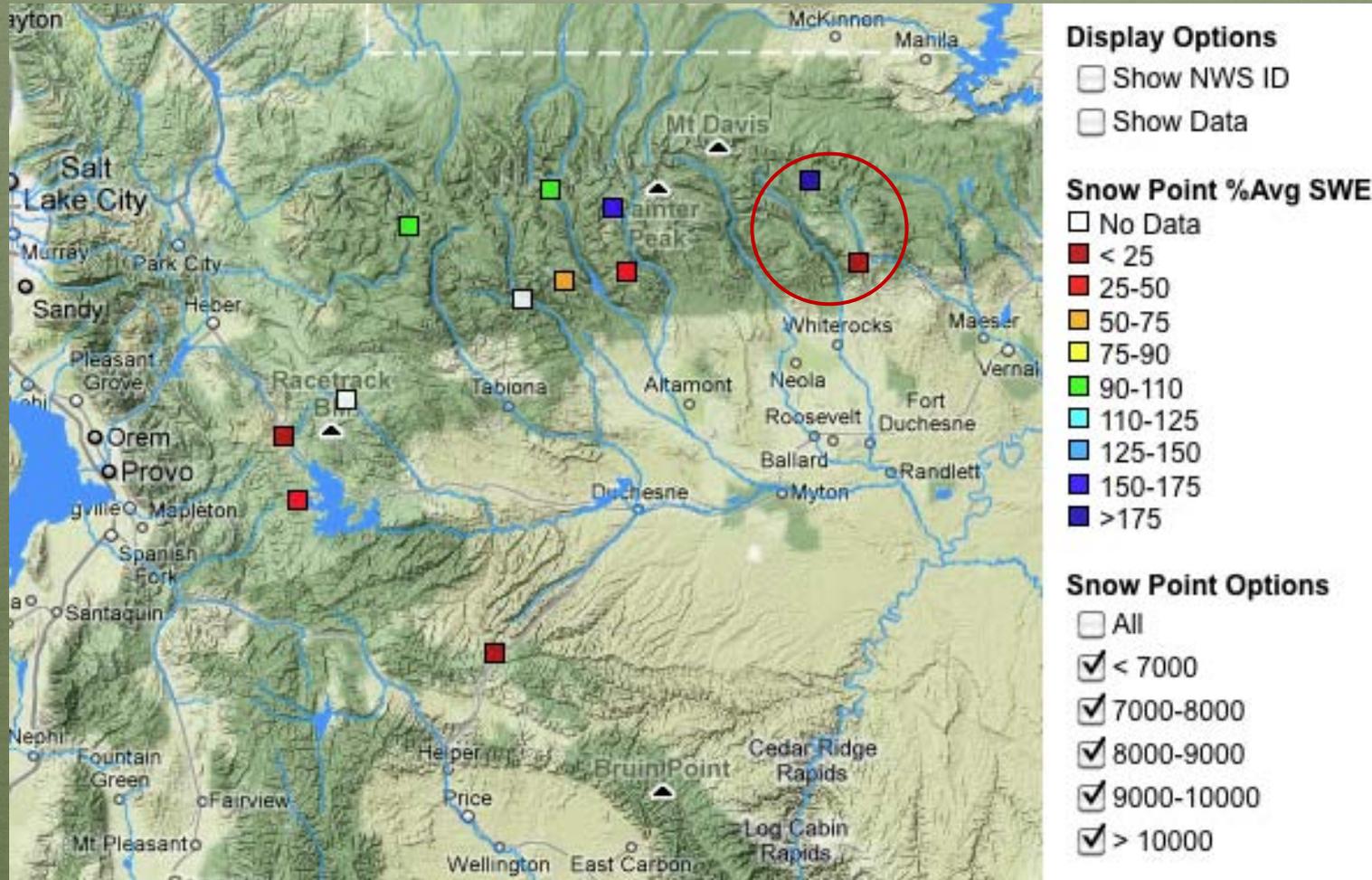
Colorado Basin River Forecast Center

Colorado Basin River Forecast Center Duchesne River snotel



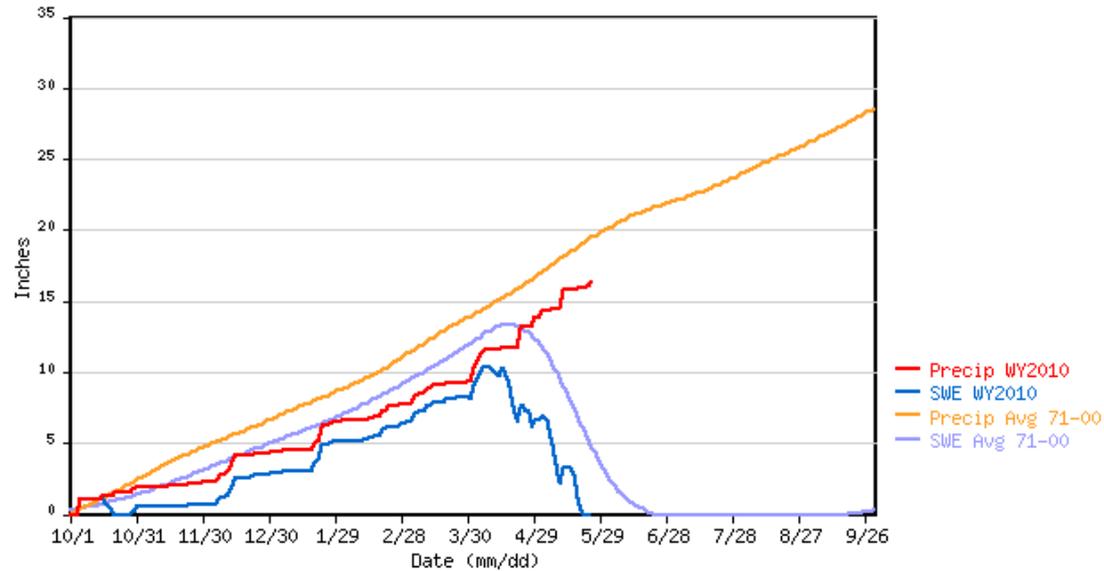
Basin snowpack: 99%
 Peak snowpack: 81% of average peak
 WYTD Precipitation percent of average: 80%

Chepeta and Mosby Mtn.



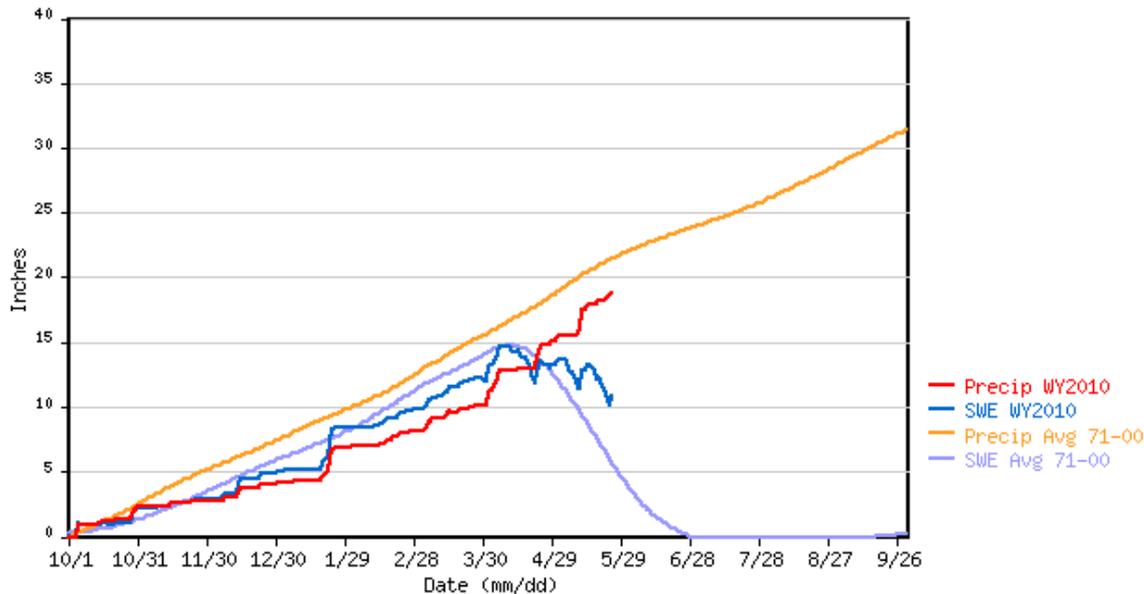
MOSBY MTN. SNOTEL for Water Year 2010

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

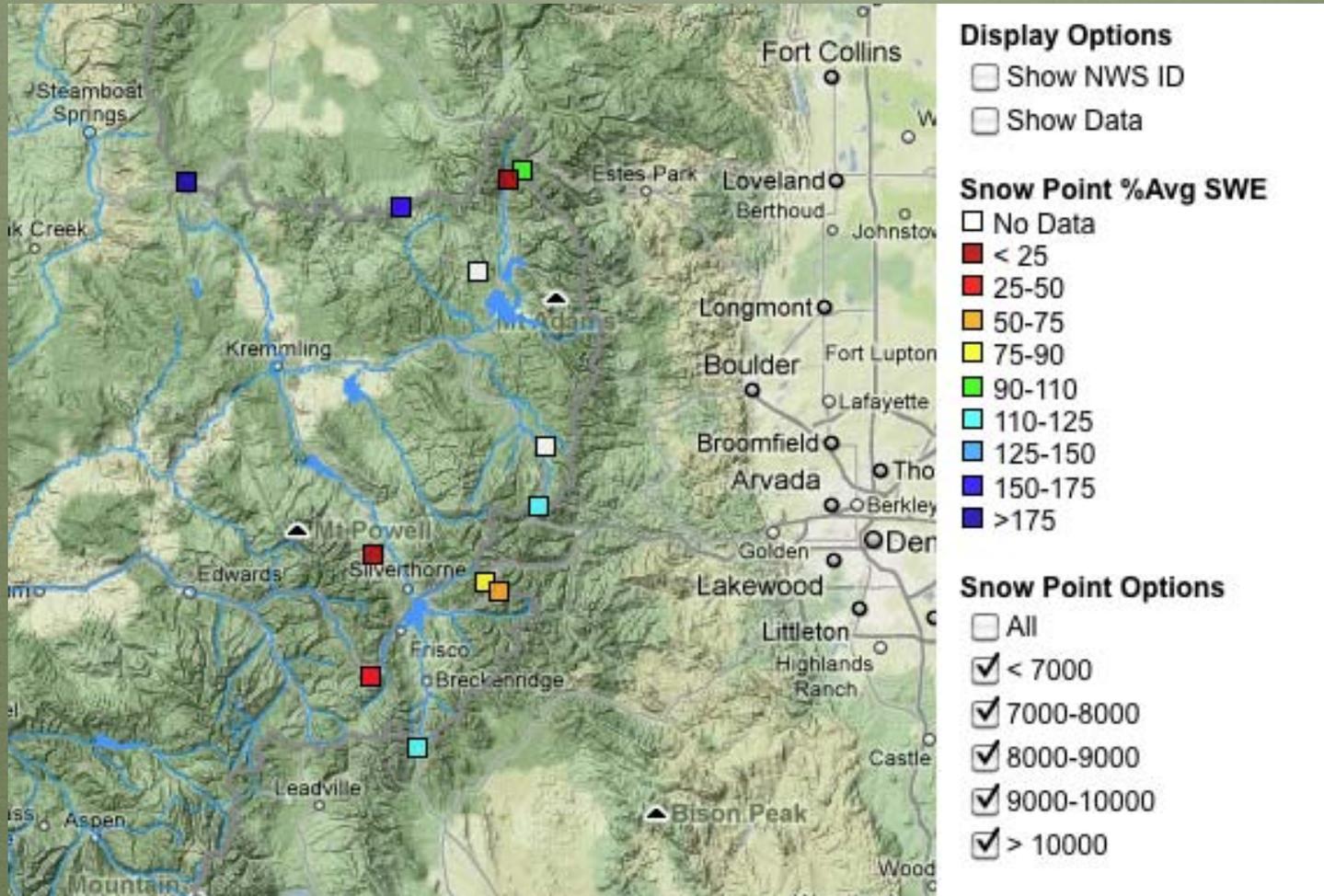


CHEPETA SNOTEL for Water Year 2010

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

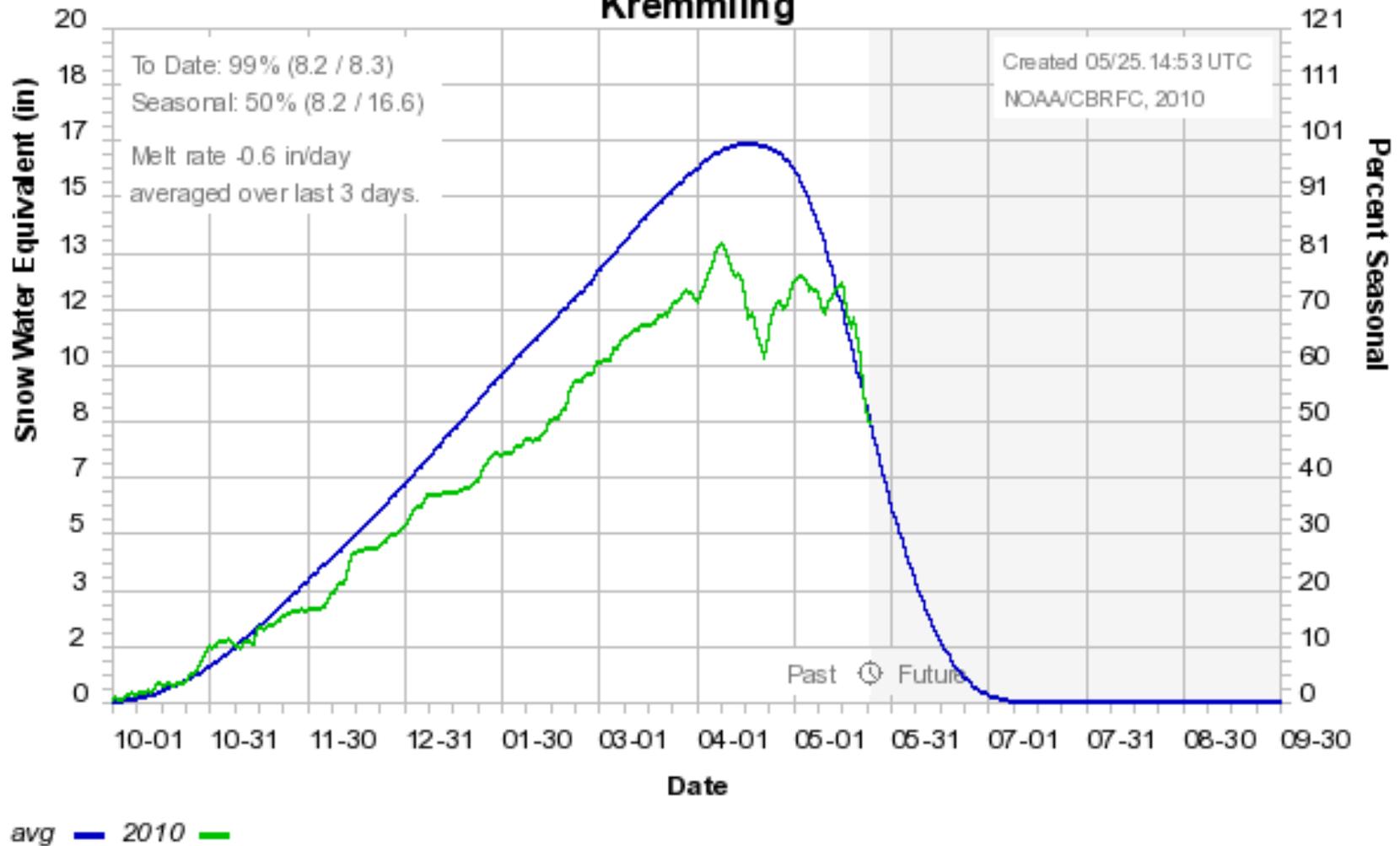


Upper Colorado above Kremmling



Colorado Basin River Forecast Center

Kremmling

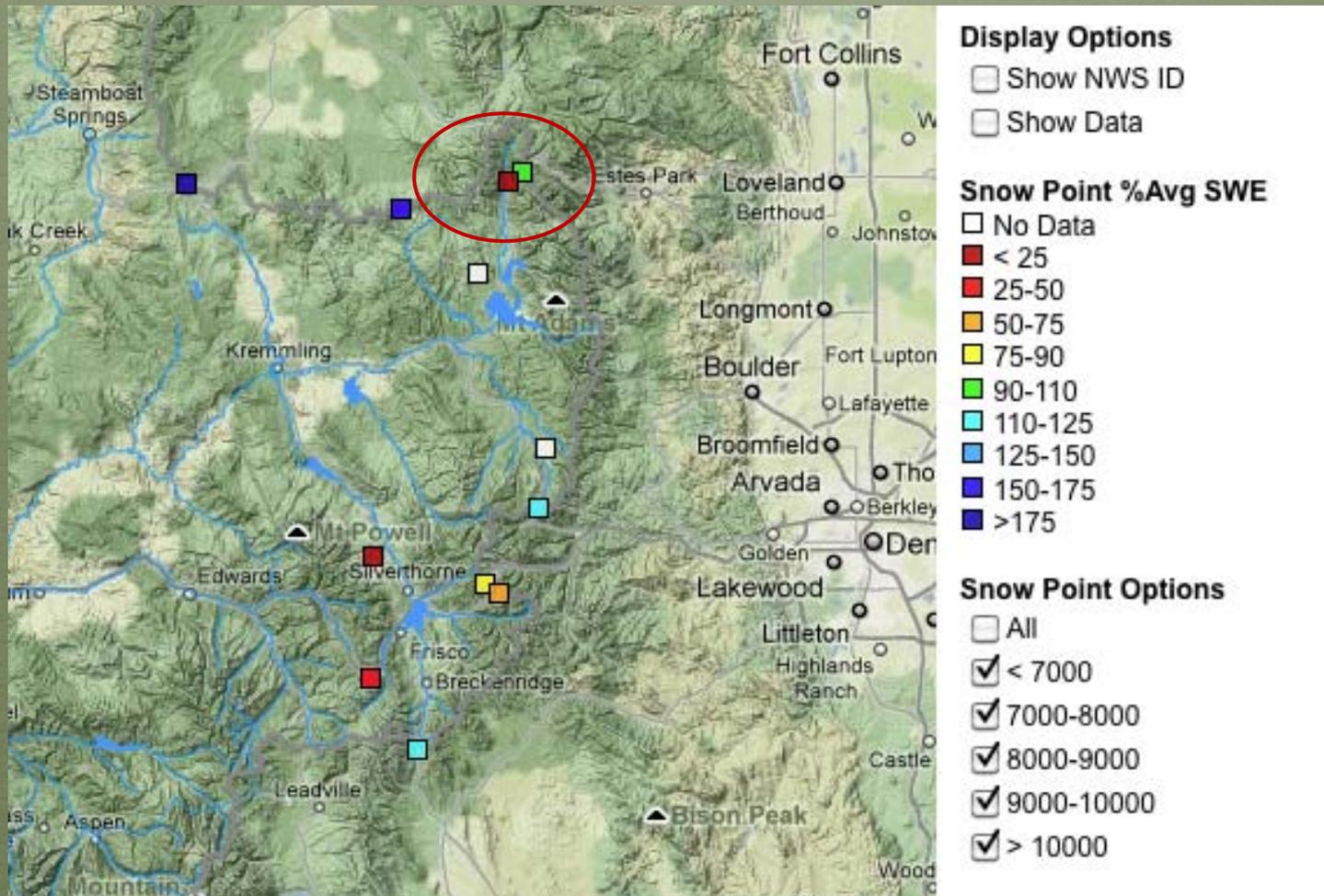


Basin Snowpack: 99%

Peak snowpack: 79% of average peak

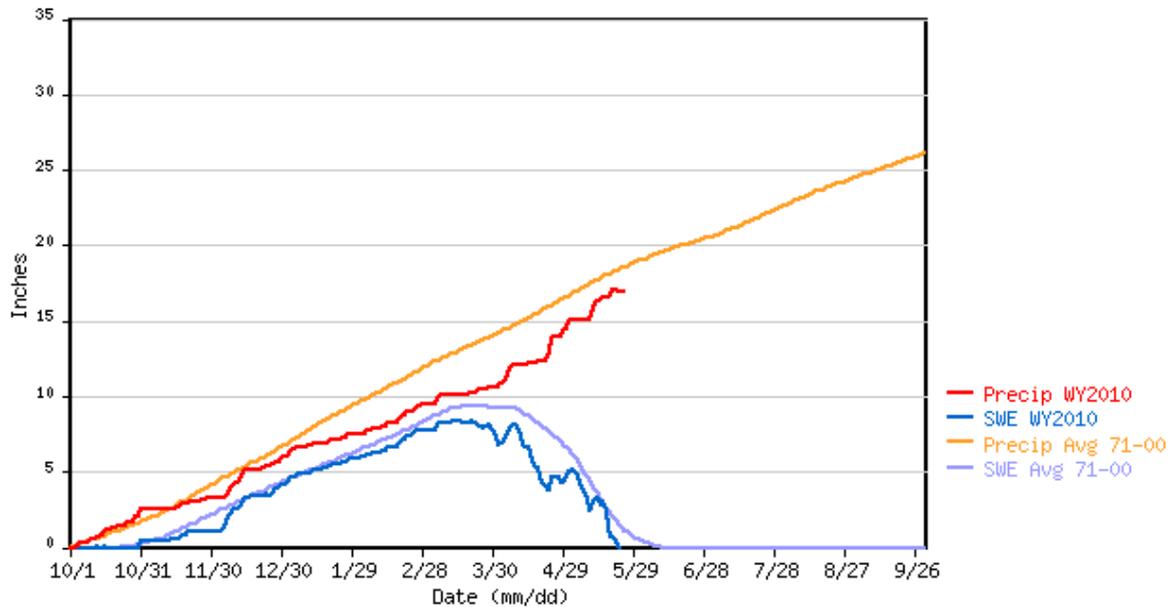
WYTD Precipitation percent of average: 90%

Lake Irene and Phantom Valley



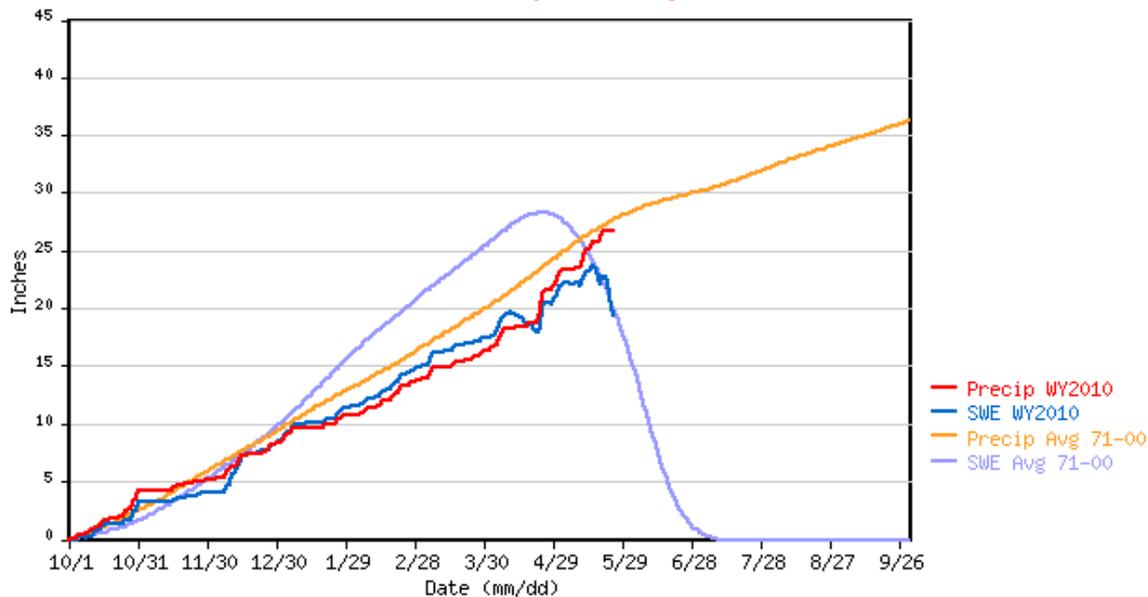
PHANTOM VALLEY SNOTEL for Water Year 2010

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

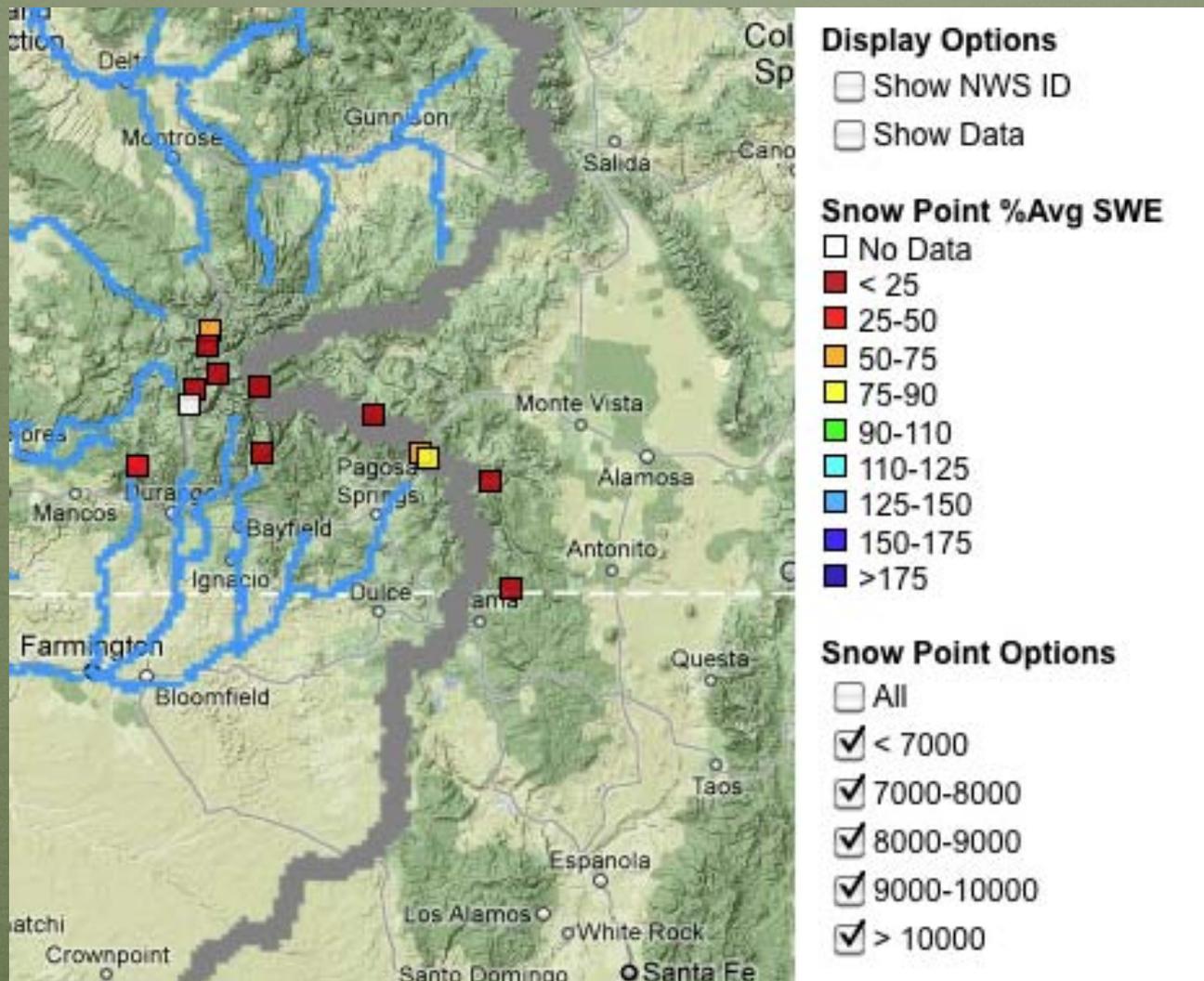


LAKE IRENE SNOTEL for Water Year

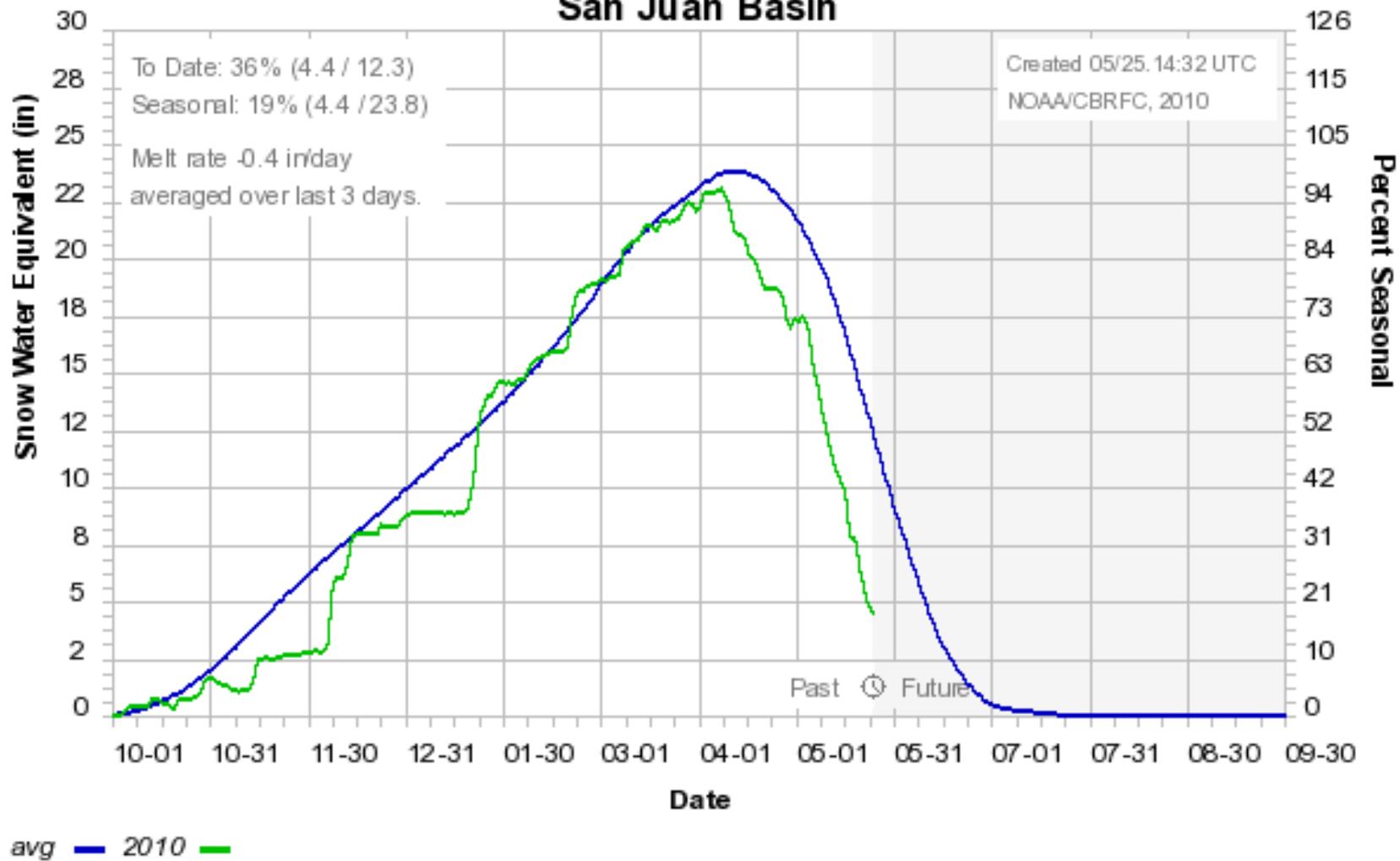
*** Provisional Data, Subject to Change ***



San Juan Basin



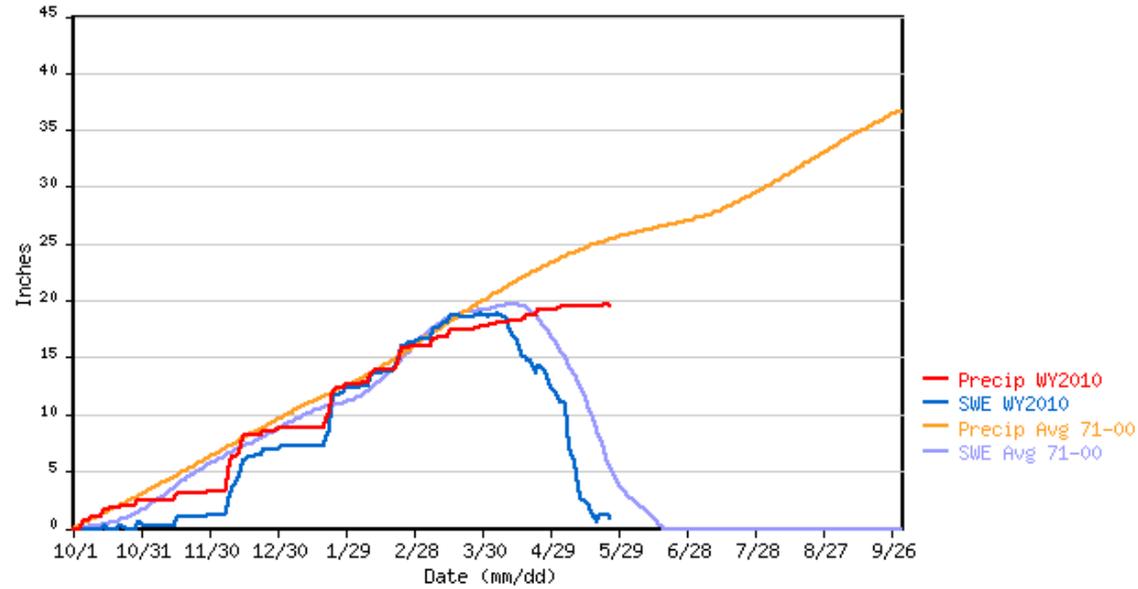
Colorado Basin River Forecast Center San Juan Basin



Basin Snowpack: 36%
 Peak snowpack: 97% of average peak
 WYTD Precipitation percent of average: 89%

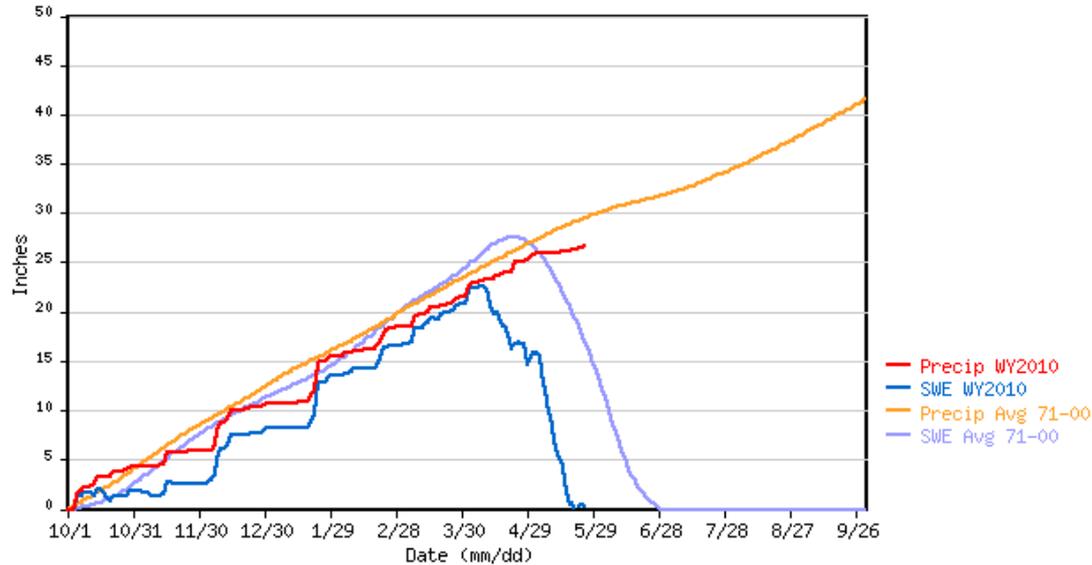
VALLECITO SNOTEL for Water Year 2010

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



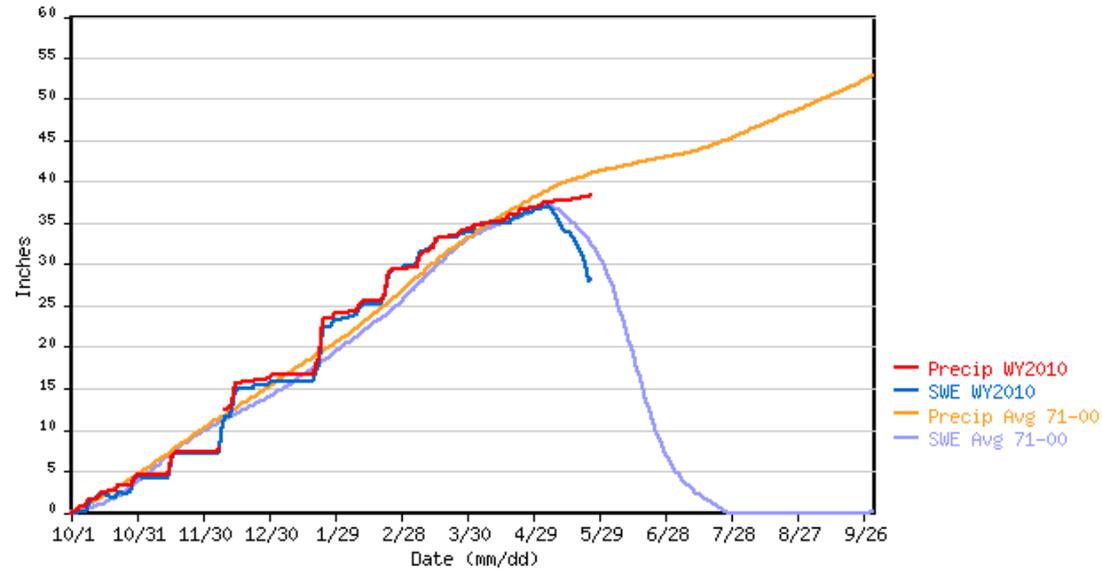
BEARTOWN SNOTEL for Water Year 2010

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



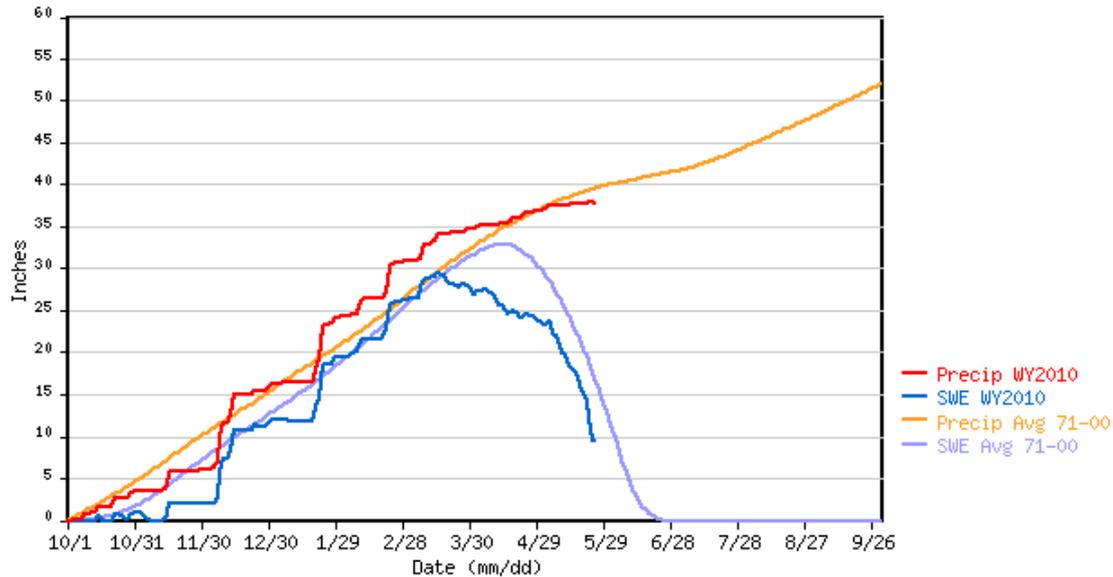
WOLF CREEK SUMMIT SNOTEL for Water Year 2010

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



UPPER SAN JUAN SNOTEL for Water Year 2010

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

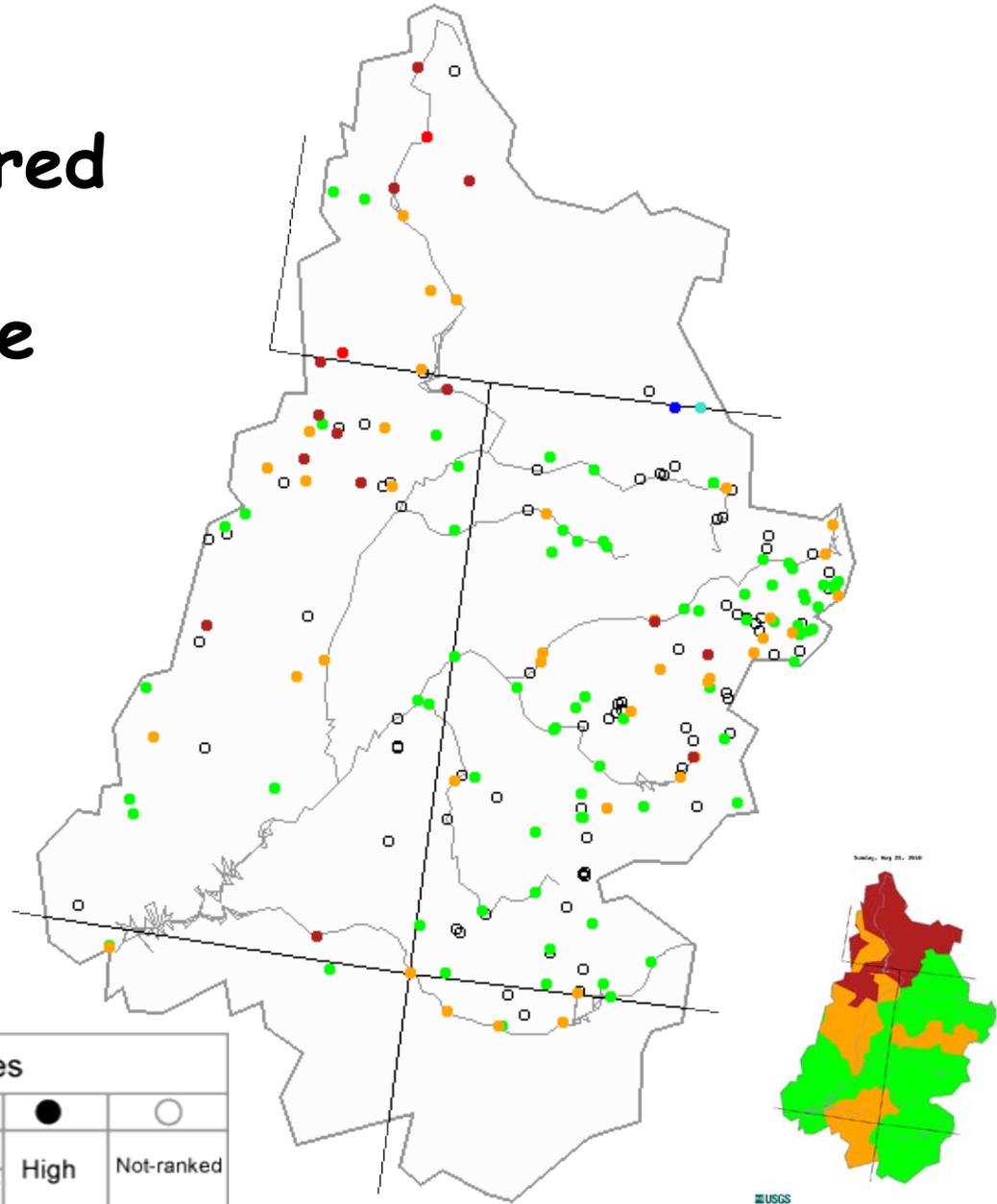


Streamflow Update

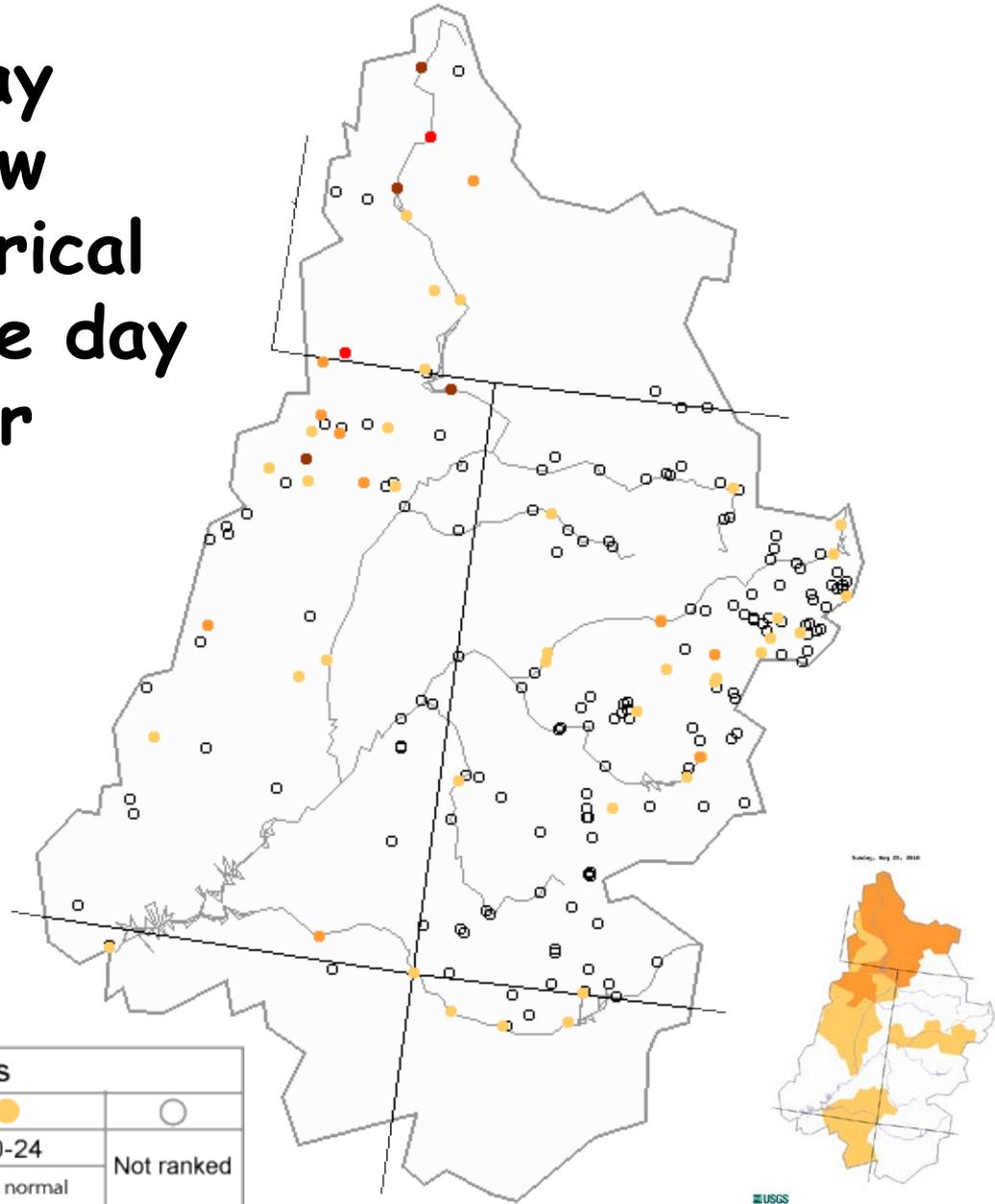
Kirk Miller USGS - Wyoming



7-day average streamflow compared to historical streamflow for the day of the year (Upper Colorado)

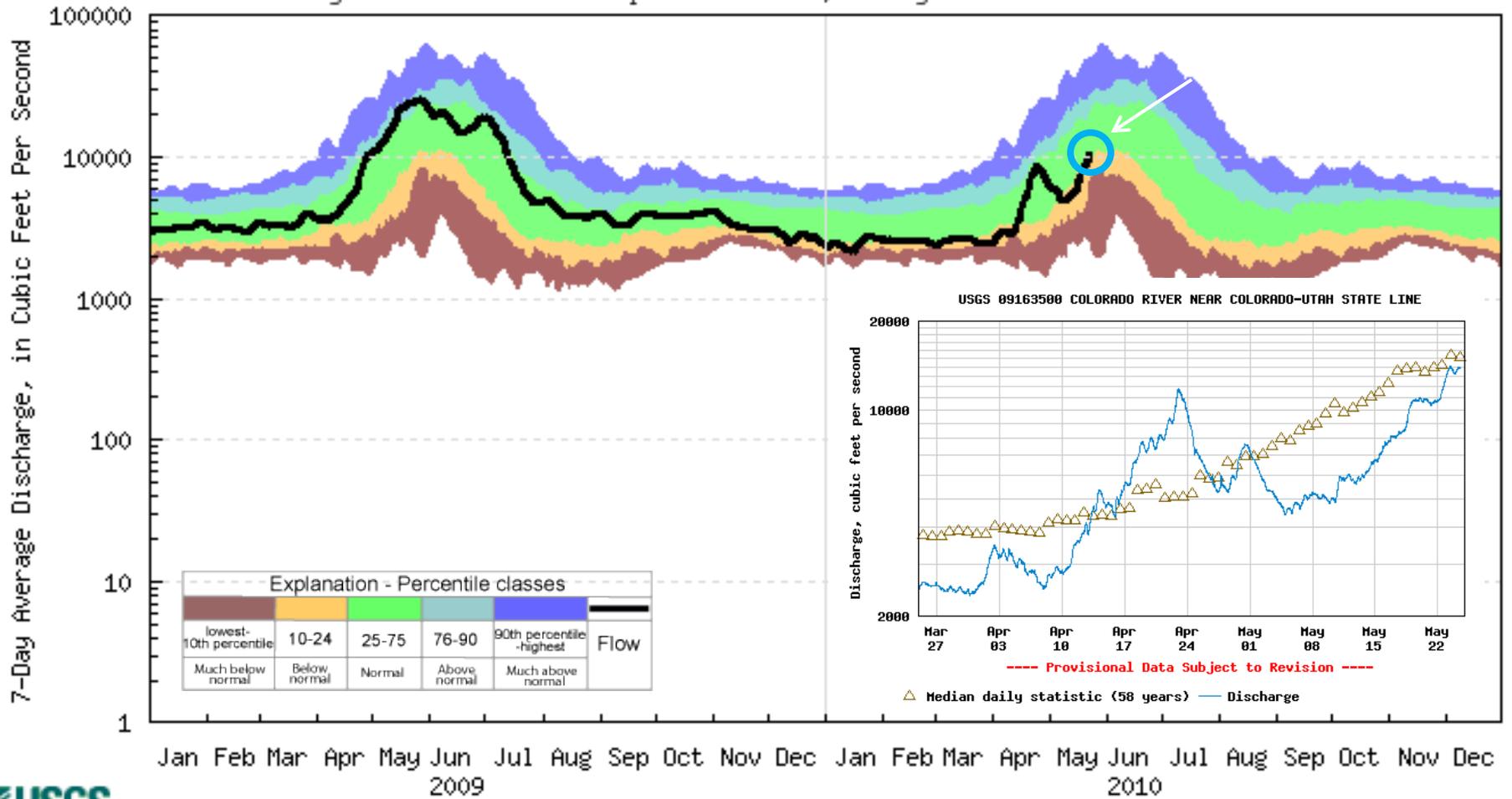


Below normal 7-day average streamflow compared to historical streamflow for the day of the year (Upper Colorado)



| Explanation - Percentile classes | | | | |
|----------------------------------|---------------------------|-----------------------------|--------------|------------|
| ● | ● | ● | ● | ○ |
| New low | ≤5 | 6-9 | 10-24 | Not ranked |
| Extreme hydrologic drought | Severe hydrologic drought | Moderate hydrologic drought | Below normal | |

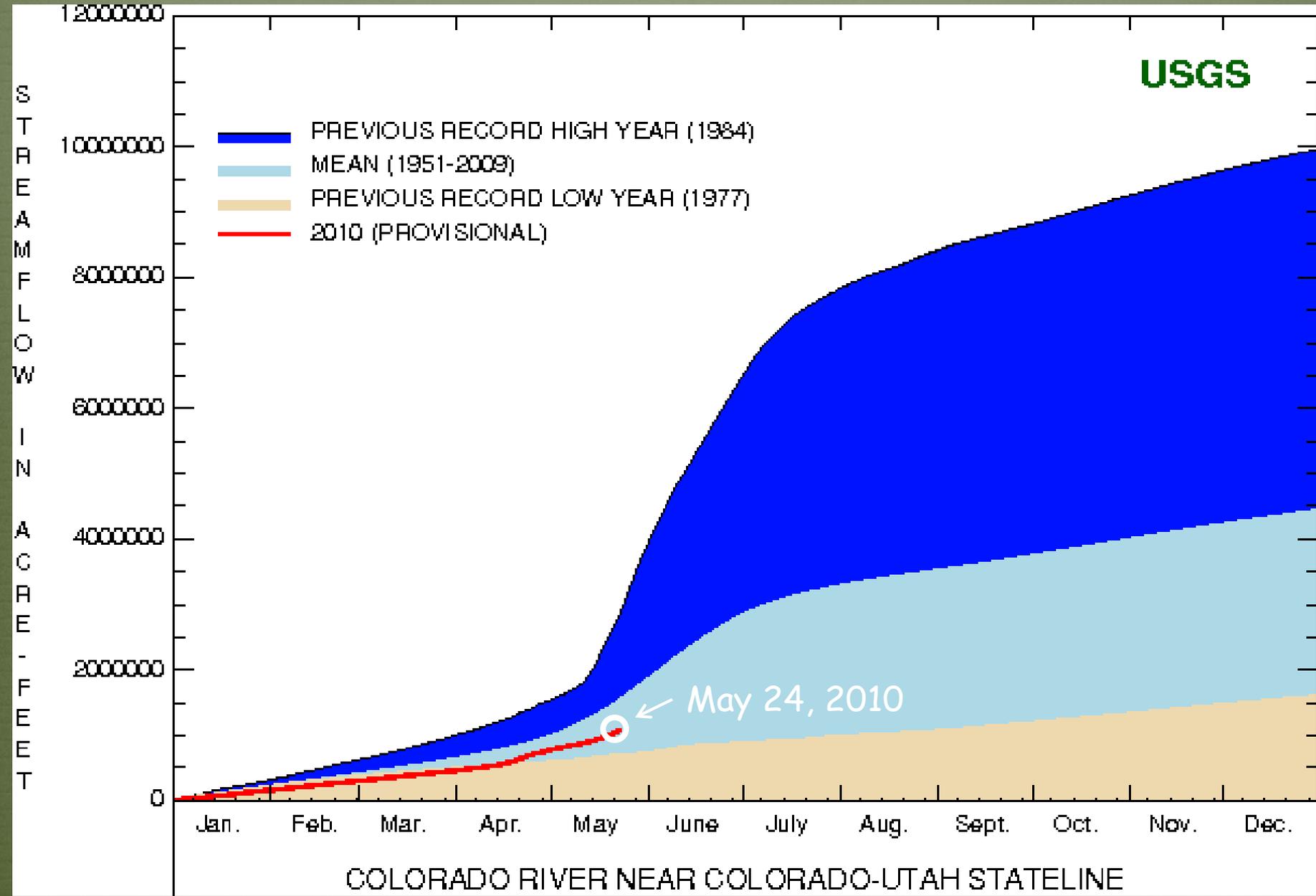
USGS 09163500 COLORADO RIVER NEAR COLORADO-UTAH STATE LINE
 Drainage Area: 17843 Square Miles, Length of Record: 58 Years



Last updated: 2010-05-24

USGS

- PREVIOUS RECORD HIGH YEAR (1984)
- MEAN (1951-2009)
- PREVIOUS RECORD LOW YEAR (1977)
- 2010 (PROVISIONAL)

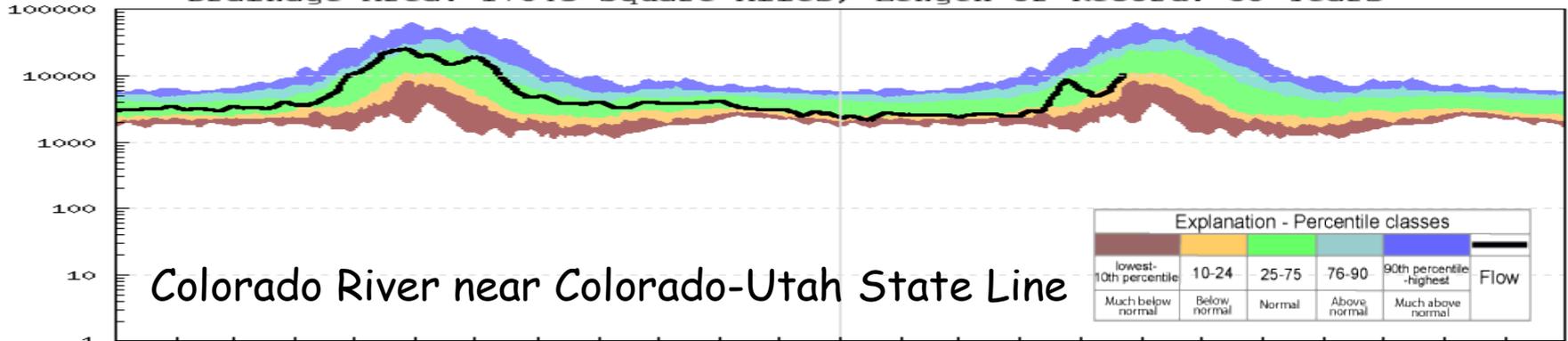


COLORADO RIVER NEAR COLORADO-UTAH STATELINE

May 24, 2010

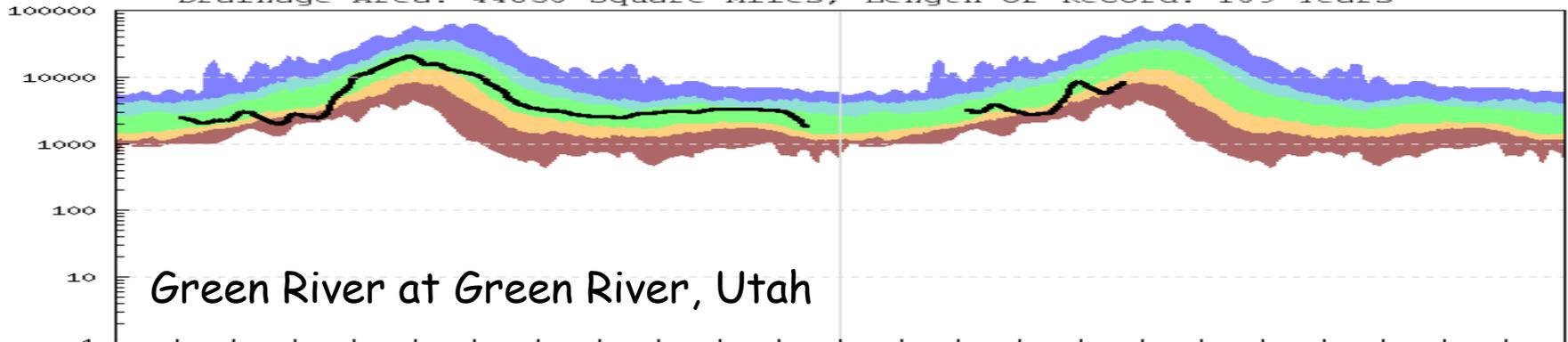
USGS 09163500 COLORADO RIVER NEAR COLORADO-UTAH STATE LINE
 Drainage Area: 17843 Square Miles, Length of Record: 58 Years

7-Day Average Discharge, in Cubic Feet Per Second



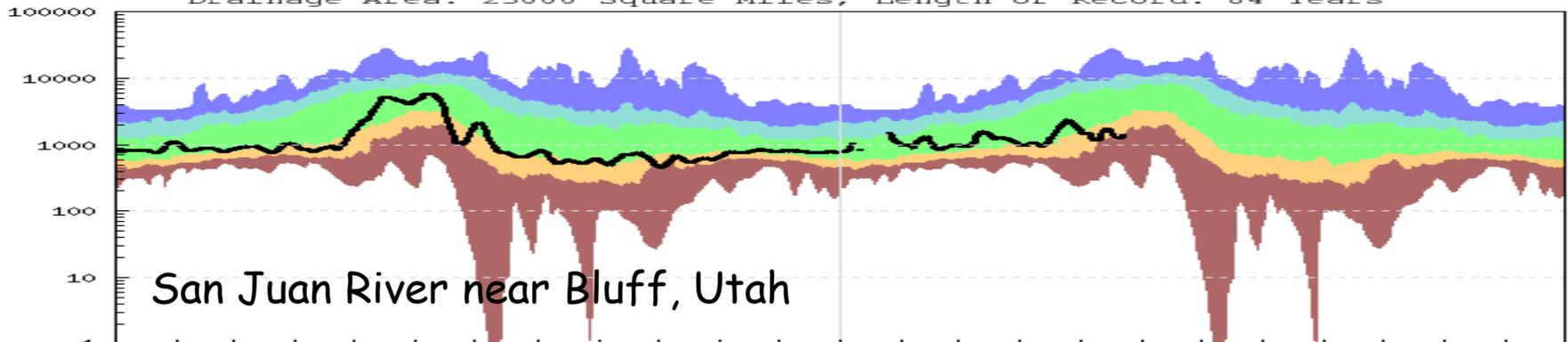
USGS 09315000 GREEN RIVER AT GREEN RIVER, UT
 Drainage Area: 44850 Square Miles, Length of Record: 109 Years

7-Day Average Discharge, in Cubic Feet Per Second



USGS 09379500 SAN JUAN RIVER NEAR BLUFF, UT
 Drainage Area: 23000 Square Miles, Length of Record: 84 Years

7-Day Average Discharge, in Cubic Feet Per Second

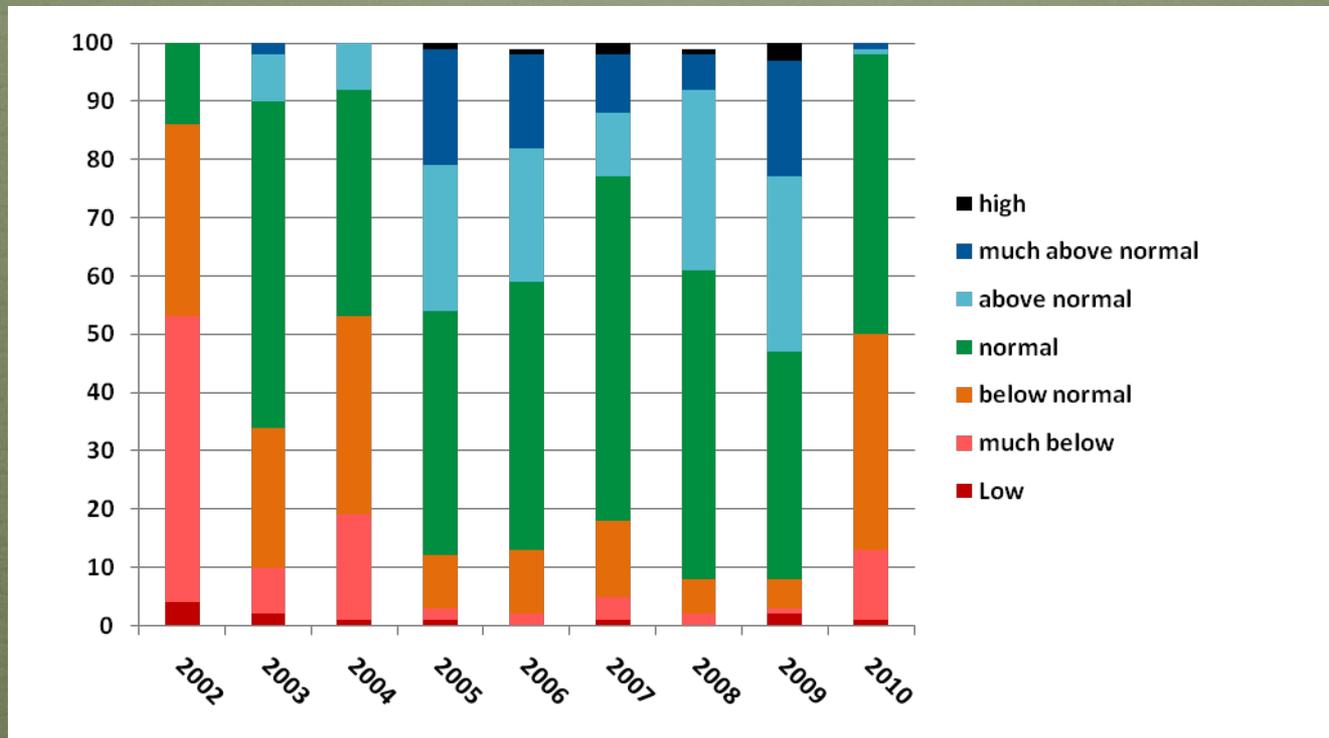


Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2009 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2010

Last updated: 2010-05-24

May 22

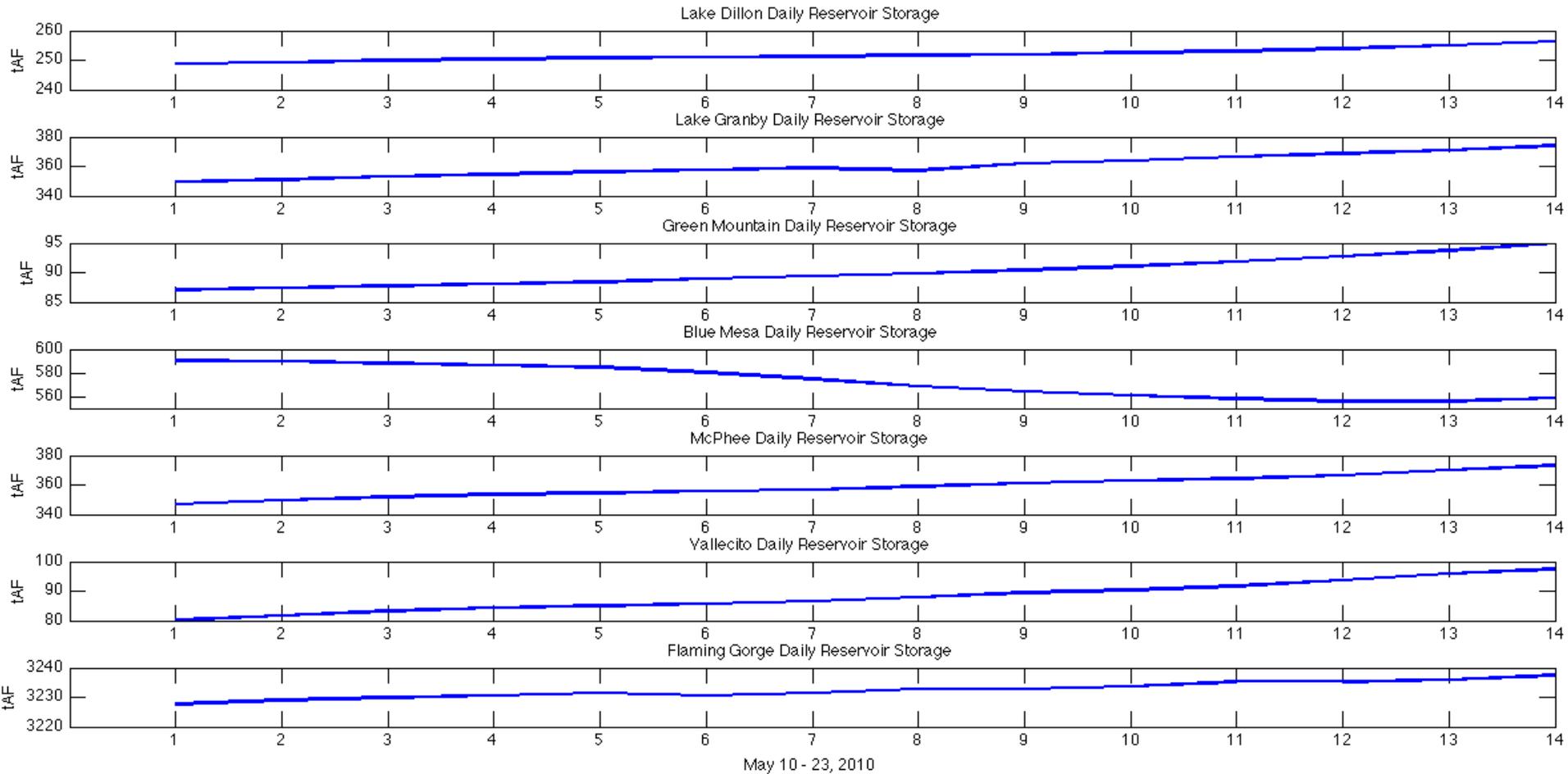
Percentage of Streamgages per Percentile Class 7-day Average Streamflow



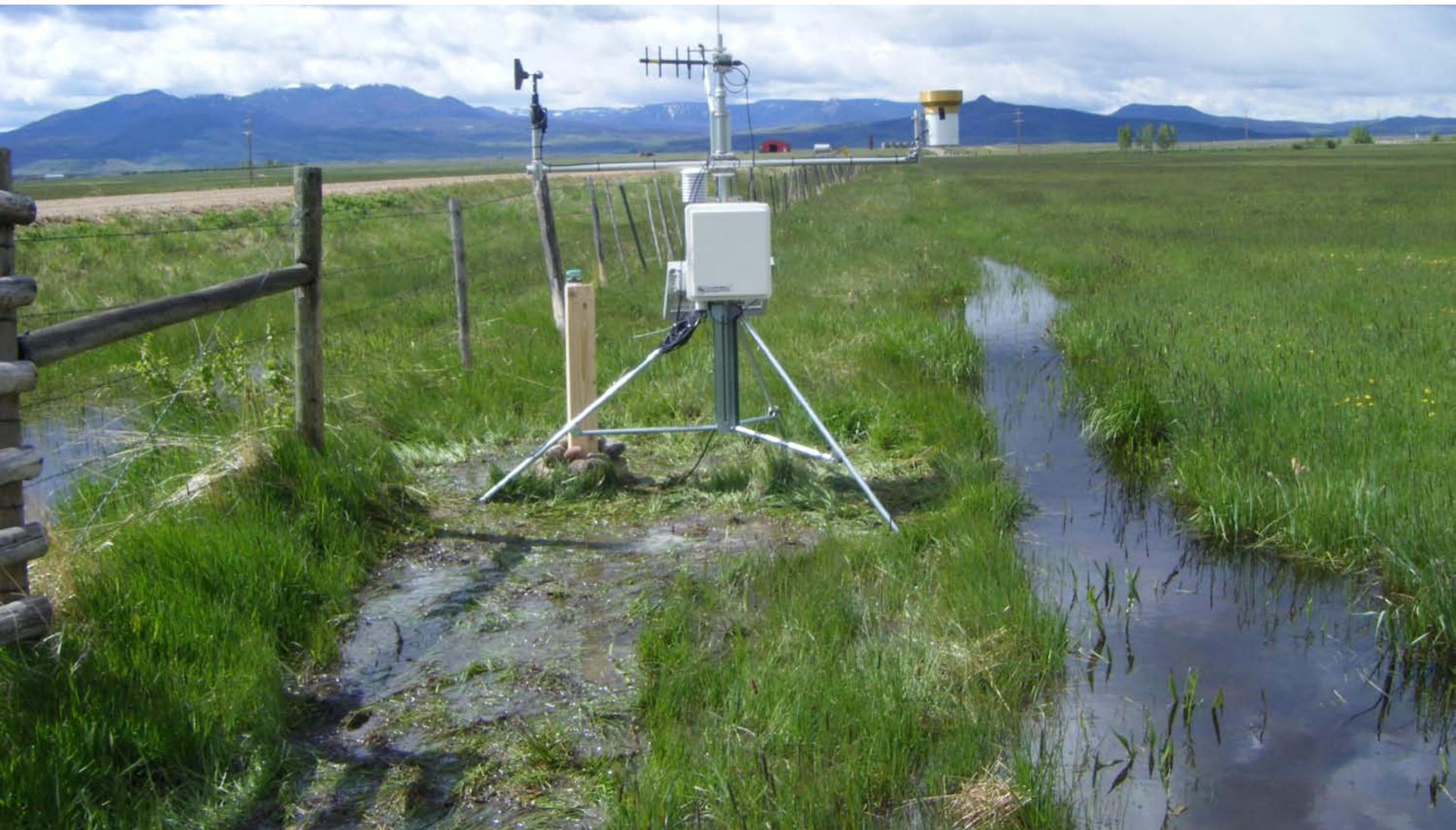
Reservoir Update



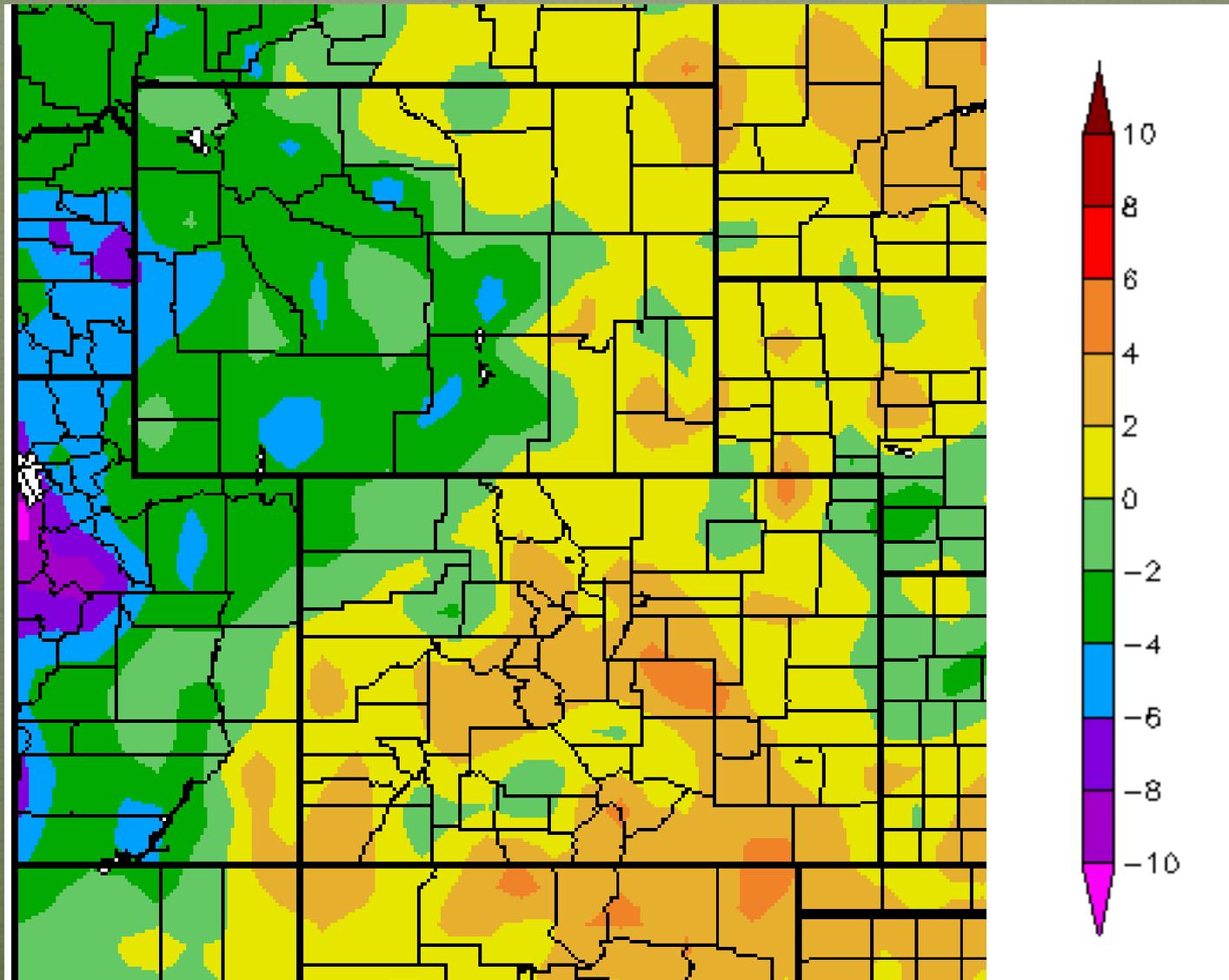
Daily Reservoir Level Time Series for Two Weeks



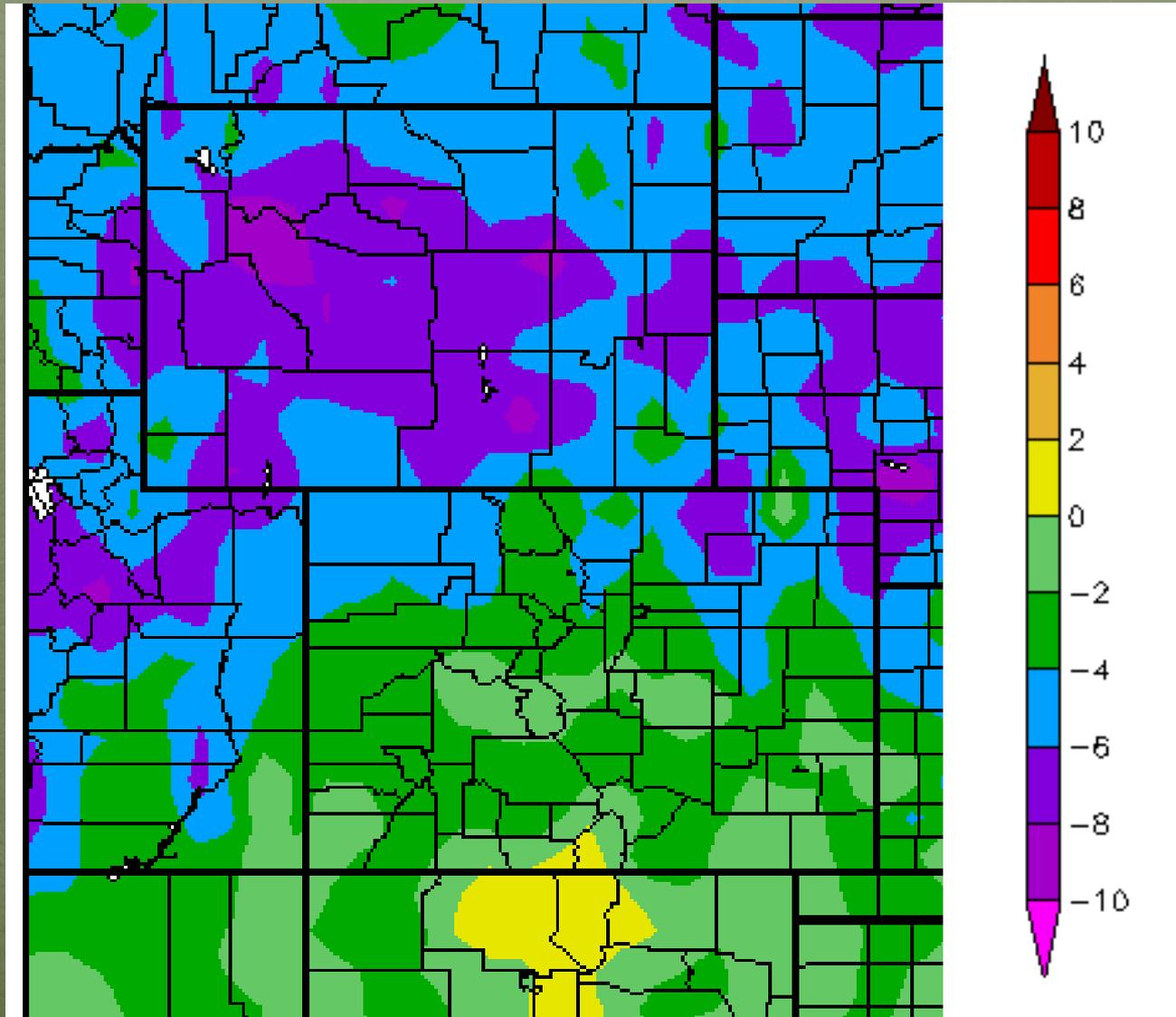
Water Demand



Temperature Departure from Normal 5/18/2010 – 5/24/2010

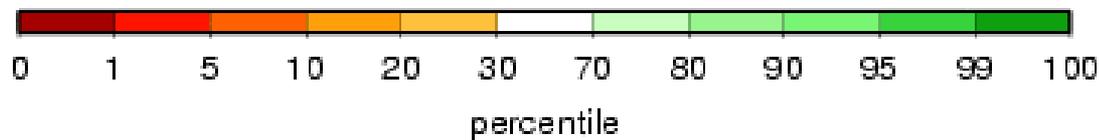
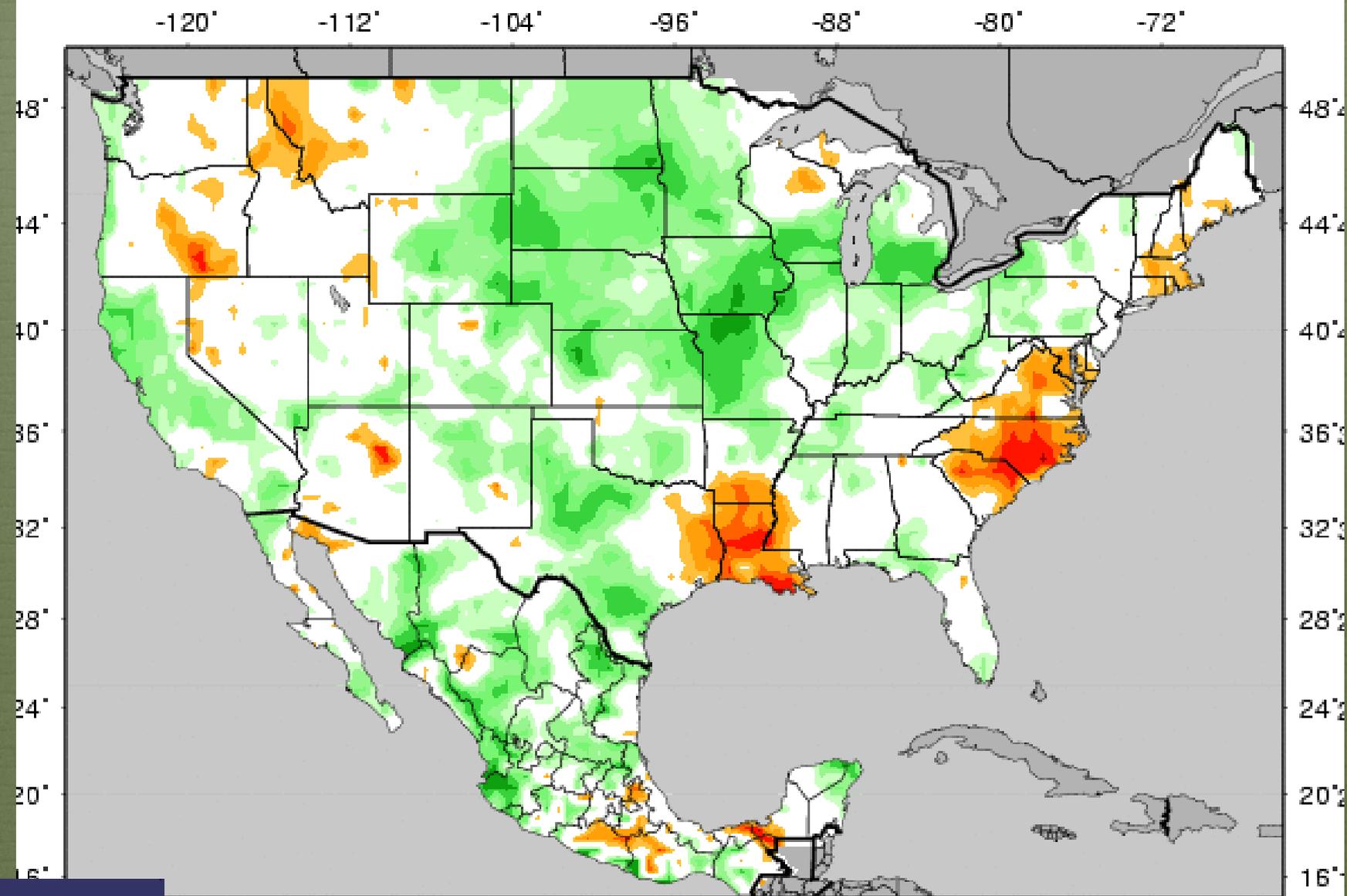


MTD Temperature Departure from Normal 5/1/2010 – 5/24/2010



VIC Total Moisture Storage Percentiles (wrt/ 1916-2004)

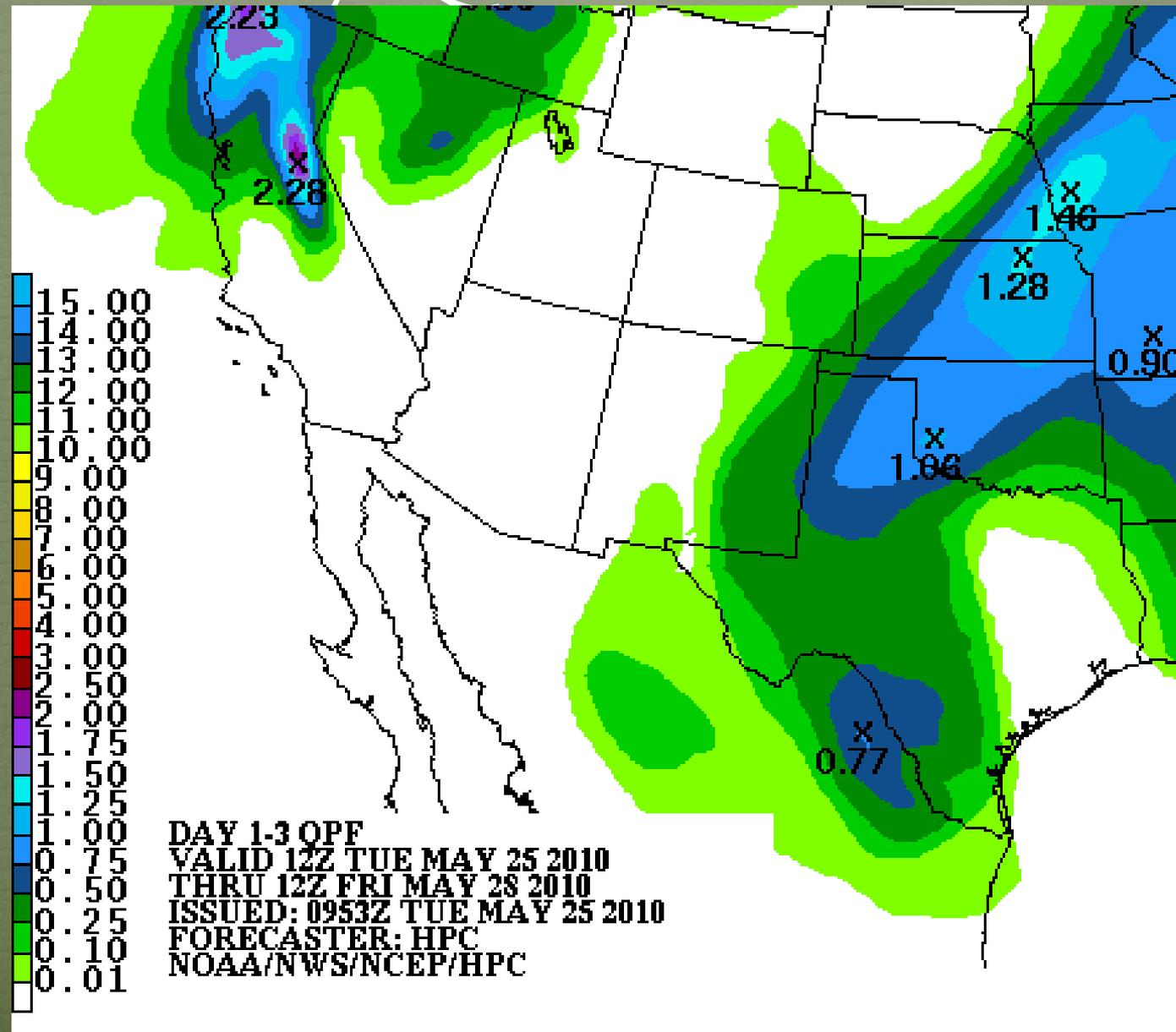
20100523



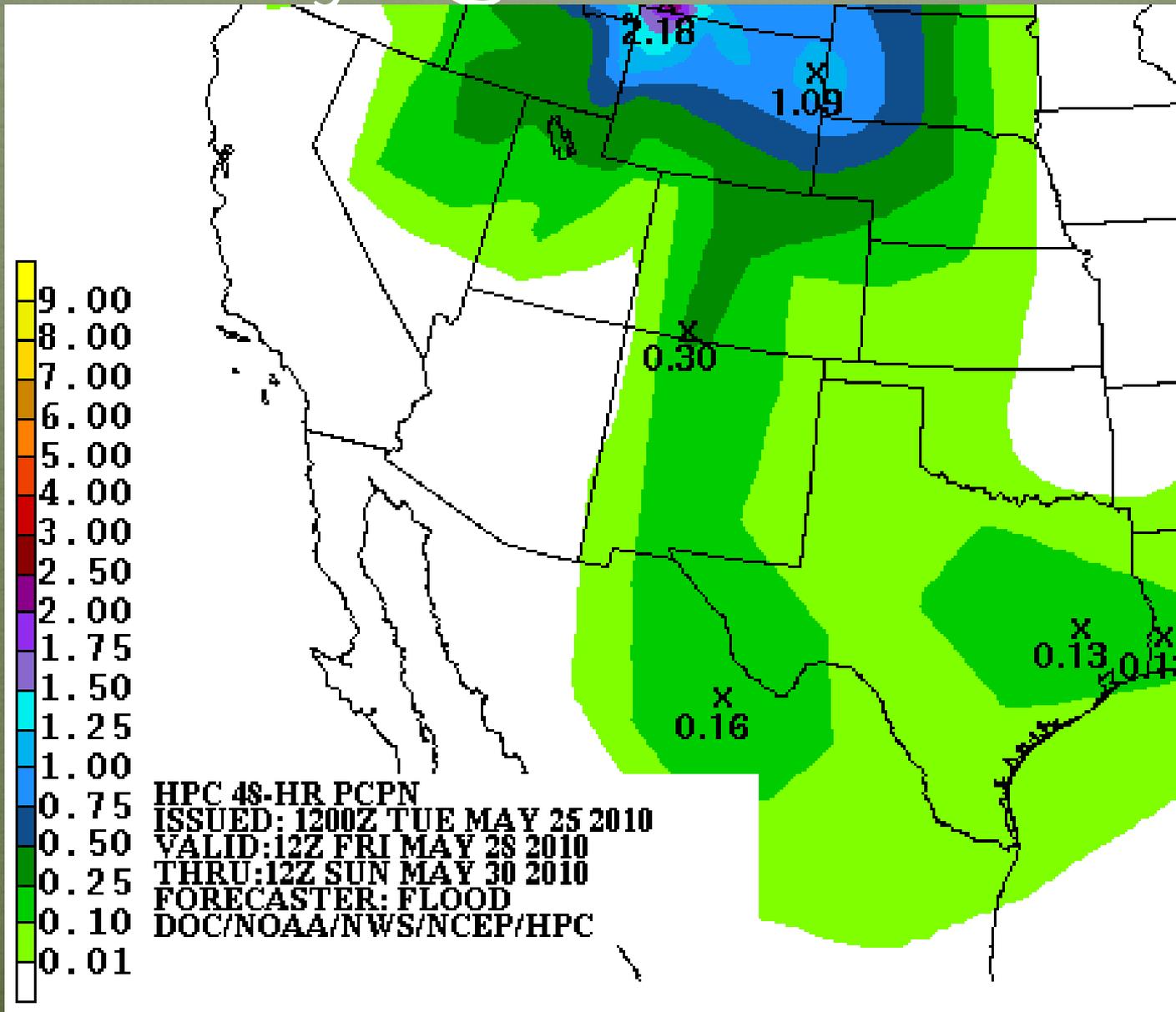
Precipitation Forecast



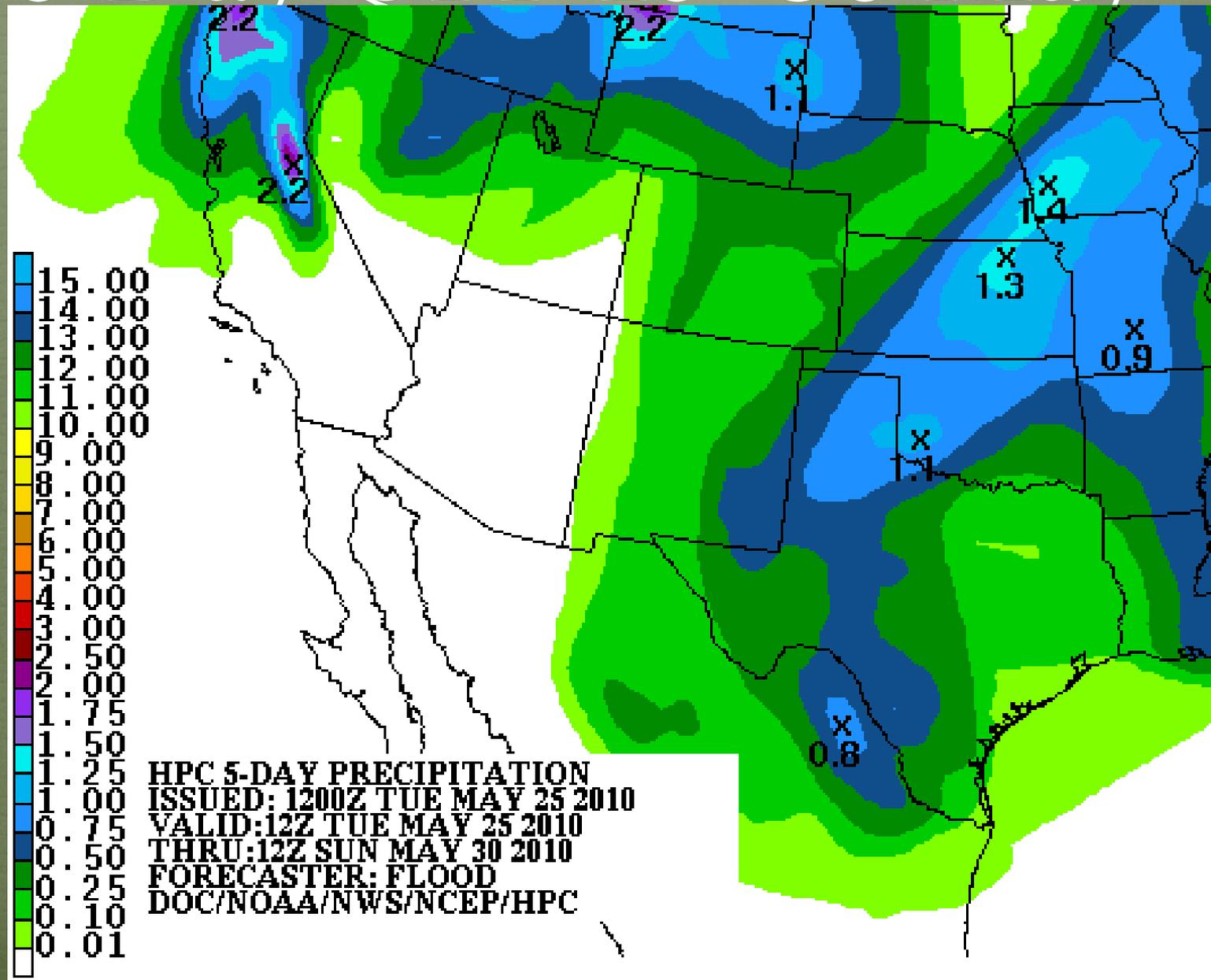
1-3 Day QPF 25- 28 May



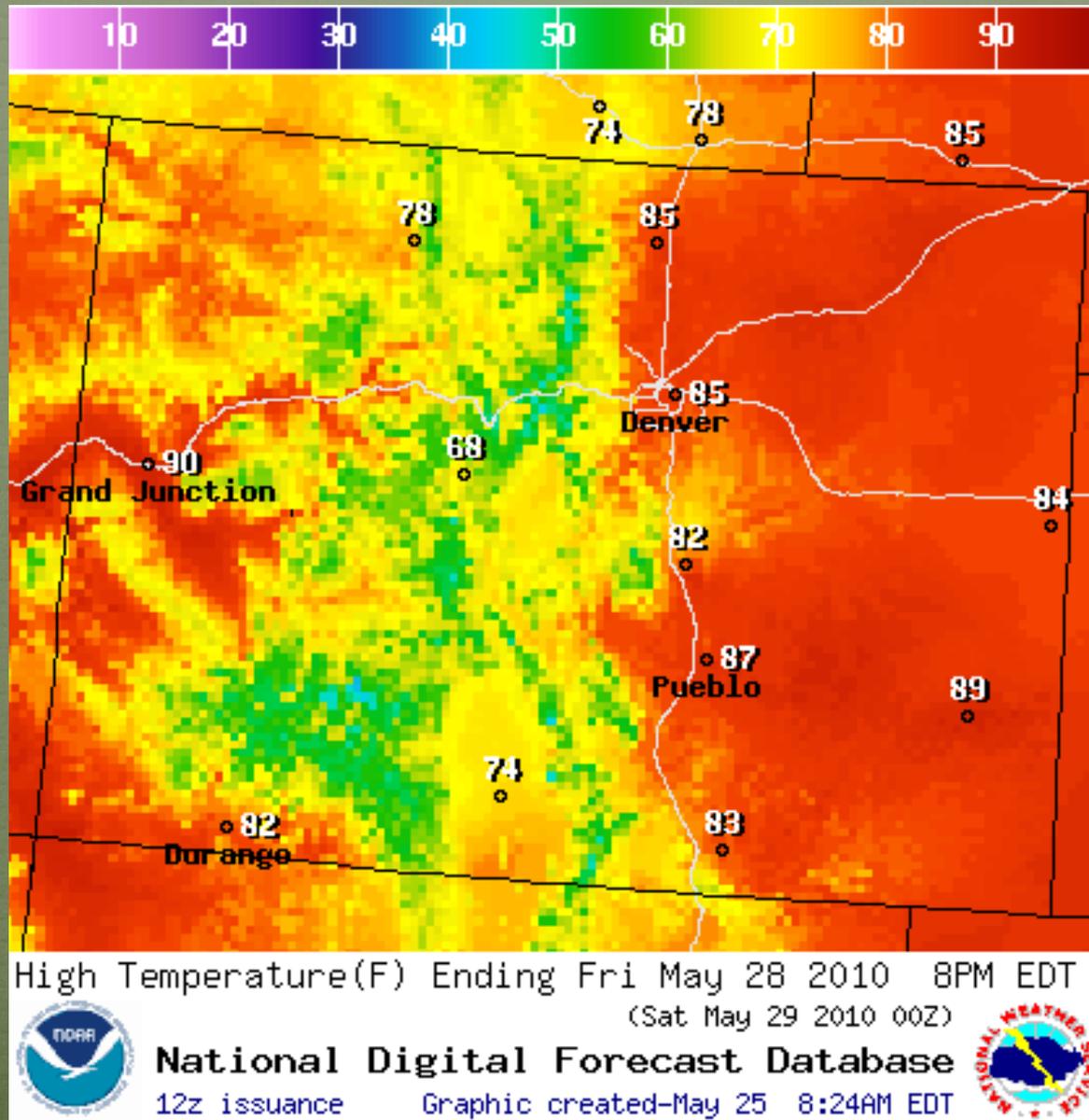
4-5 Day QPF 28- 30 May



5 Day OPF 25- 30 May



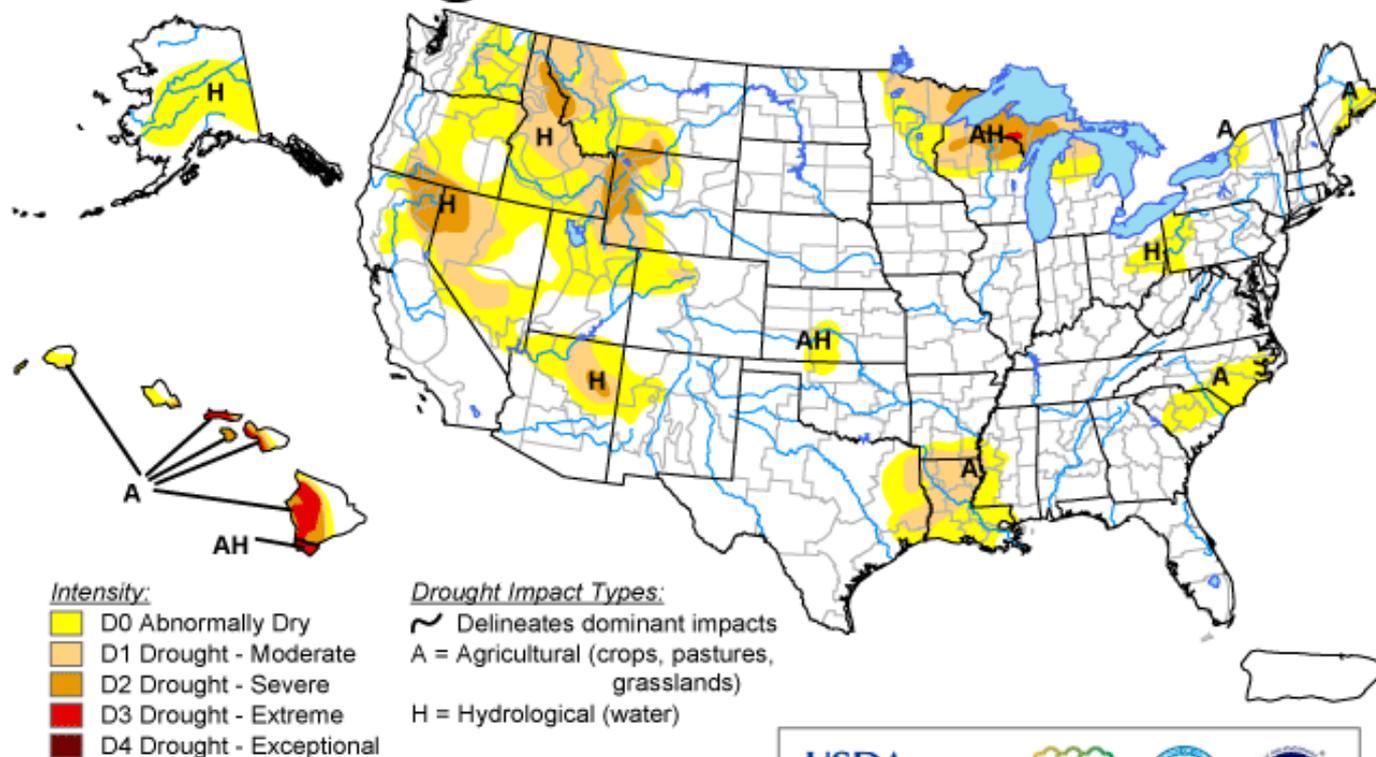
Maximum Temperature Valid 28 May 2010



Recommendations

U.S. Drought Monitor

May 18, 2010
Valid 8 a.m. EDT



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

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

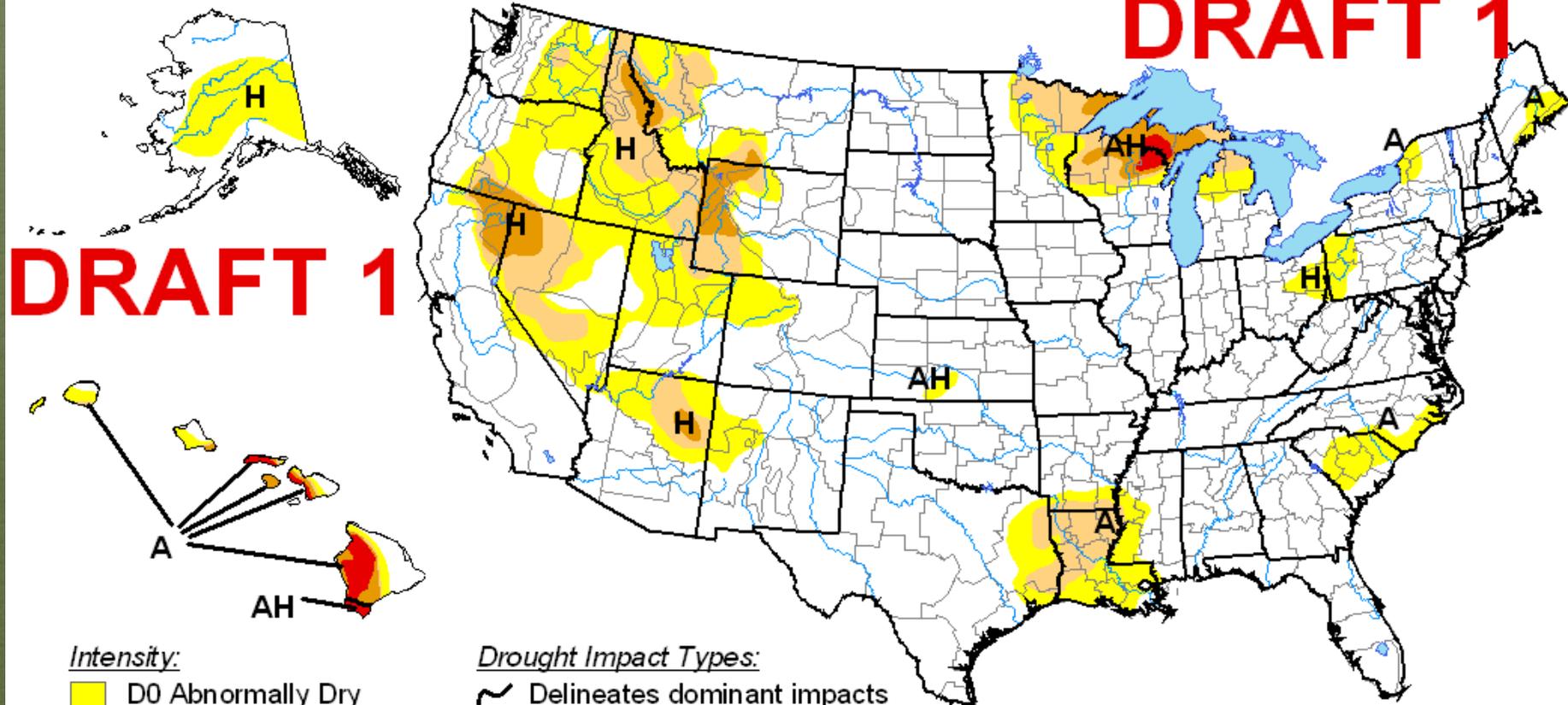
Released Thursday, May 20, 2010

Author: Eric Luebehusen, U.S. Department of Agriculture

U.S. Drought Monitor

May 25, 2010
Valid 7 a.m. EST

DRAFT 1



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>

DRAFT 1



Released Thursday, May 27, 2010

Author: Eric Luebehusen, U.S. Department of Agriculture

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NIDIS - UPPER COLORADO BASIN PILOT PROJECT

F o r m o r e i n f o r m a t i o n

Summary

More precipitation fell last week in the north central mountains of Colorado and throughout western Wyoming and northern Utah, while dry conditions continued to prevail over southwestern Colorado. Very little changes were seen in the water-year-to-date precipitation percent of average from last week, with western Wyoming seeing the biggest improvements and northeast Utah and southwest Colorado showing the largest decreases. With the warmer than average temperatures this past week in Colorado, and very low peak snowpacks in Utah and Wyoming, the majority of the lower elevation snotels in the tri-state area have nearly melted out for the season. Cooler temperatures over the past month and late season storms have kept the higher elevation stations near their current average snowpacks, with little mid-May melting, though few of those stations actually reached their normal peak snowpack values. The warmer temperatures in Colorado also meant an increase in streamflows this past week, with runoff now following along with the seasonal trend in many locations, though many sites in Wyoming and Utah still show low flows due to cooler temperatures coupled with below average snowpack. Despite recent precipitation many of southwestern Wyoming's stations in the Green River basin continue to show below average snowpack, precipitation, and streamflows consistent with moderate to locally severe drought categories. Just over 50% of all the gages in the UCRB are reporting below normal 7-day average streamflows (less than 25th percentile).

Not much precipitation is expected in the coming week. Northwestern Wyoming and eastern Colorado have the best chance of precipitation over the next 5 days. West of the divide, no large scale features are likely to bring moisture to the area, though there is the chance for convective precipitation. Today's GFS 12Z run shows precipitation for much of the state over the weekend, but this is a major change from the 0Z run, so confidence in this forecast is low. Warmer than average temperatures will prevail over the area throughout the rest of this week. After this, there is a transition to a more zonal flow with reduced chances for precipitation and near normal temperatures next week.

Draft 1 of the U.S. Drought Monitor removed the small D1 from the headwaters region of the Colorado River and a trimming of the D0 in Jackson county. The general consensus was that this was a good call. There were also suggestions to further trim the D0 out of Jackson and northern Routt county in Colorado as this area has also been receiving a lot of moisture recently. Changes in Wyoming and Utah were coordinated with their state experts. Other suggestions were to add D0 to a small area on the south facing slopes of the San Juan Mountains in southwest Colorado. Even though the region is entering its climatological dry period, the area has been drying out for nearly two months and the majority of the snowpack there has already melted.