Spring 2010

Weekly Climate, Water & Drought Assessment

Today's Agenda

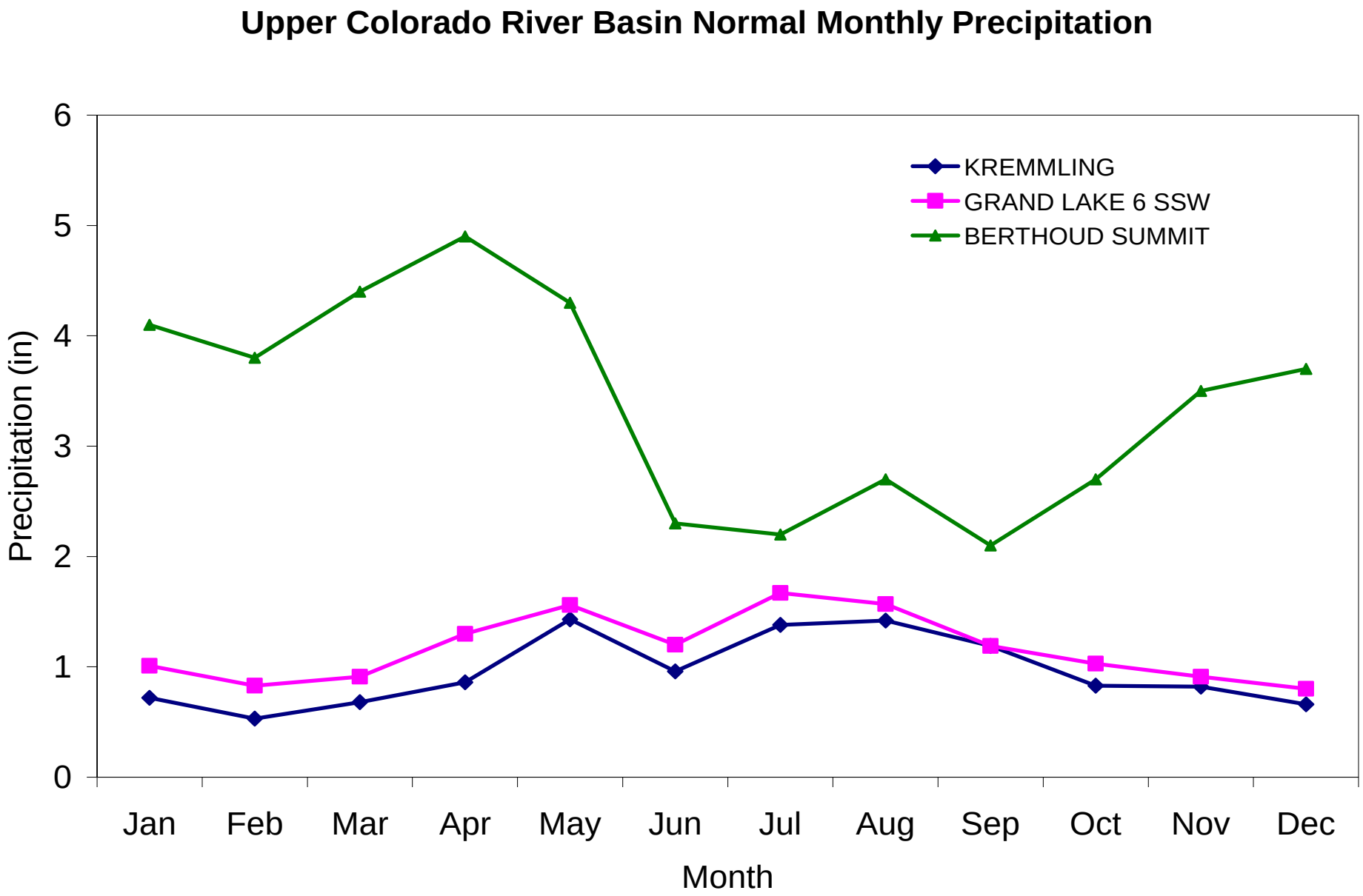
-Assessment of current water conditions

- Precipitation Forecast

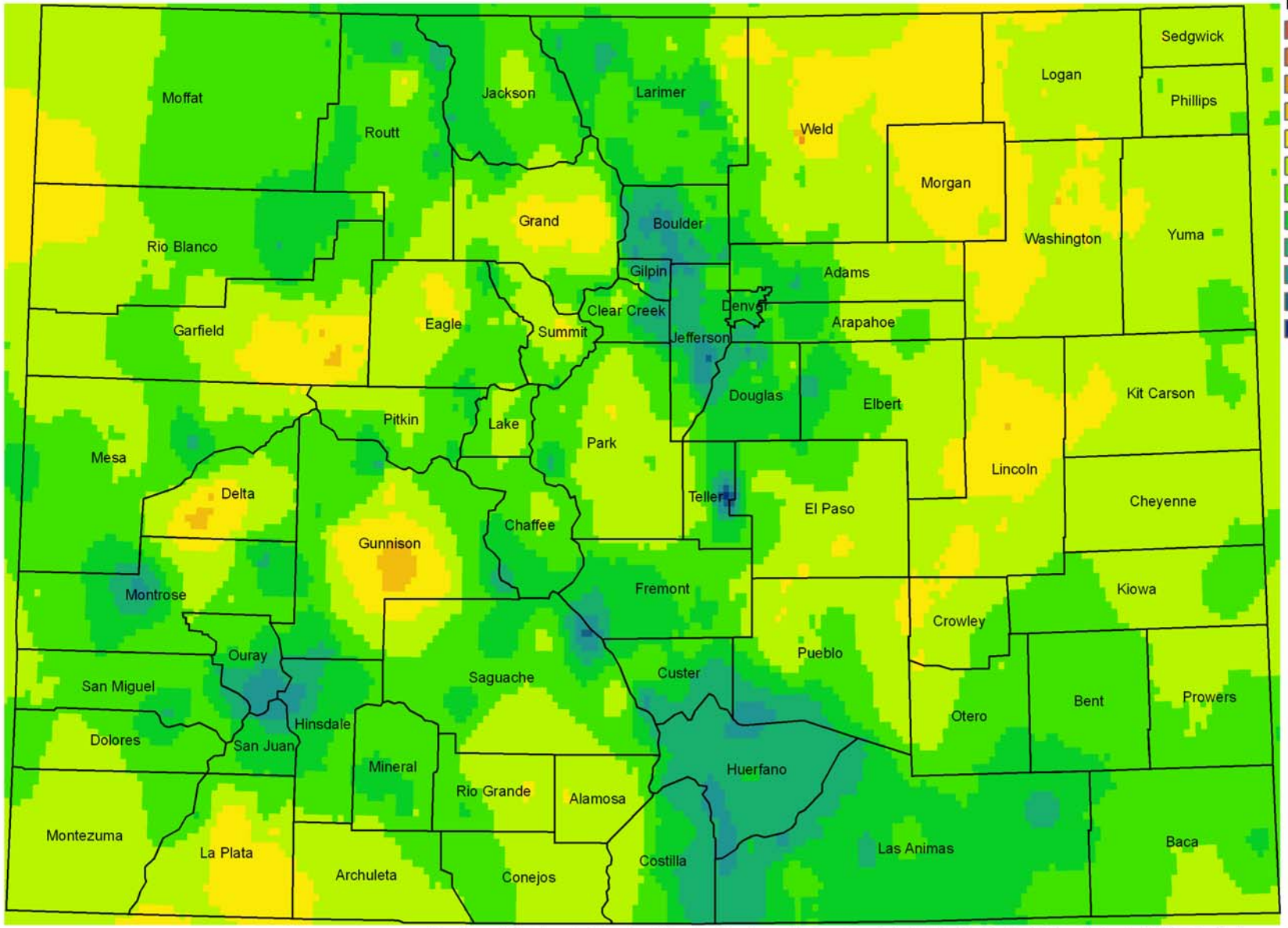
- Recommendations for Drought Monitor

Precipitation/Snowpack Update

Upper Colorado Normal Precipitation

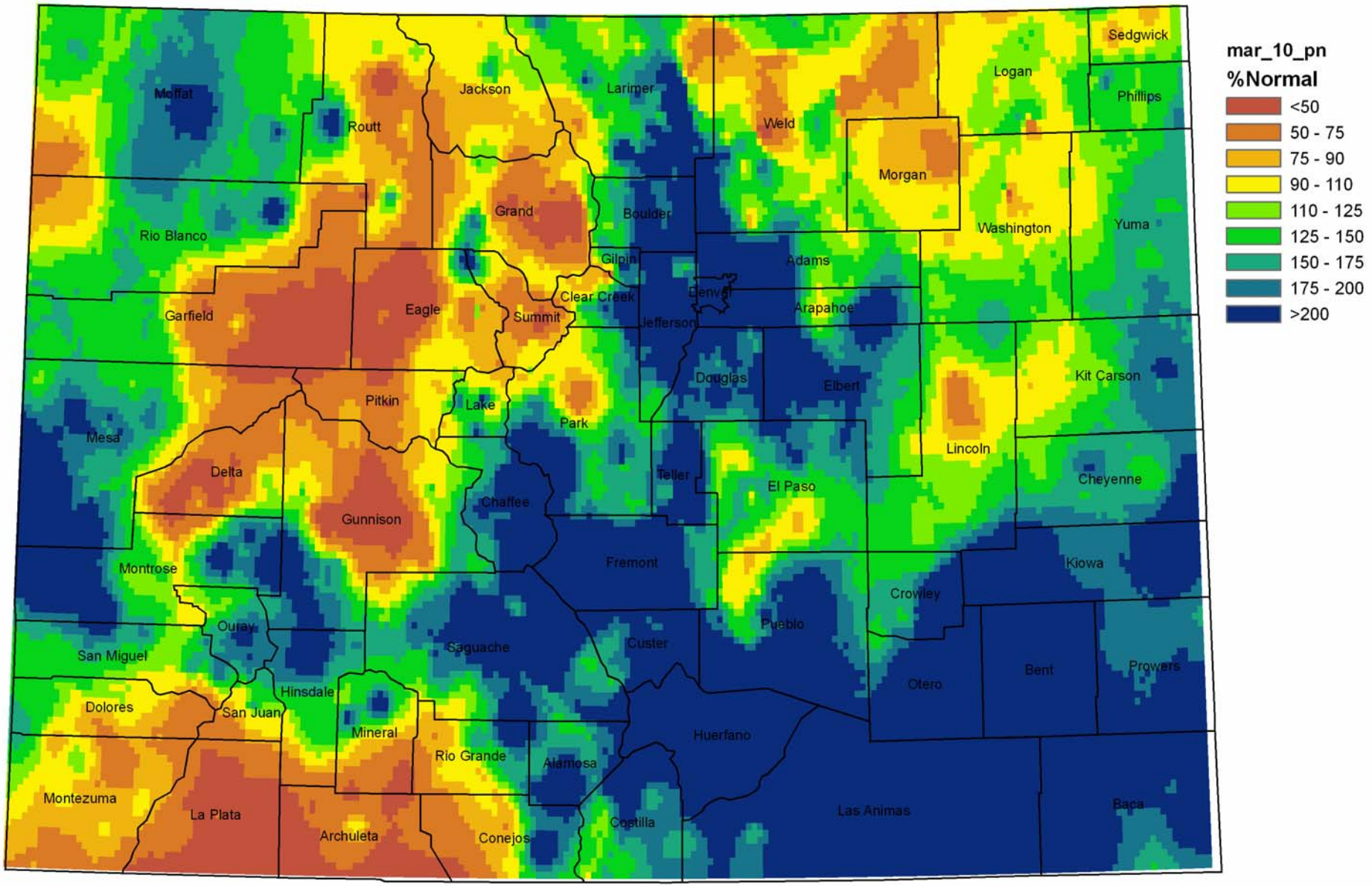


Colorado Precipitation (in) March 2010



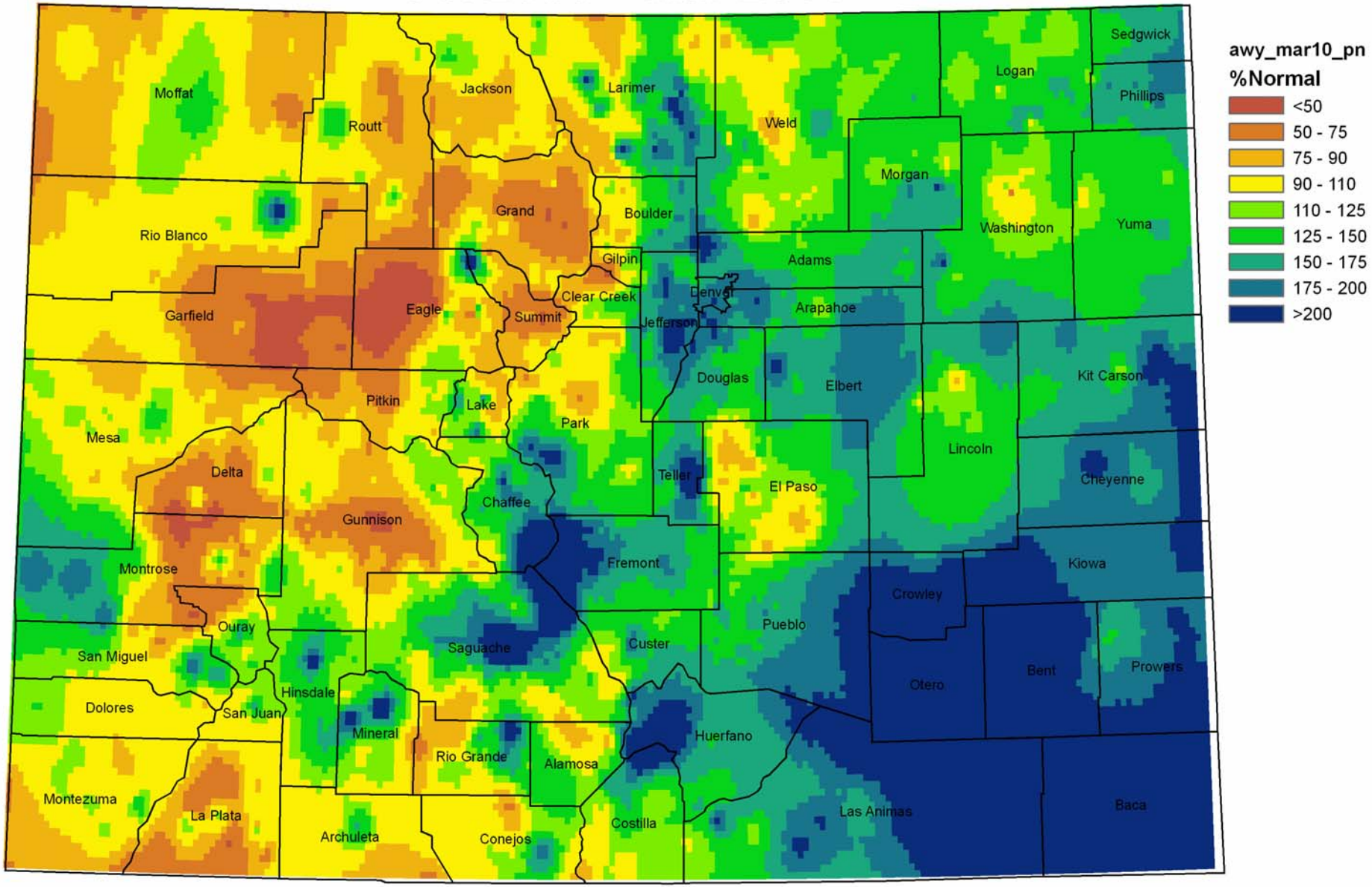
Produced by the Colorado Climate Center utilizing Snotel, NWS, CoCoRaHS and CoAgMet* Preliminary Precipitation Data
Analysis: Inverse Distance Weighting
*Summer only

March 2010 Precipitation as Percent of Average



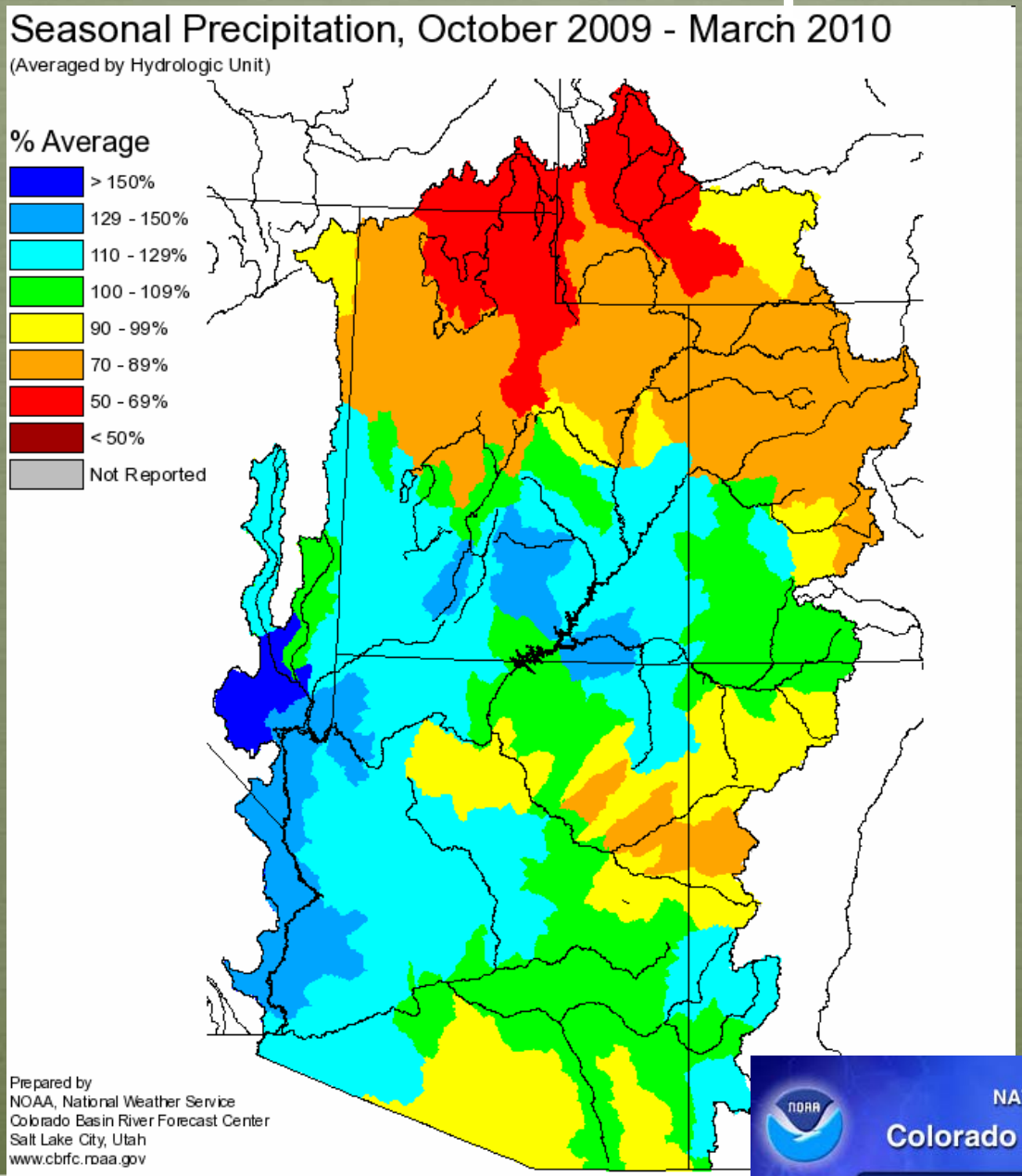
Produced by the Colorado Climate Center utilizing Snotel, NWS, CoCoRaHS and CoAgMet* Preliminary Precipitation Data
Analysis: Inverse Distance Weighting
*Summer only

Water Year 2010 Precipitation as Percentage of Normal
Oct 2009 - Mar 2010

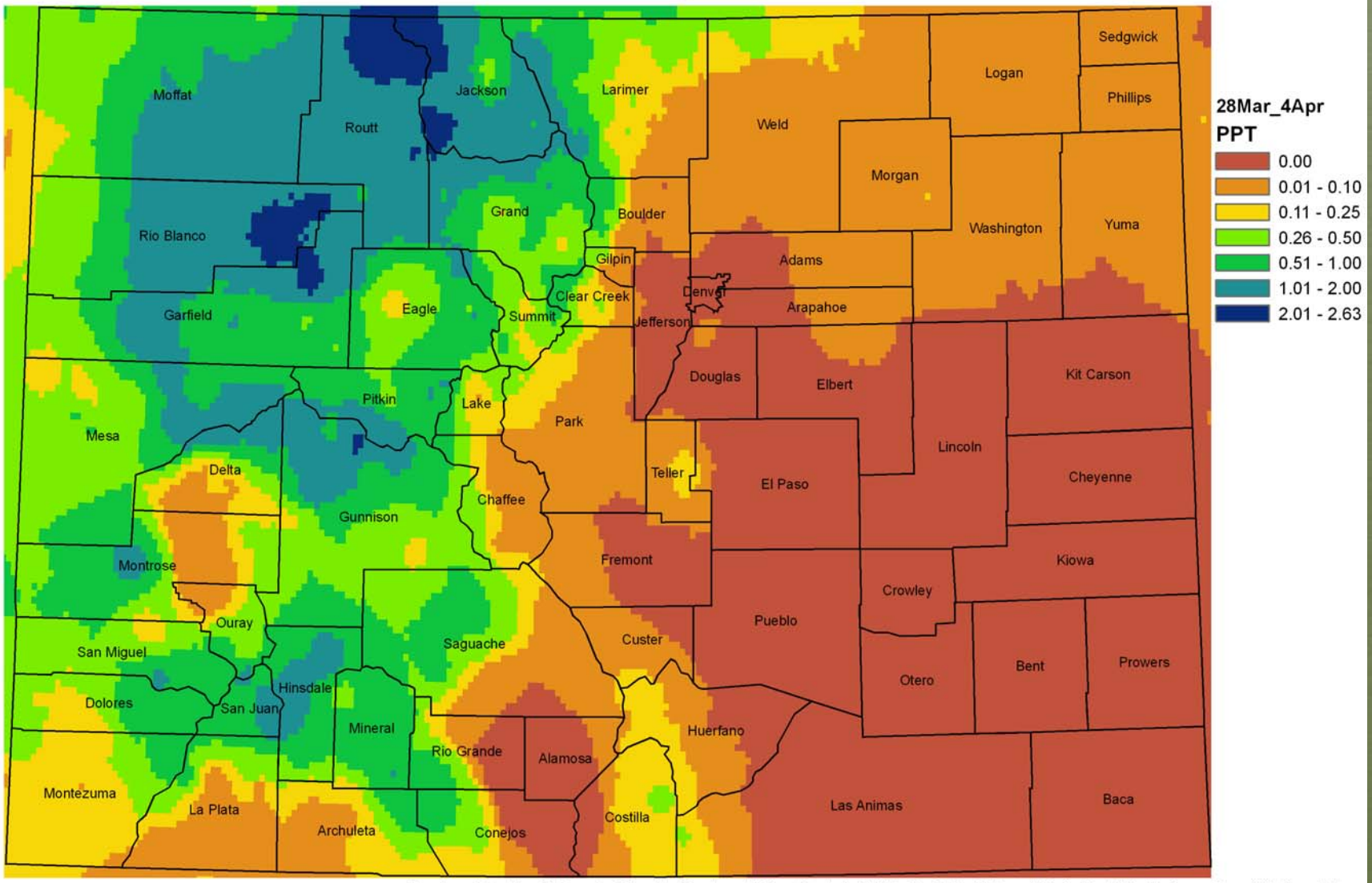


Produced by the Colorado Climate Center utilizing Snotel, NWS, CoCoRaHS and CoAgMet* Preliminary Precipitation Data
Analysis: Inverse Distance Weighting
*Summer only

WY 2010 Precipitation

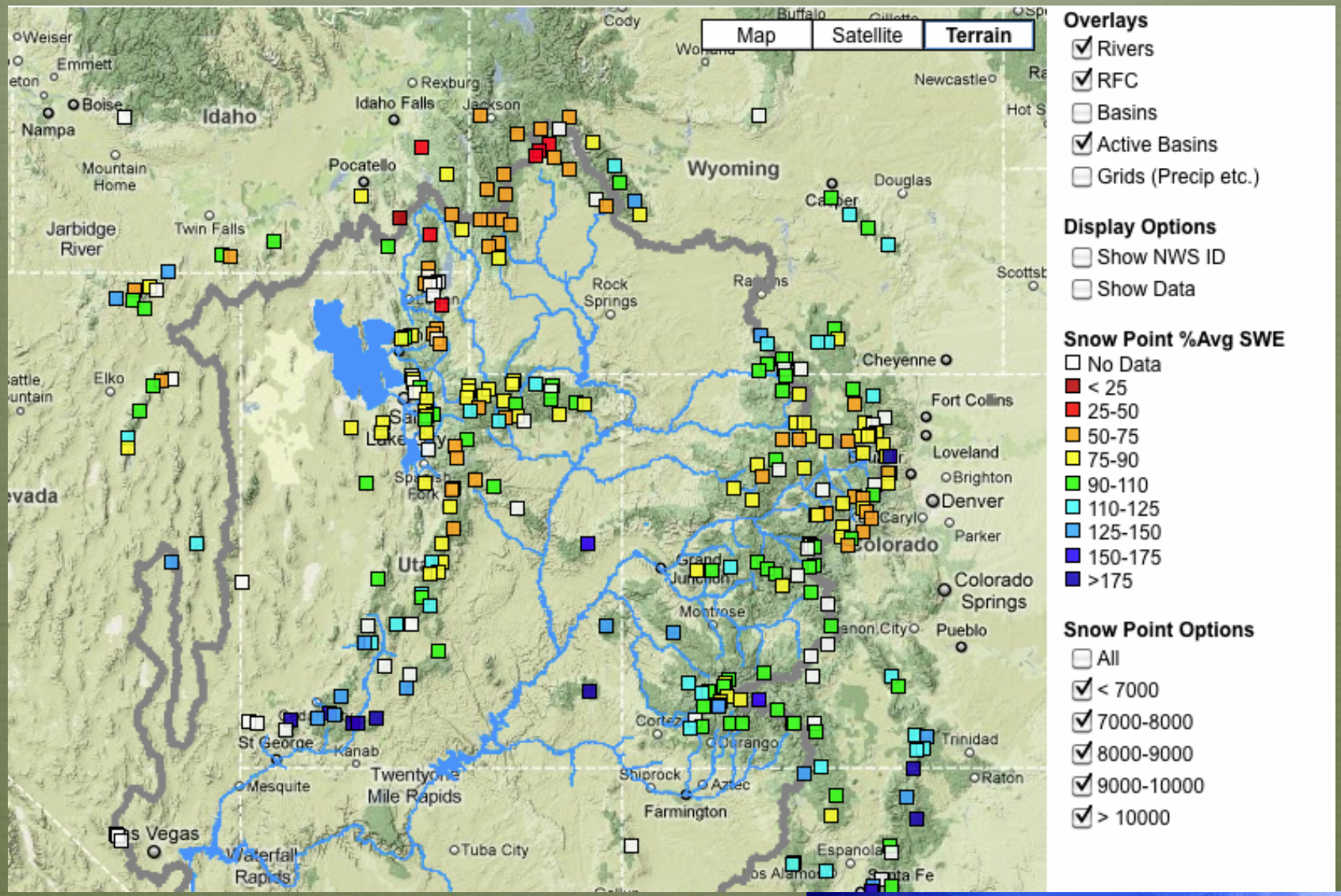


7 Day Precipitation 29 March – 4 April 2010



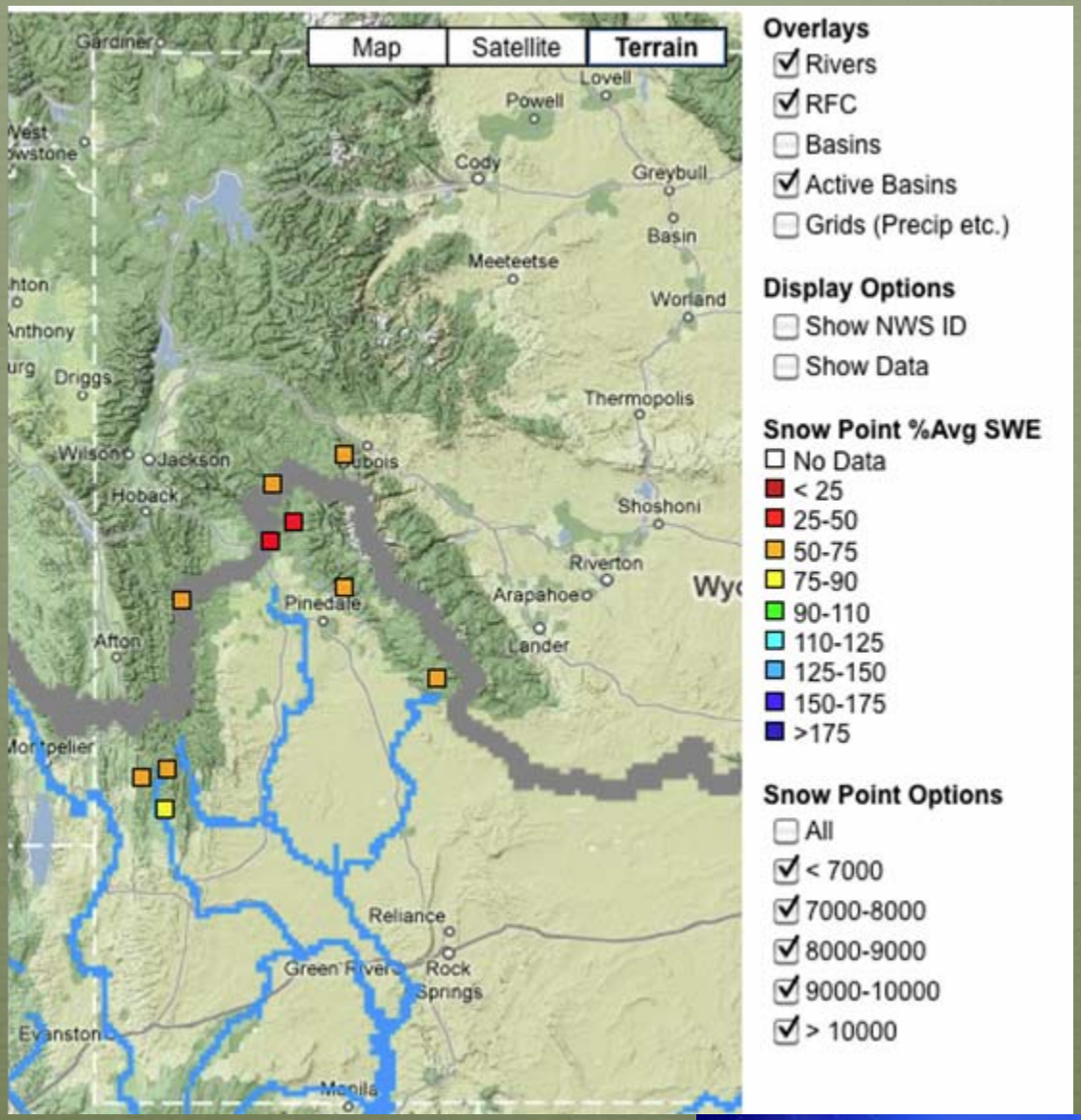
Produced by the Colorado Climate Center utilizing Snotel, NWS, CoCoRaHS and CoAgMet* Preliminary Precipitation Data
Analysis: Inverse Distance Weighting
*Summer only

Upper Colorado River Basin

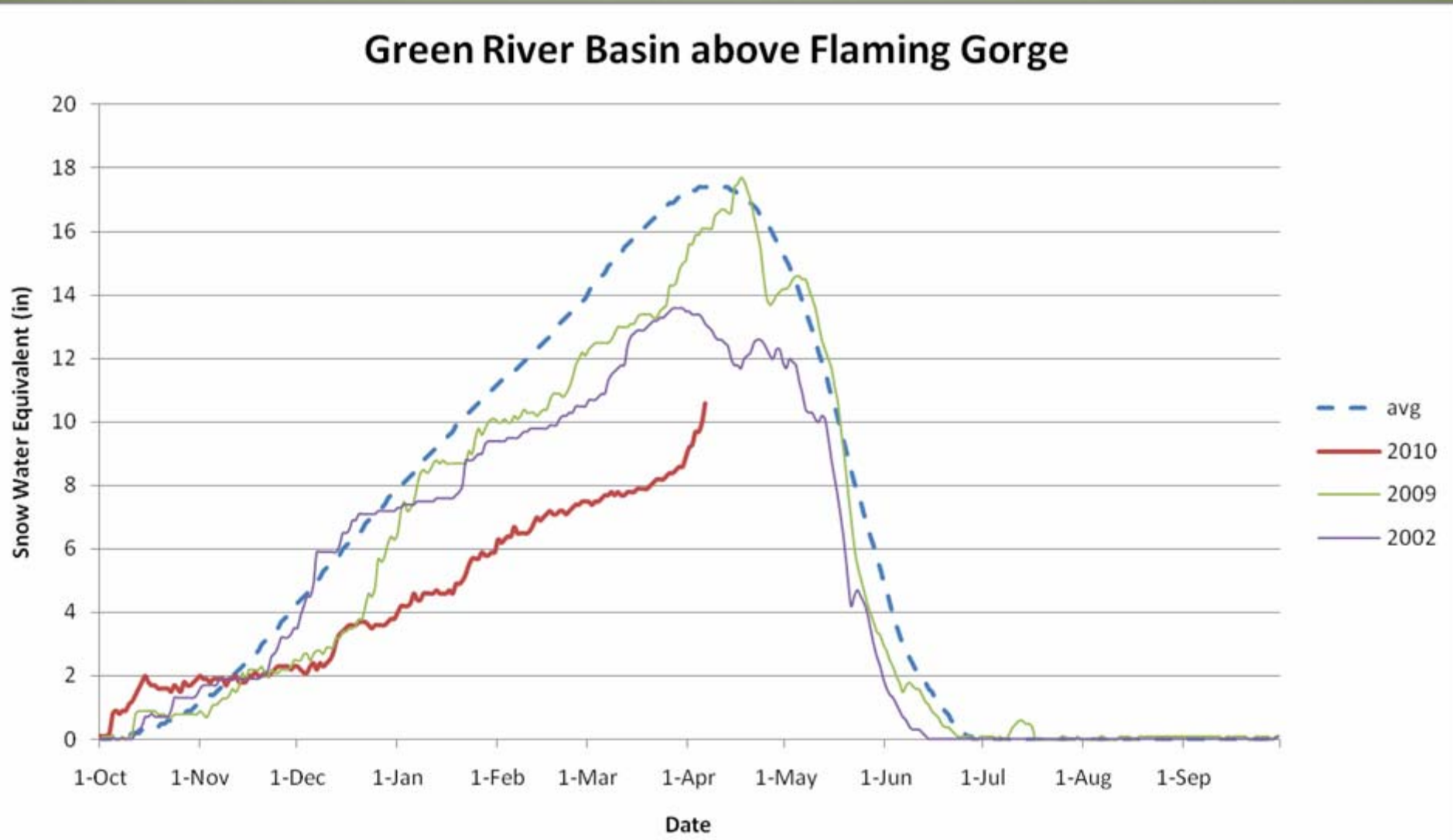


NATIONAL WEATHER SERVICE
Colorado Basin River Forecast Center

Green River Basin above Flaming Gorge

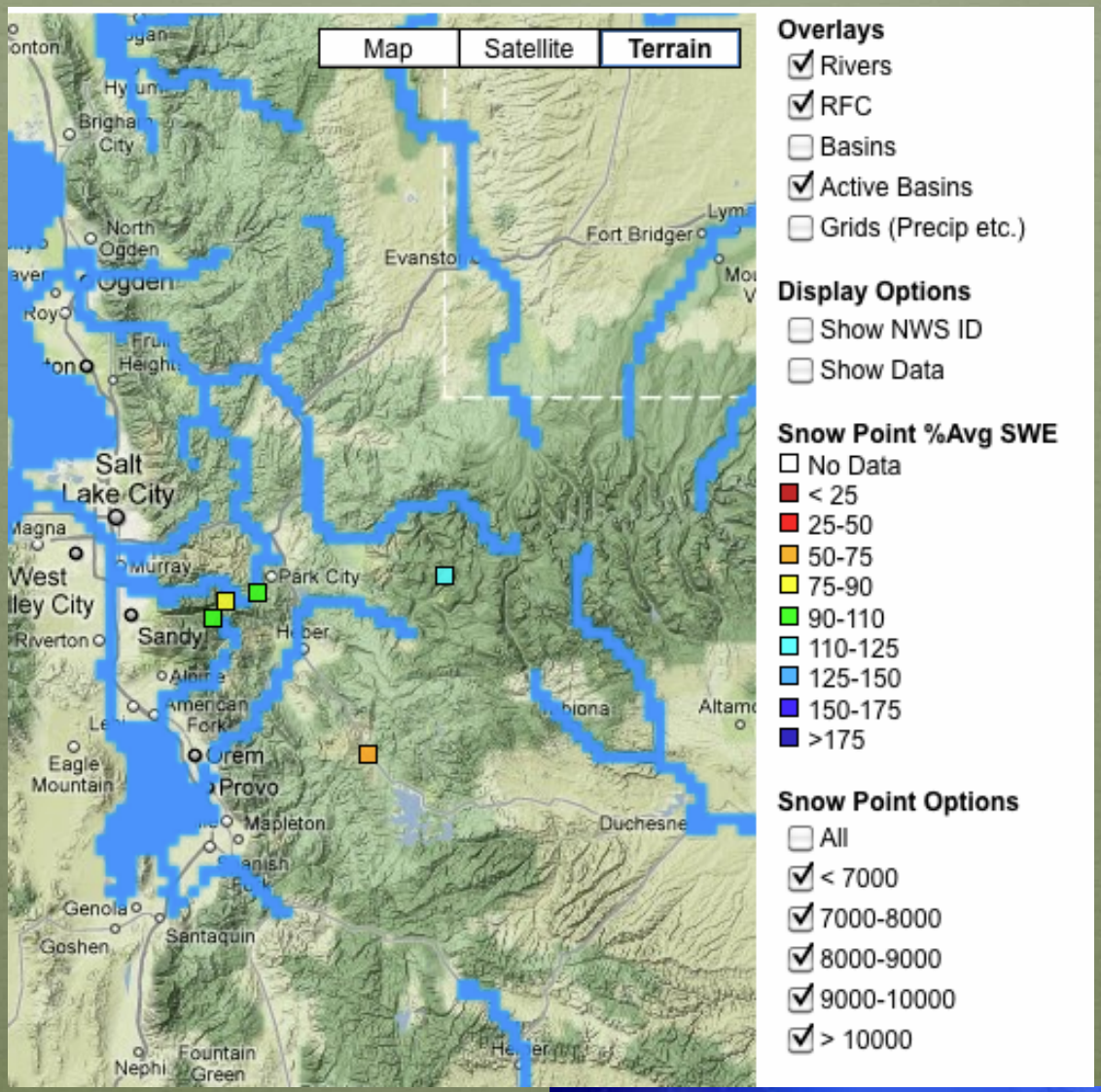


NATIONAL WEATHER SERVICE
Colorado Basin River Forecast Center

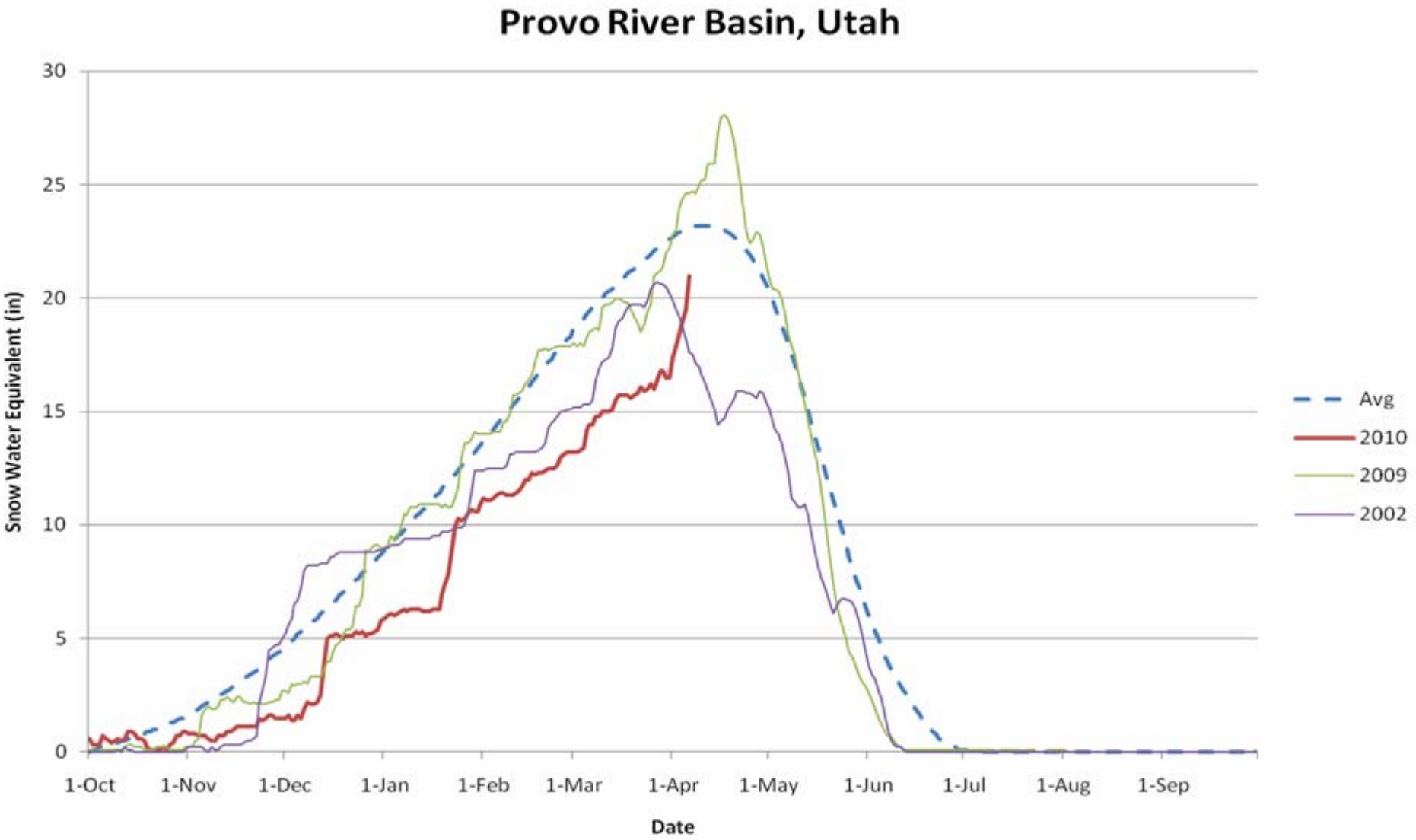


Basin Snowpack: 61%

Provo River Basin

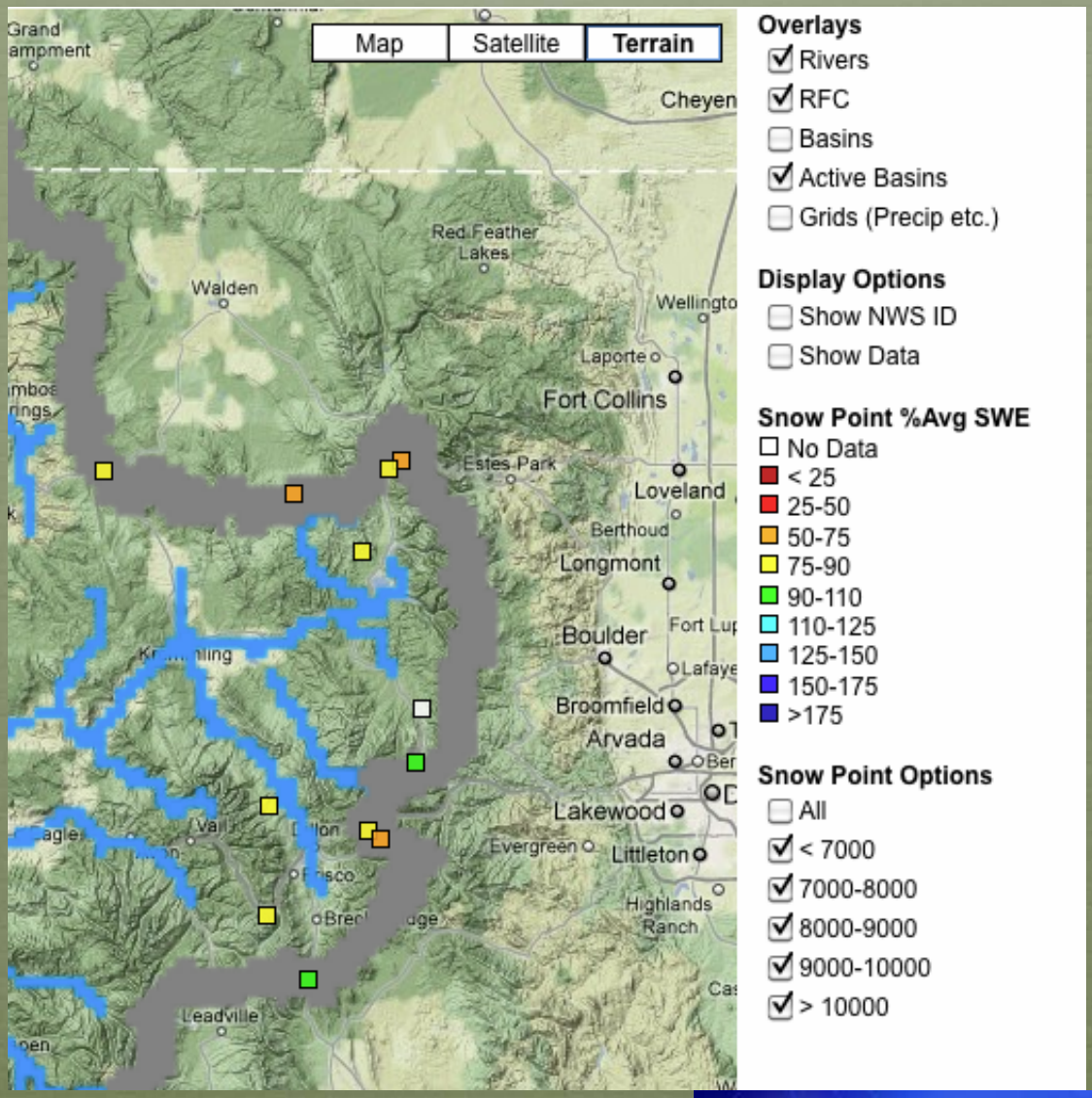


NATIONAL WEATHER SERVICE
Colorado Basin River Forecast Center

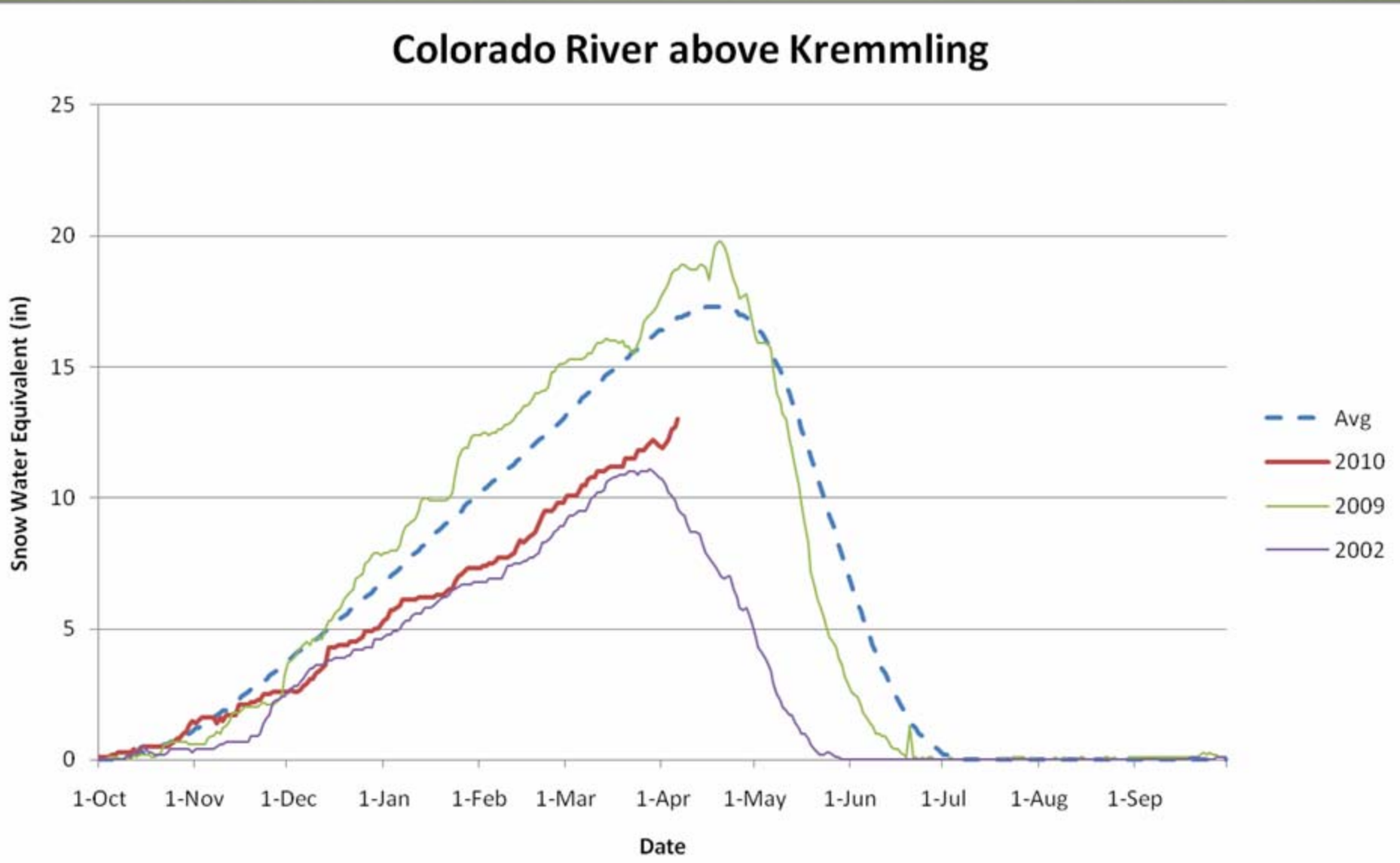


Basin snowpack: 91%

Upper Colorado above Kremmling

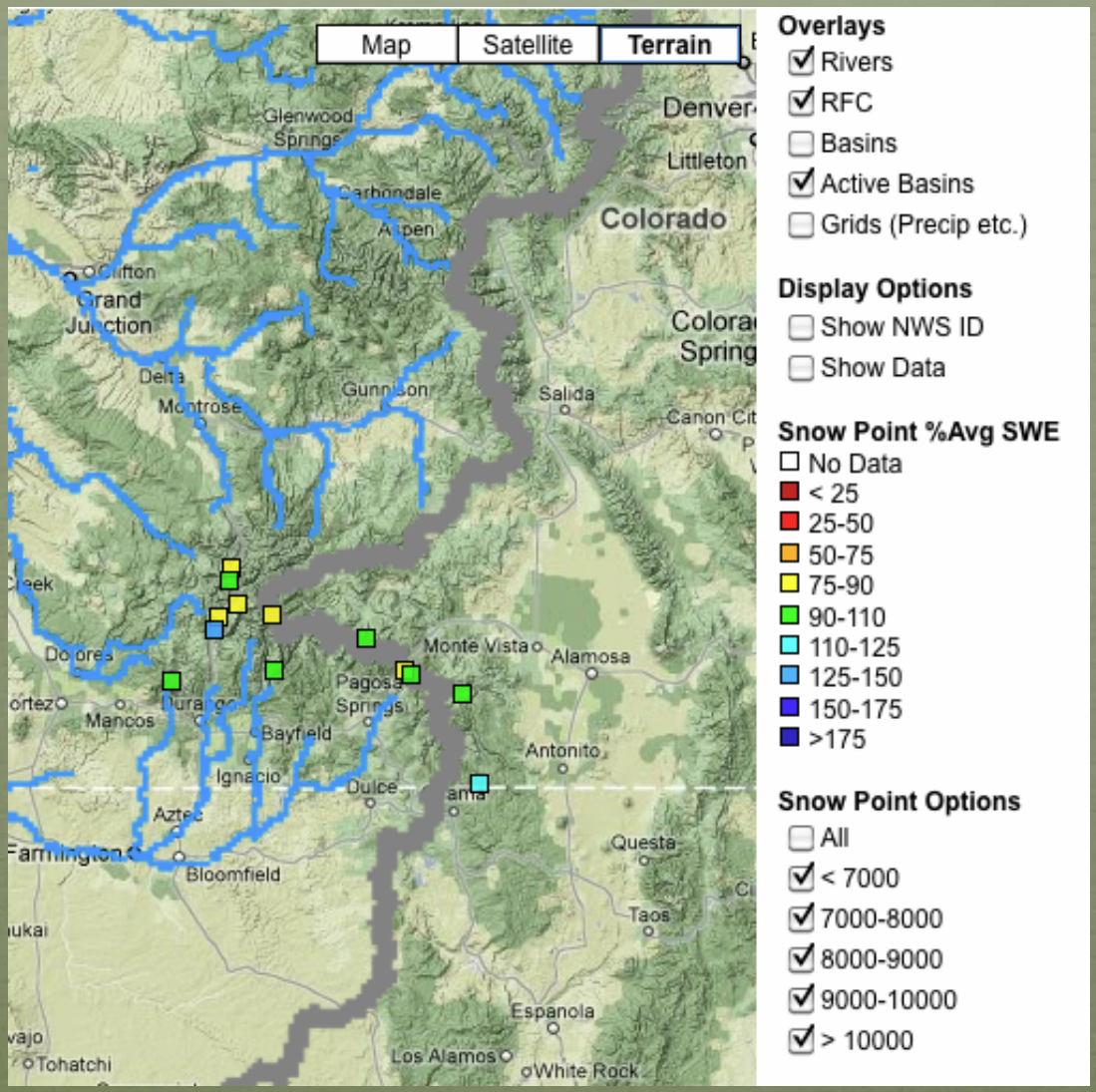


NATIONAL WEATHER SERVICE
Colorado Basin River Forecast Center



Basin Snowpack: 80%

San Juan Basin



NATIONAL WEATHER SERVICE
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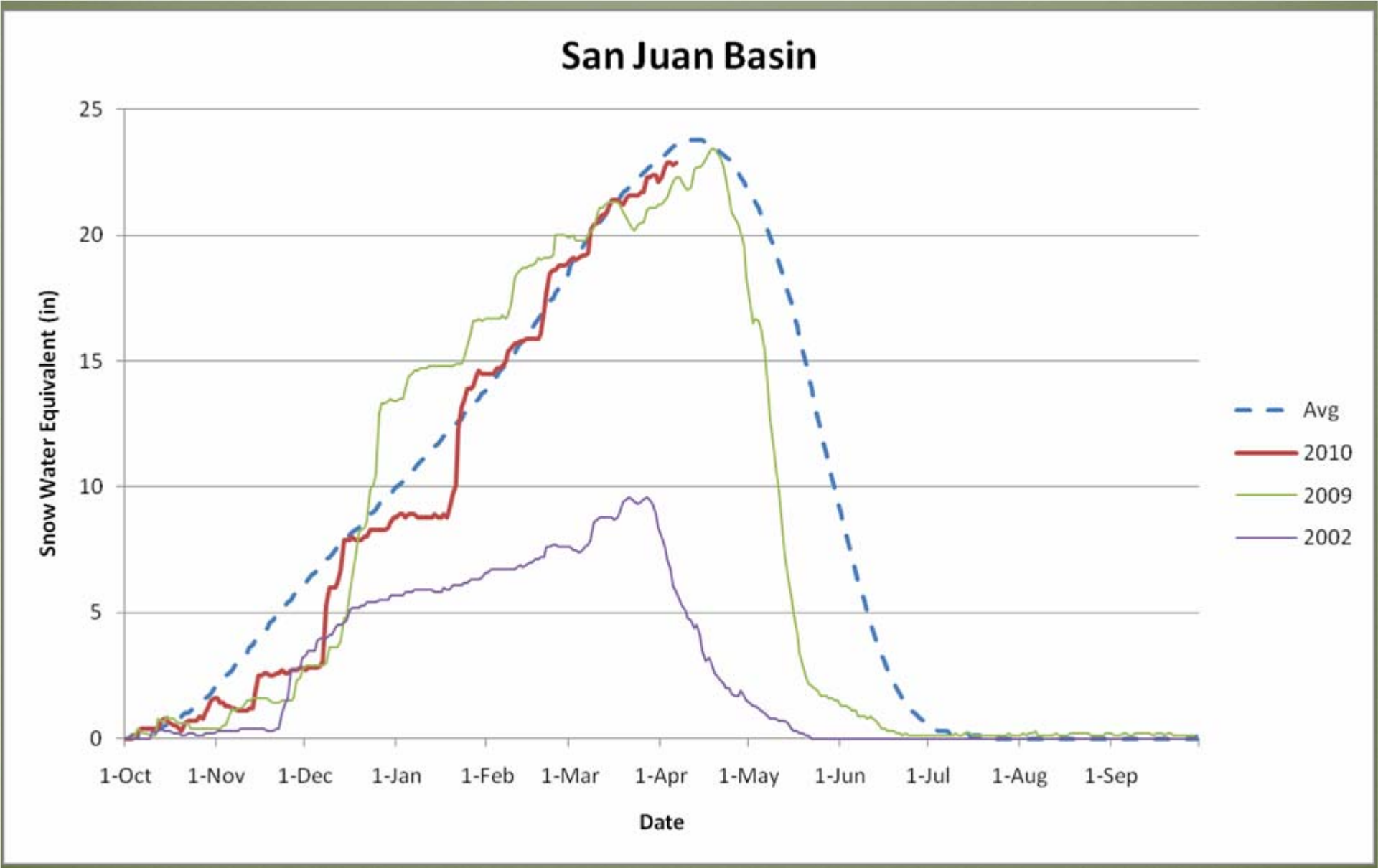
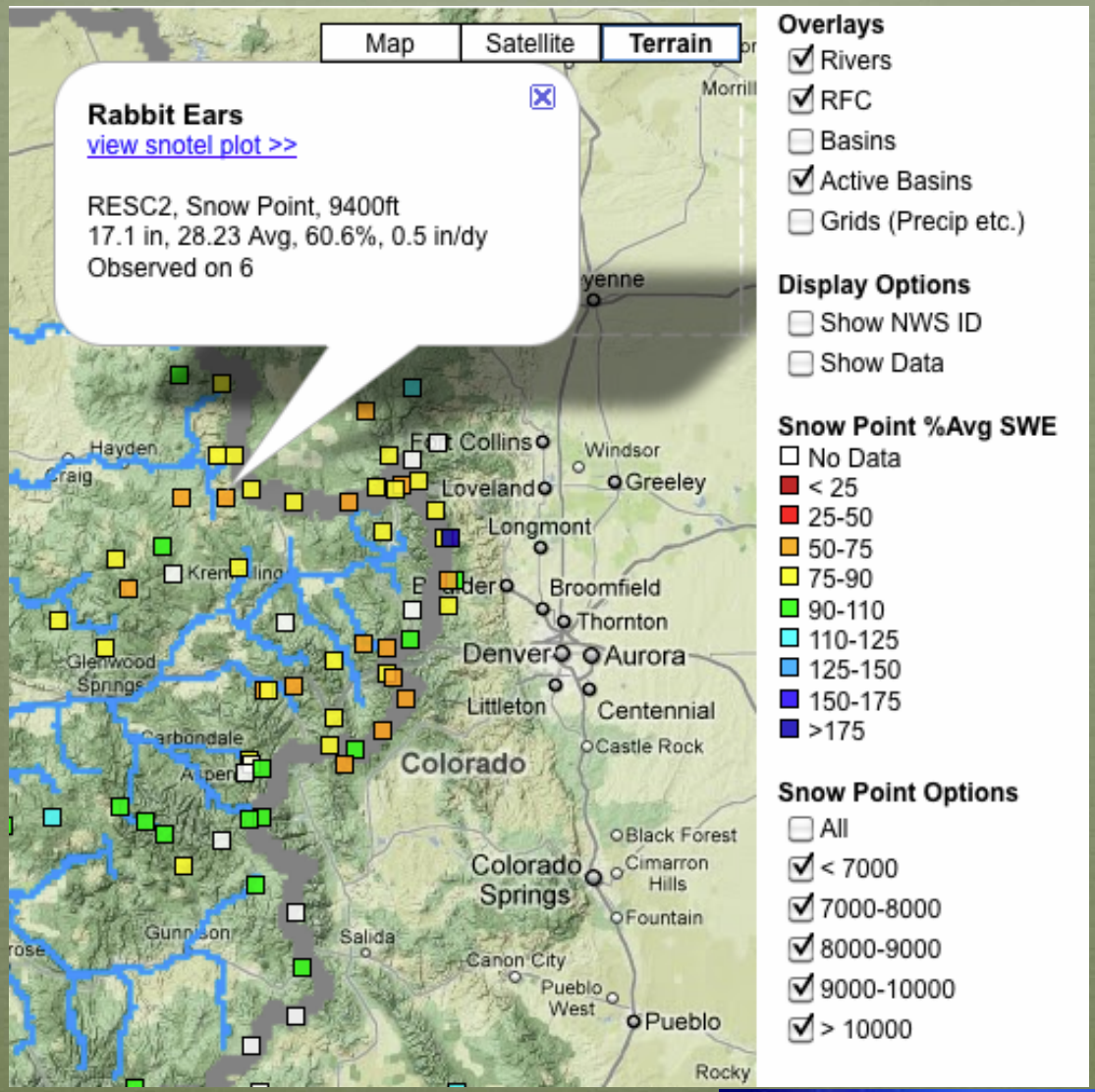
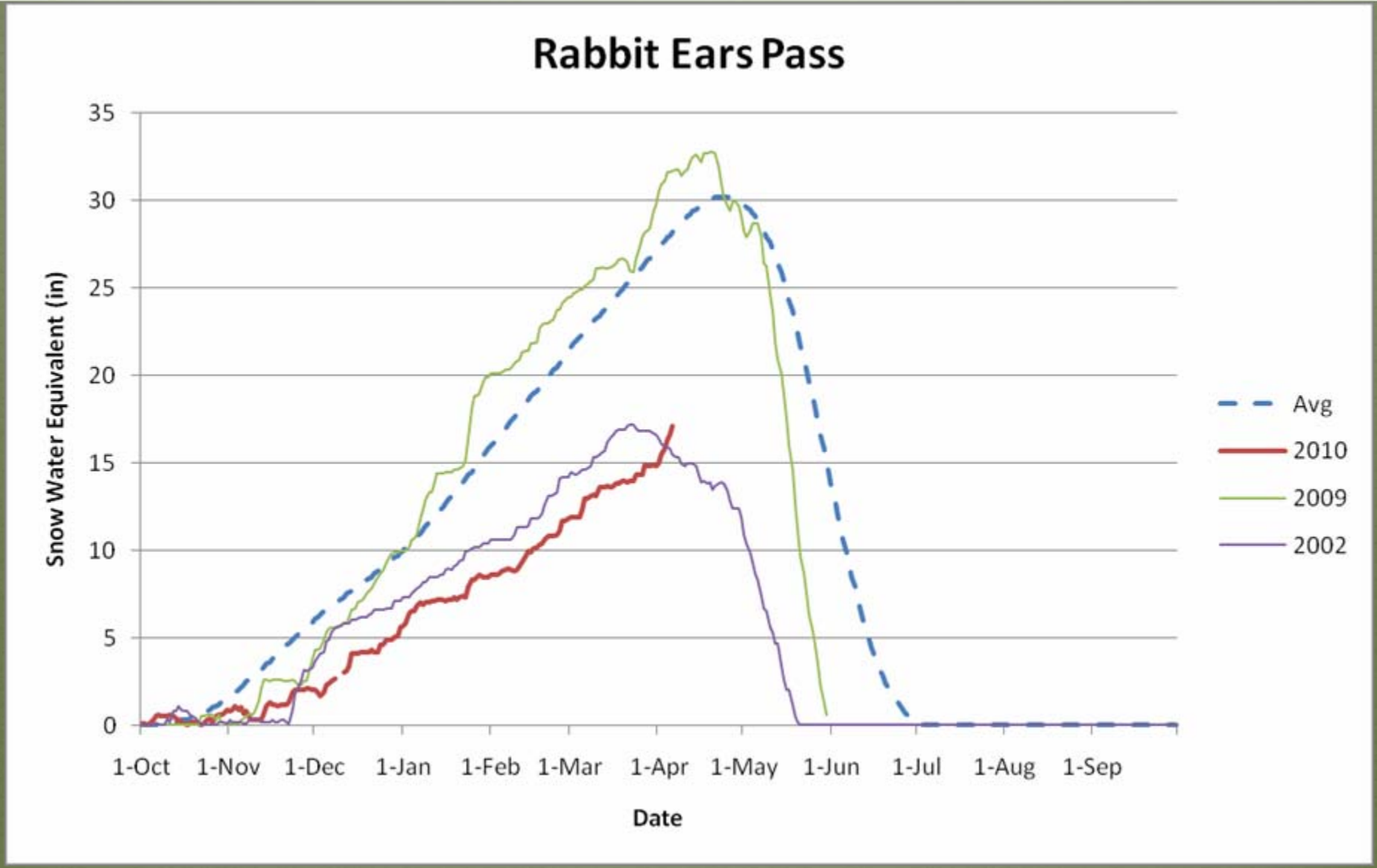


Basin Snowpack: 97%

Rabbit Ears Pass

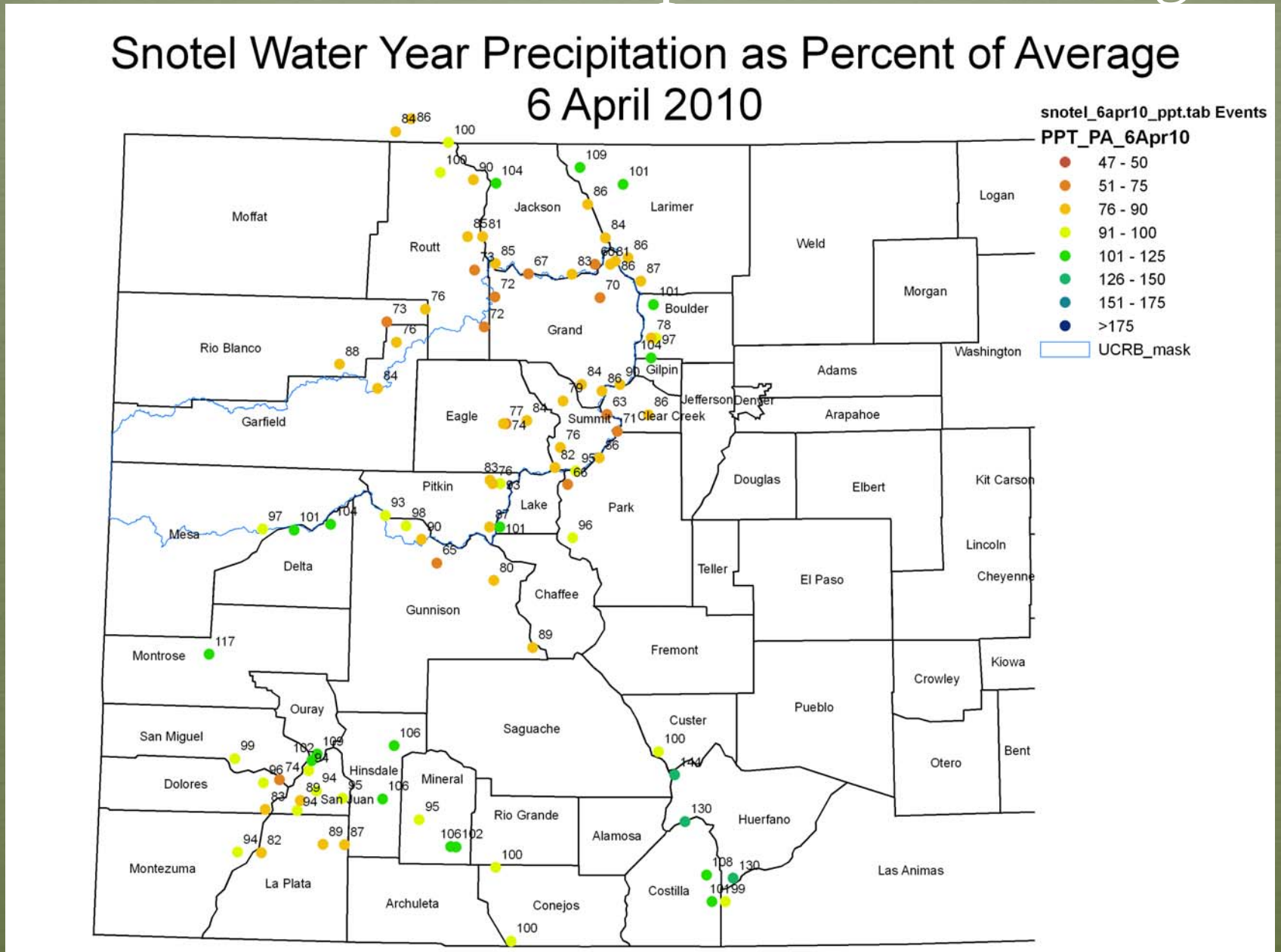


NATIONAL WEATHER SERVICE
Colorado Basin River Forecast Center

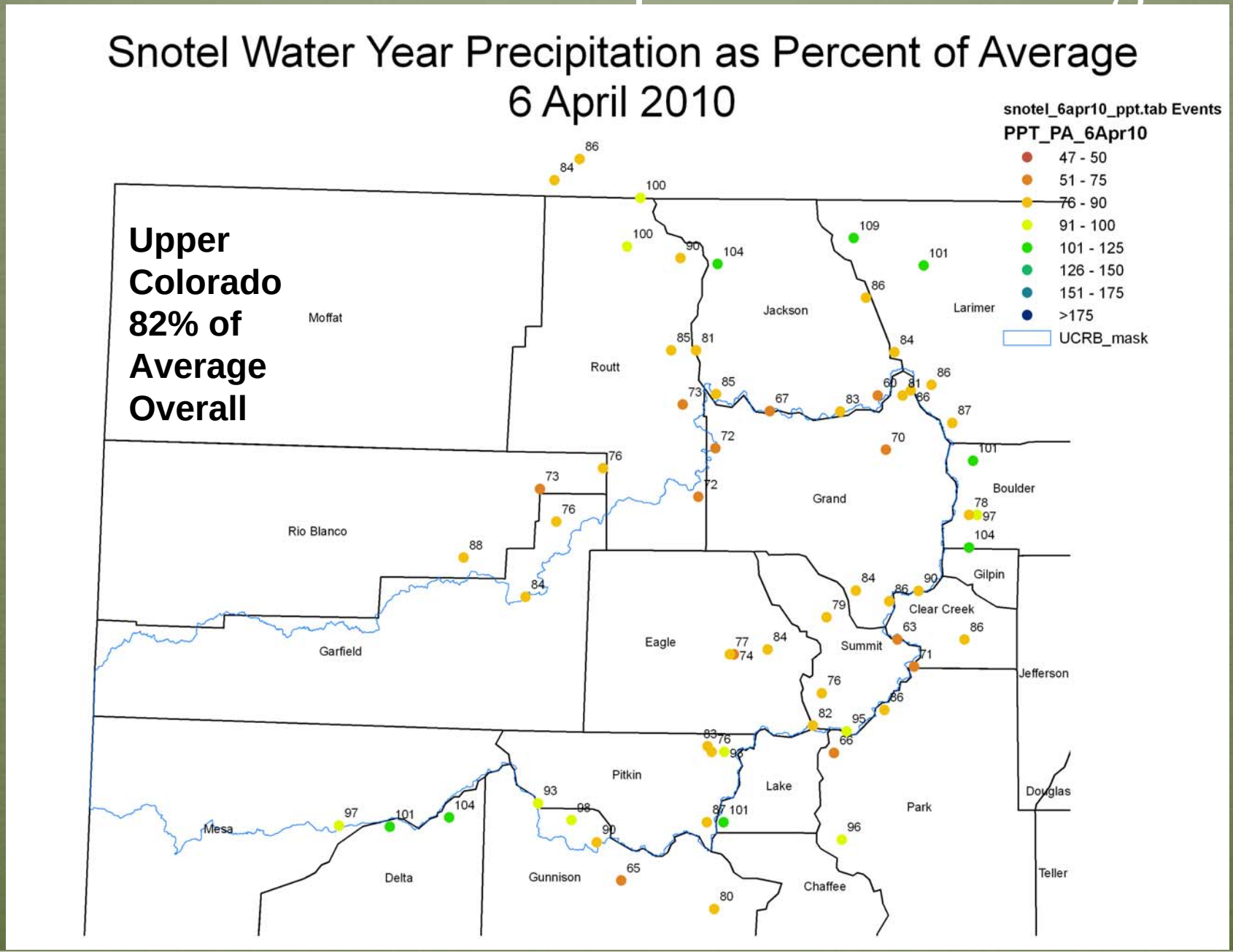

Rabbit Ears Pass
Snow Water Equivalent (in)
35
30
25
20
15
10
5
0
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date
Avg
2010
2009
2002

Snowpack: 61%

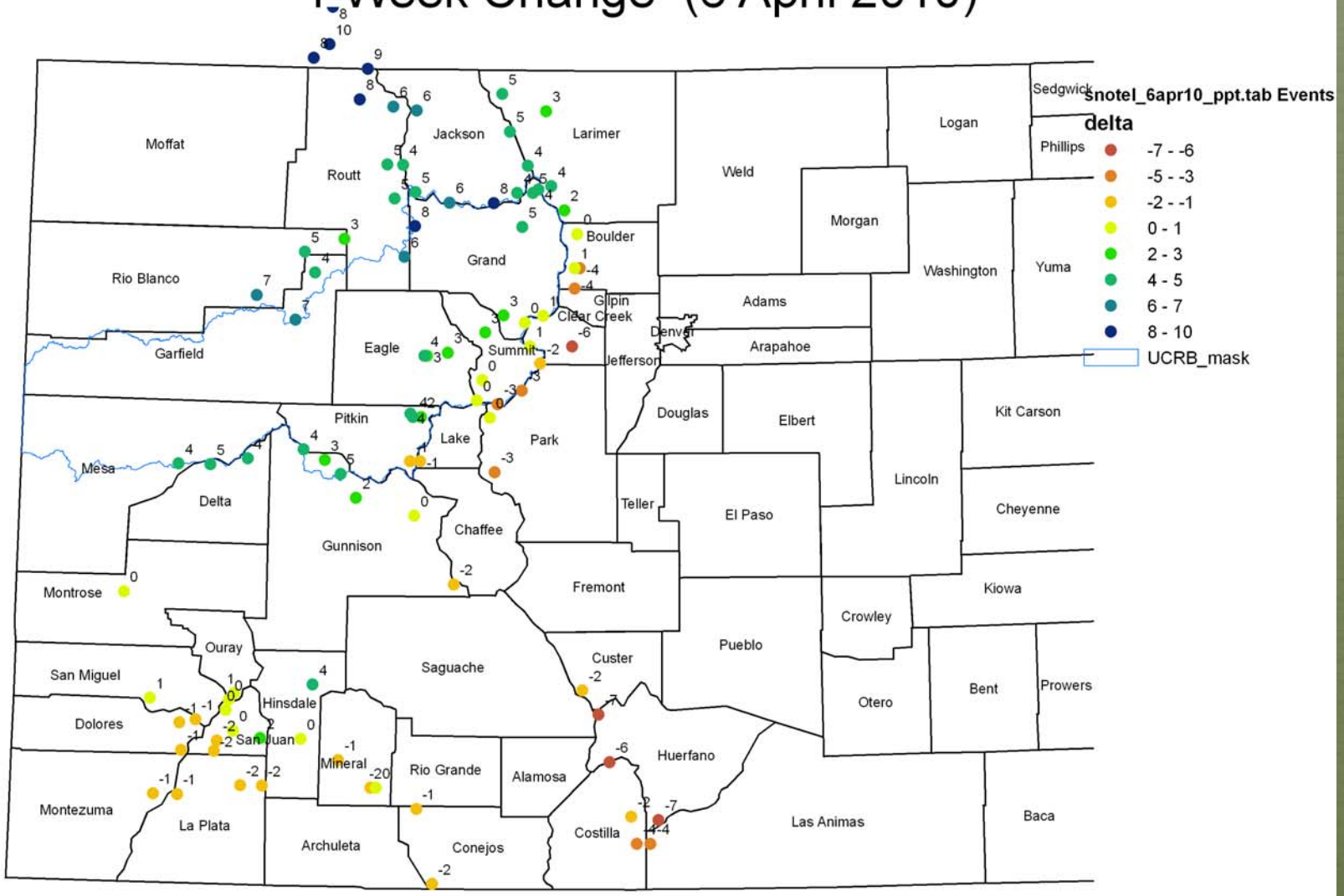
Snotel WYTD Precipitation % Average



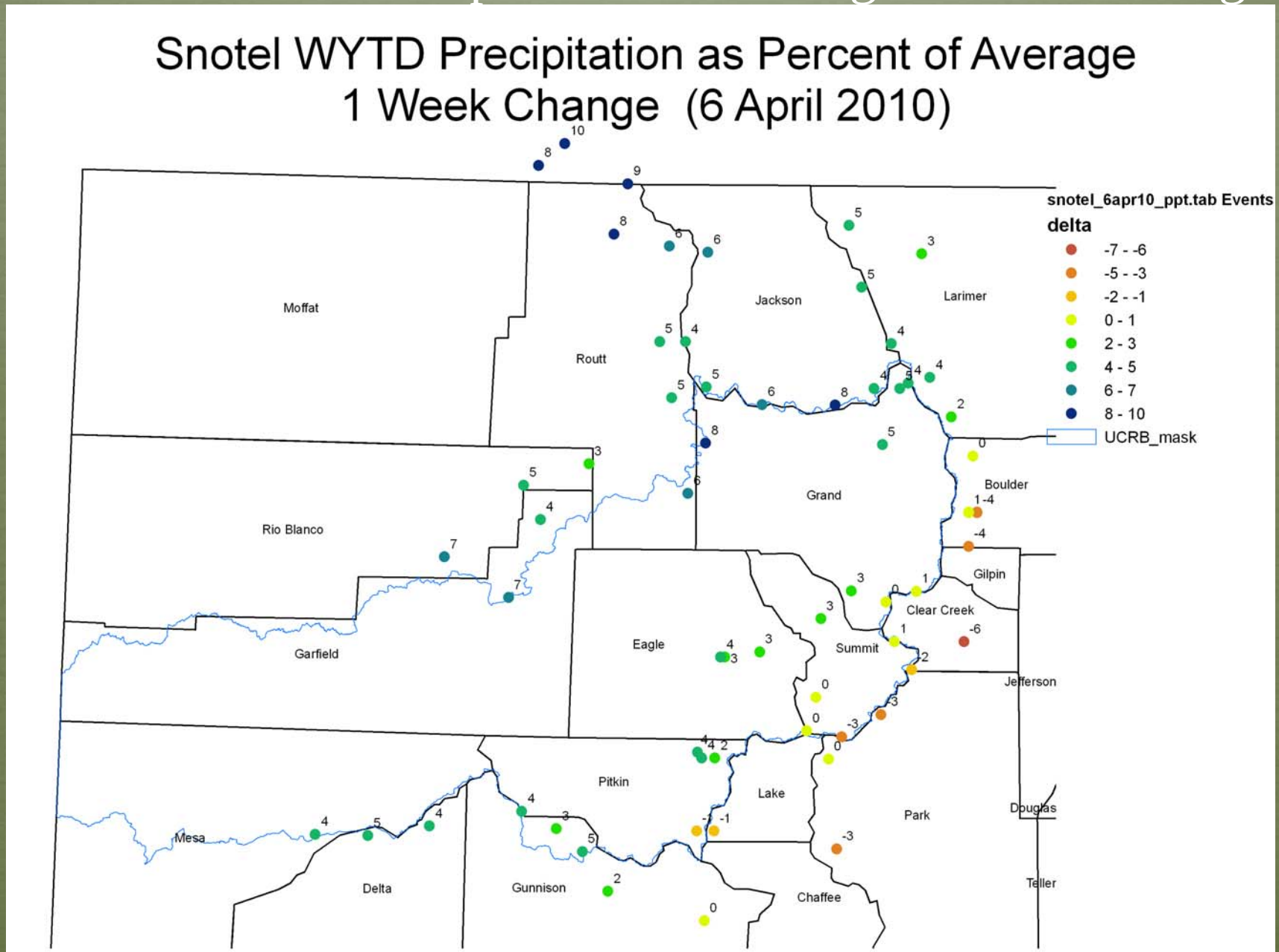
Snotel WYTD Precipitation % Average



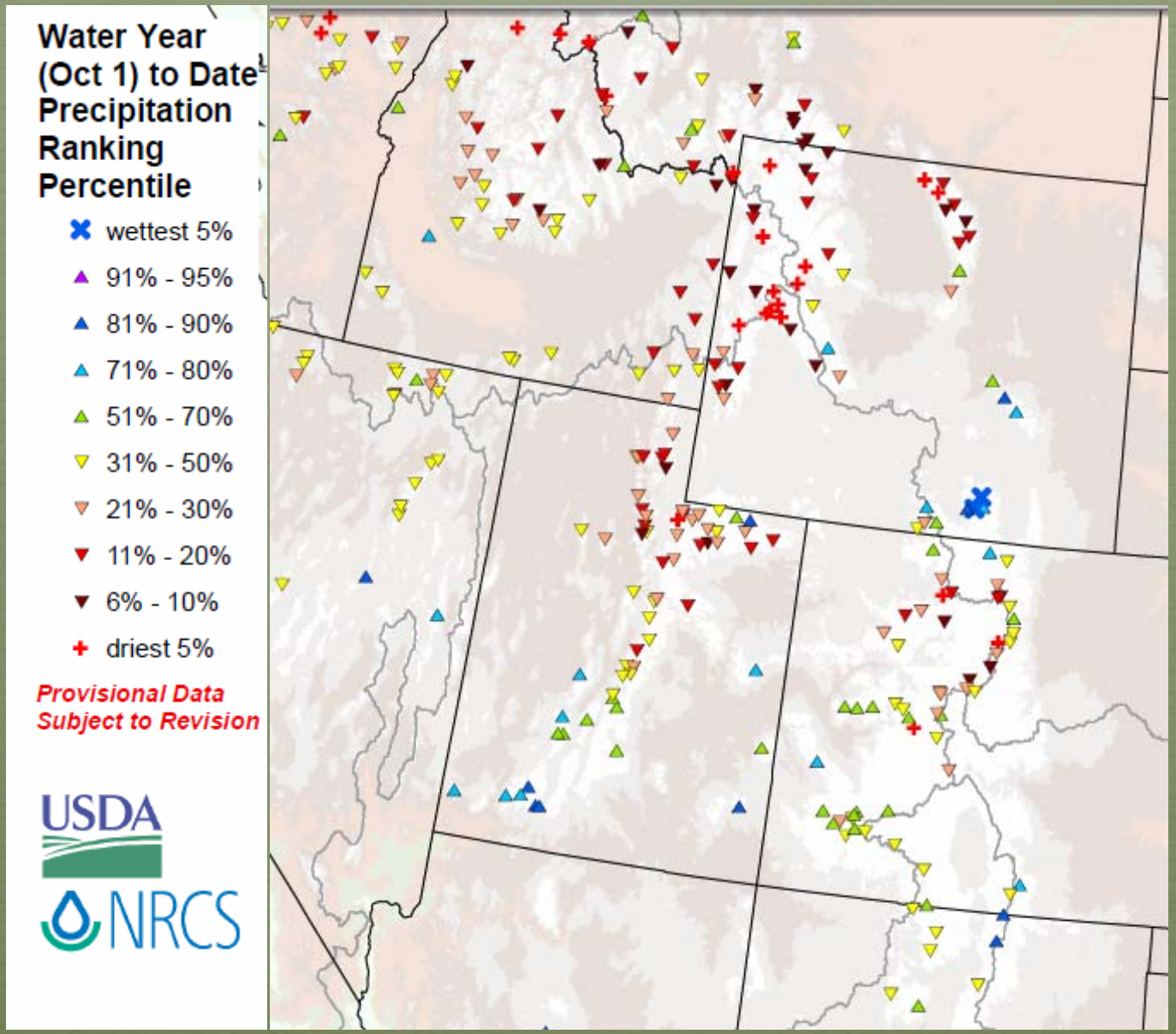
Snotel WYTD Precipitation % Average 1 Week Change



Snotel WYTD Precipitation % Average 1 Week Change



Western Snotel Percentiles



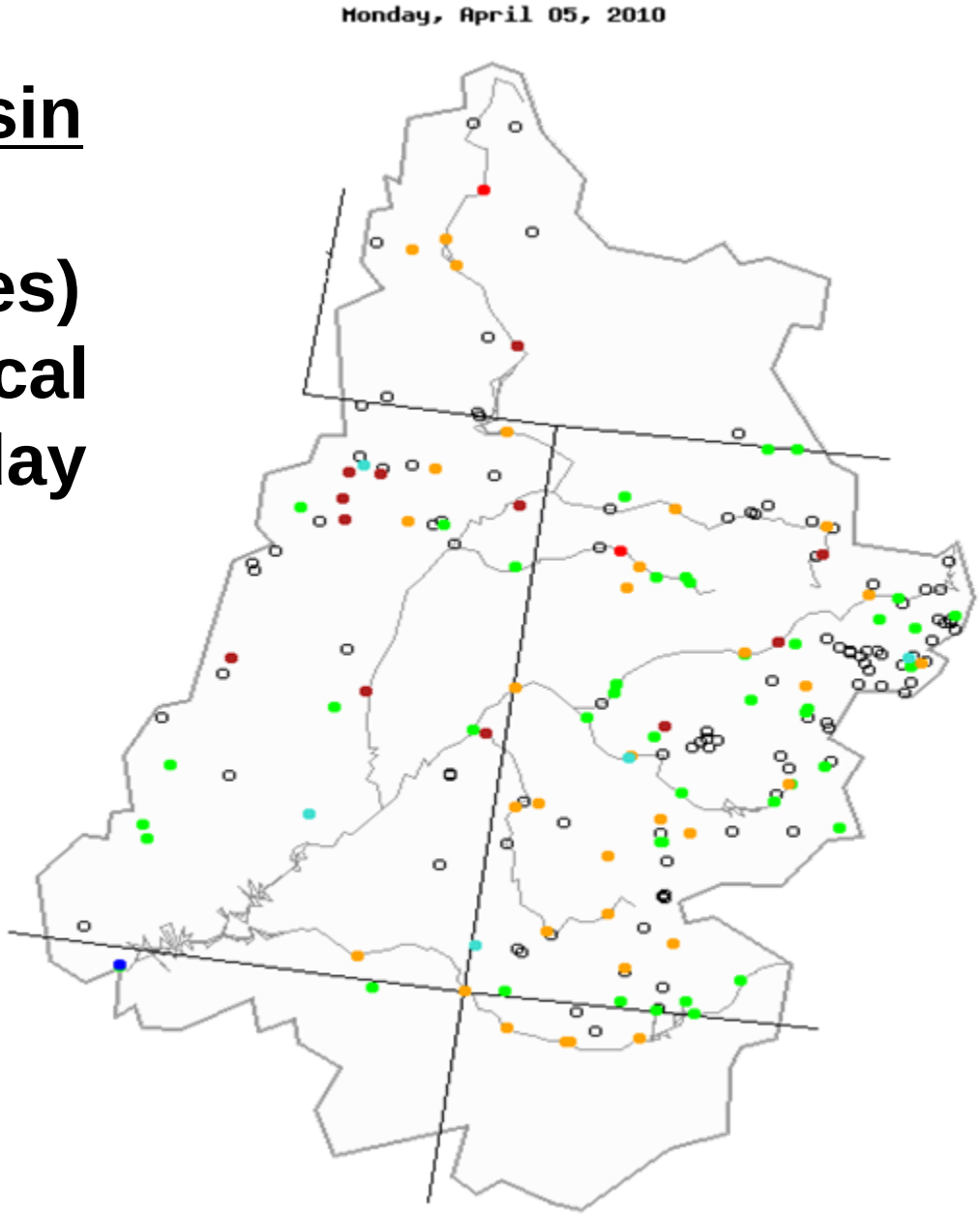
http://www.wcc.nrcs.usda.gov/gis/precip.html

Streamflow Update

Michael E. Lewis - USGS

Upper Colorado Basin

7-day average streamflow (all gages) compared to historical streamflow for the day of the year

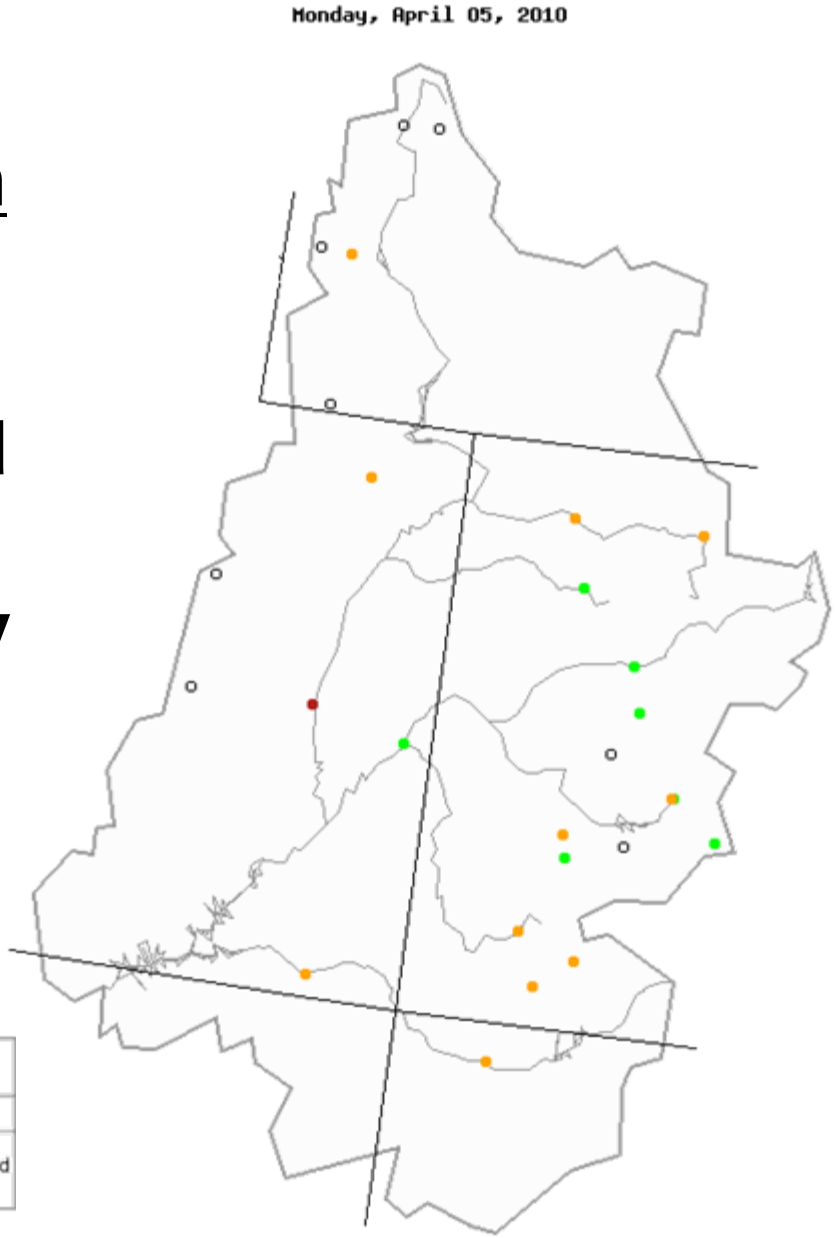


Explanation - Percentile classes							
Low	≤10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

USGS

Upper Colorado Basin

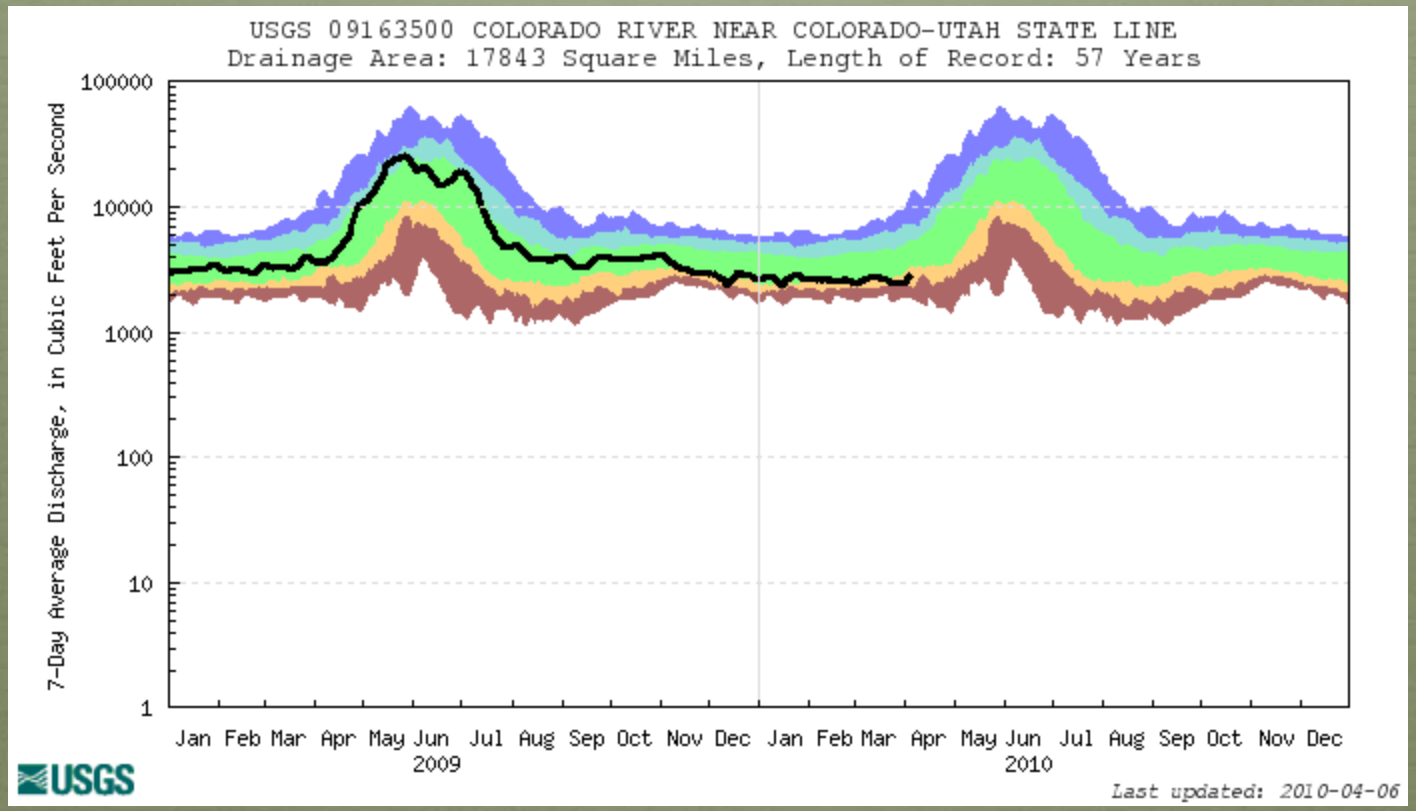
7-day average streamflow (HCDN gages only) compared to historical streamflow for the day of the year

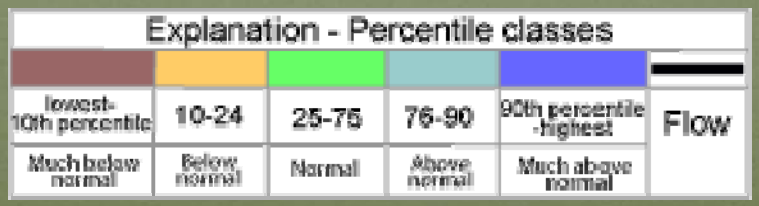


Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

USGS

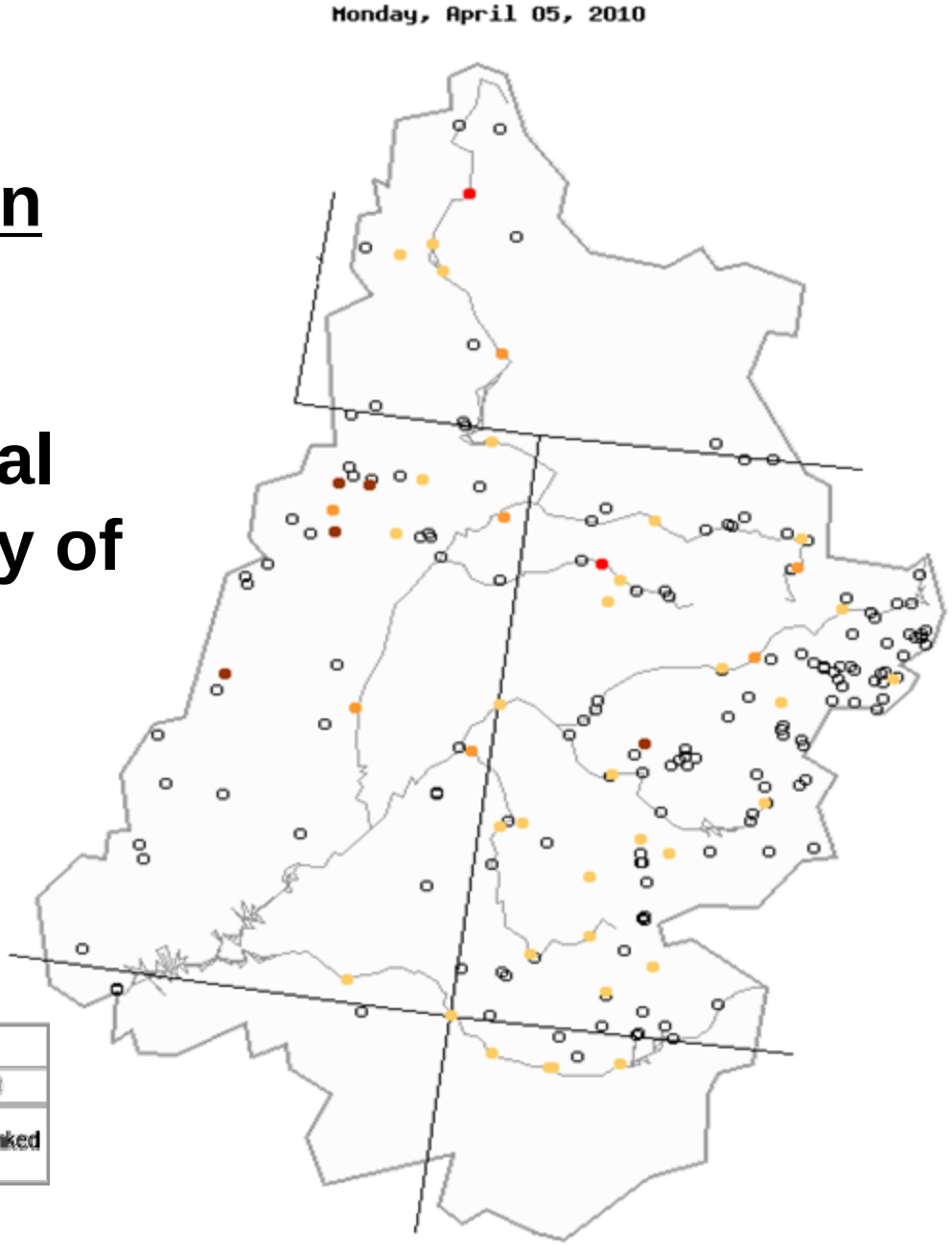
Time series plot of real-time streamflow compared to historical streamflow for the day of the year





Upper Colorado Basin

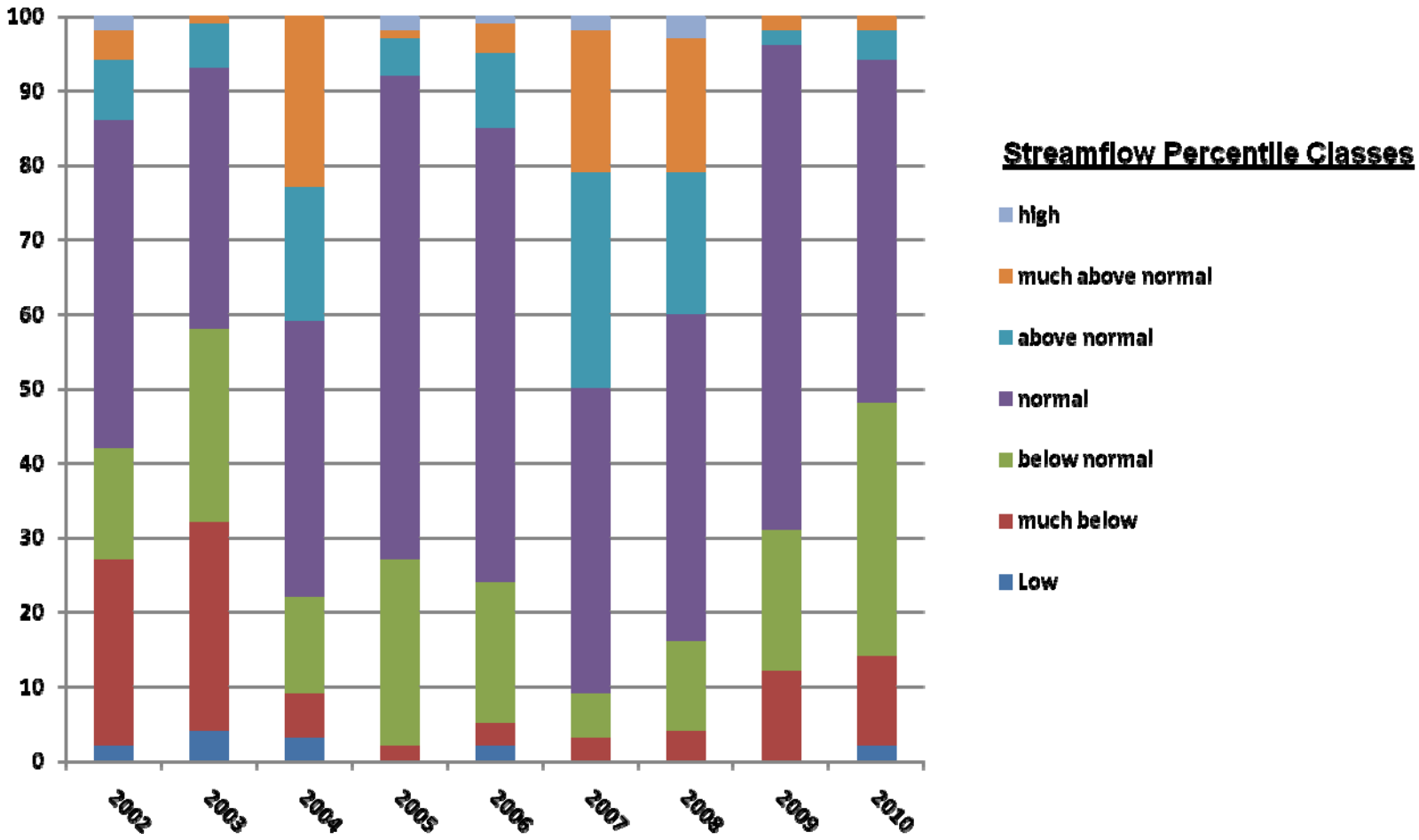
Below normal 7-day average streamflow compared to historical conditions for the day of the year



Explanation - Percentile classes				
New low	<=5	6-9	10-24	Not ranked
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

USGS

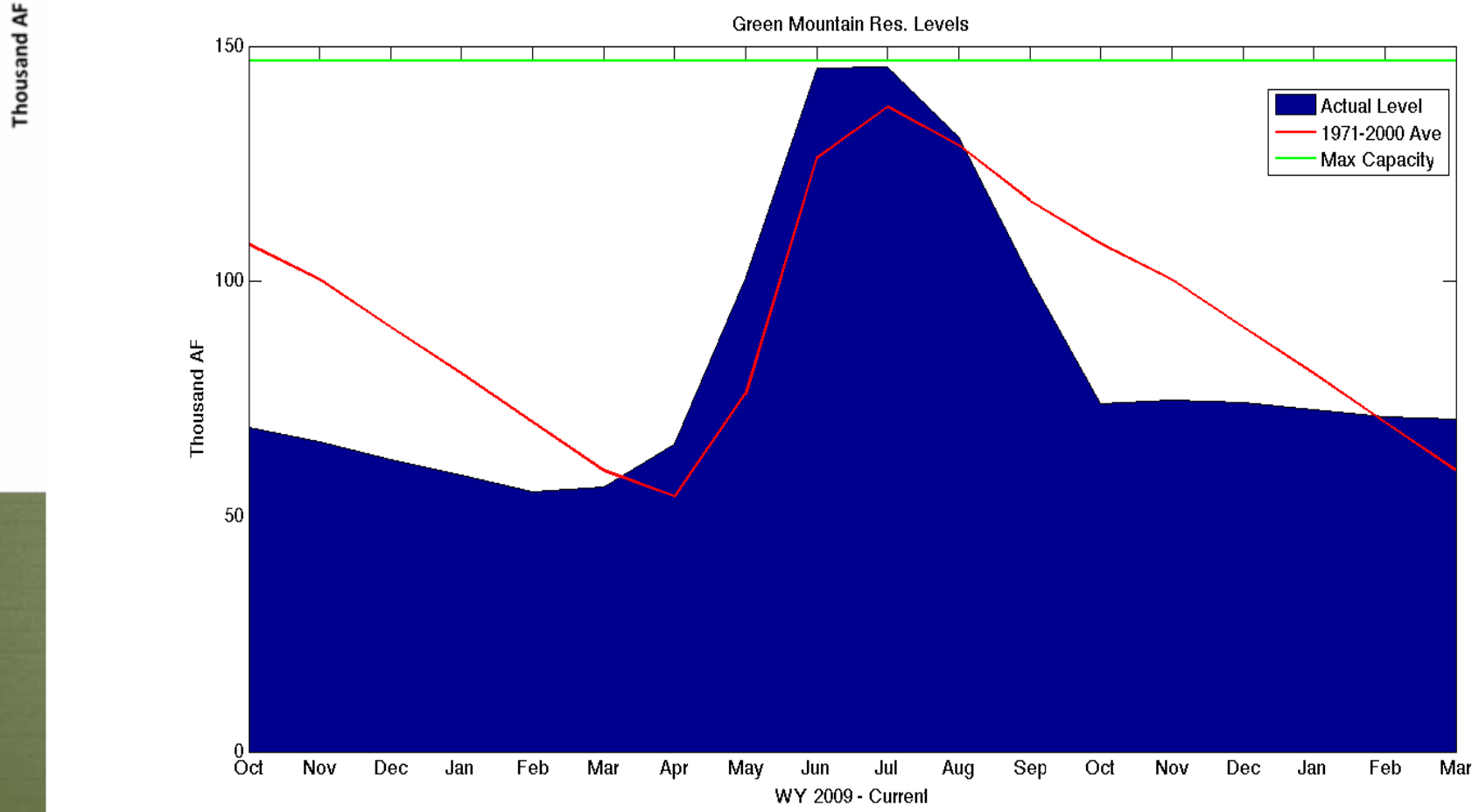
4 April 2010
Percentage of Streamgages per Percentile Class
7-day Average Streamflow

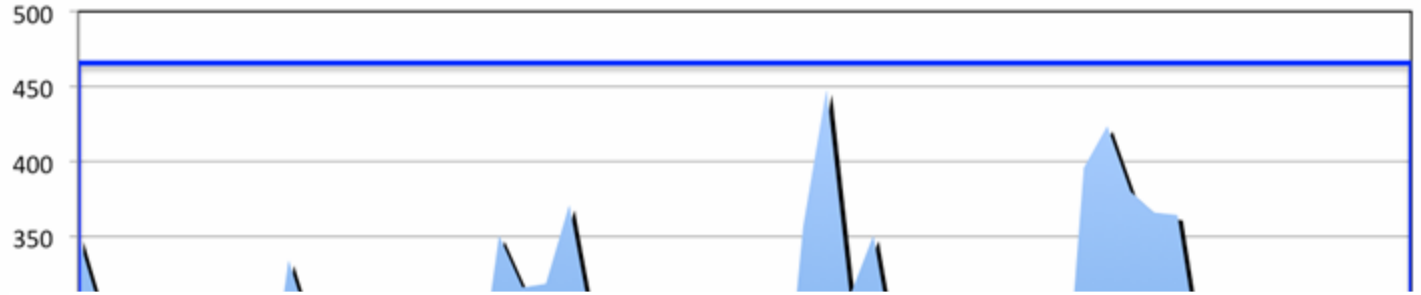


Reservoir Update

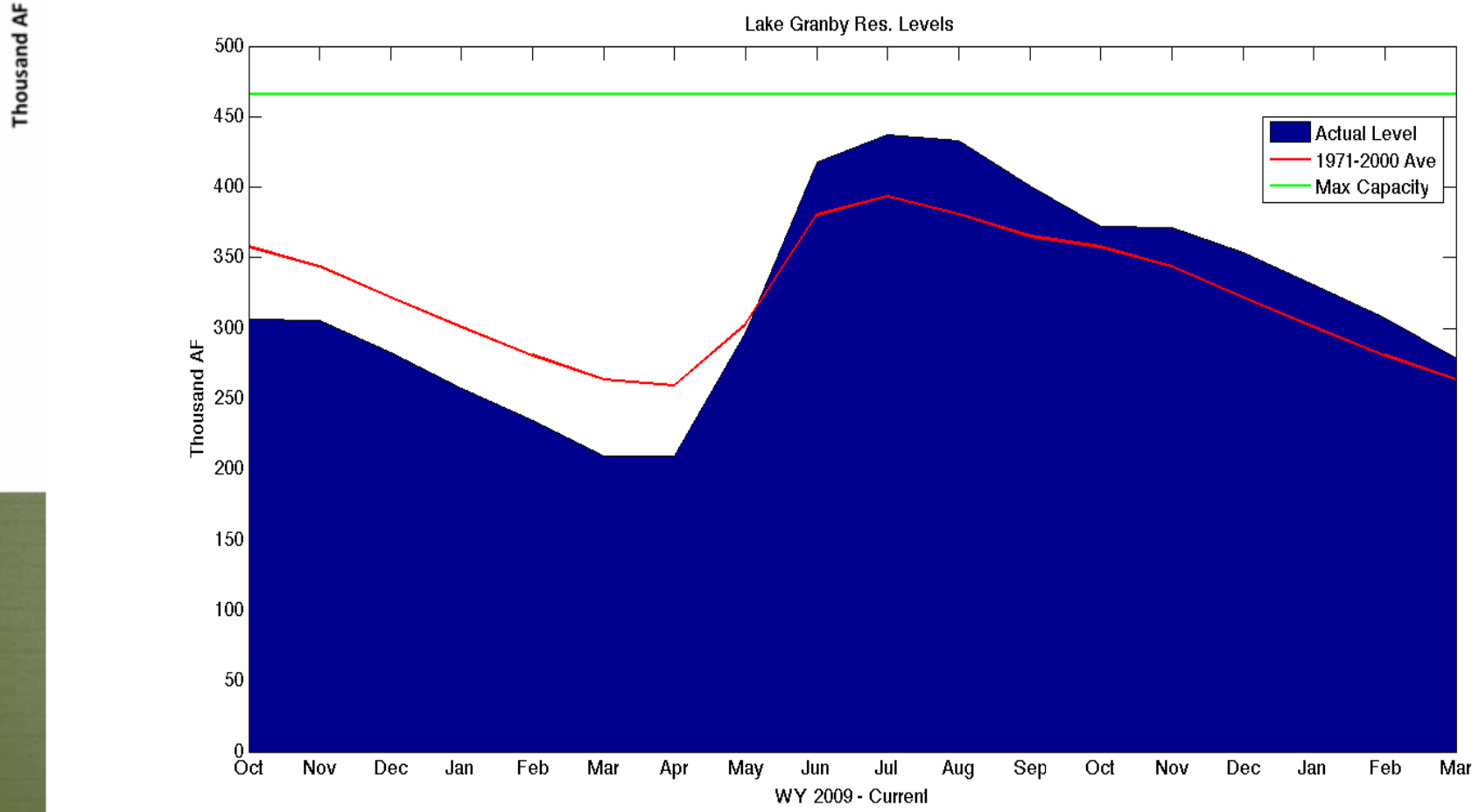
Green Mountain March Reservoir Storage

Max Capacity

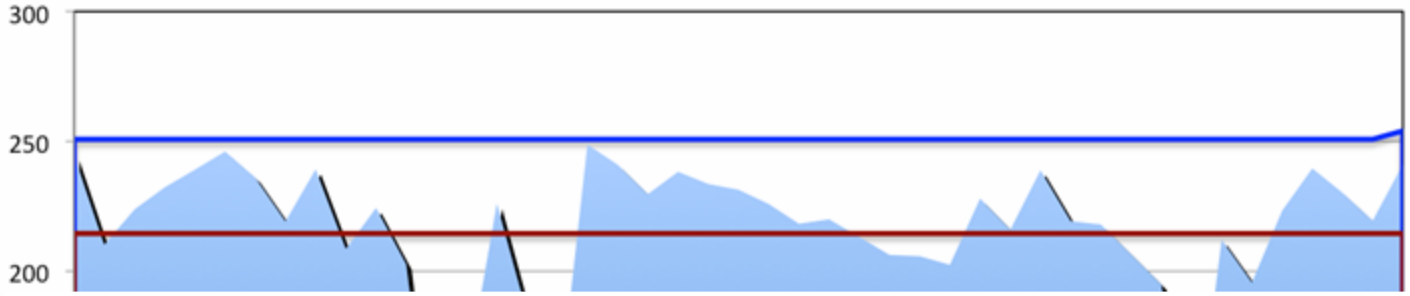




Max Capacity



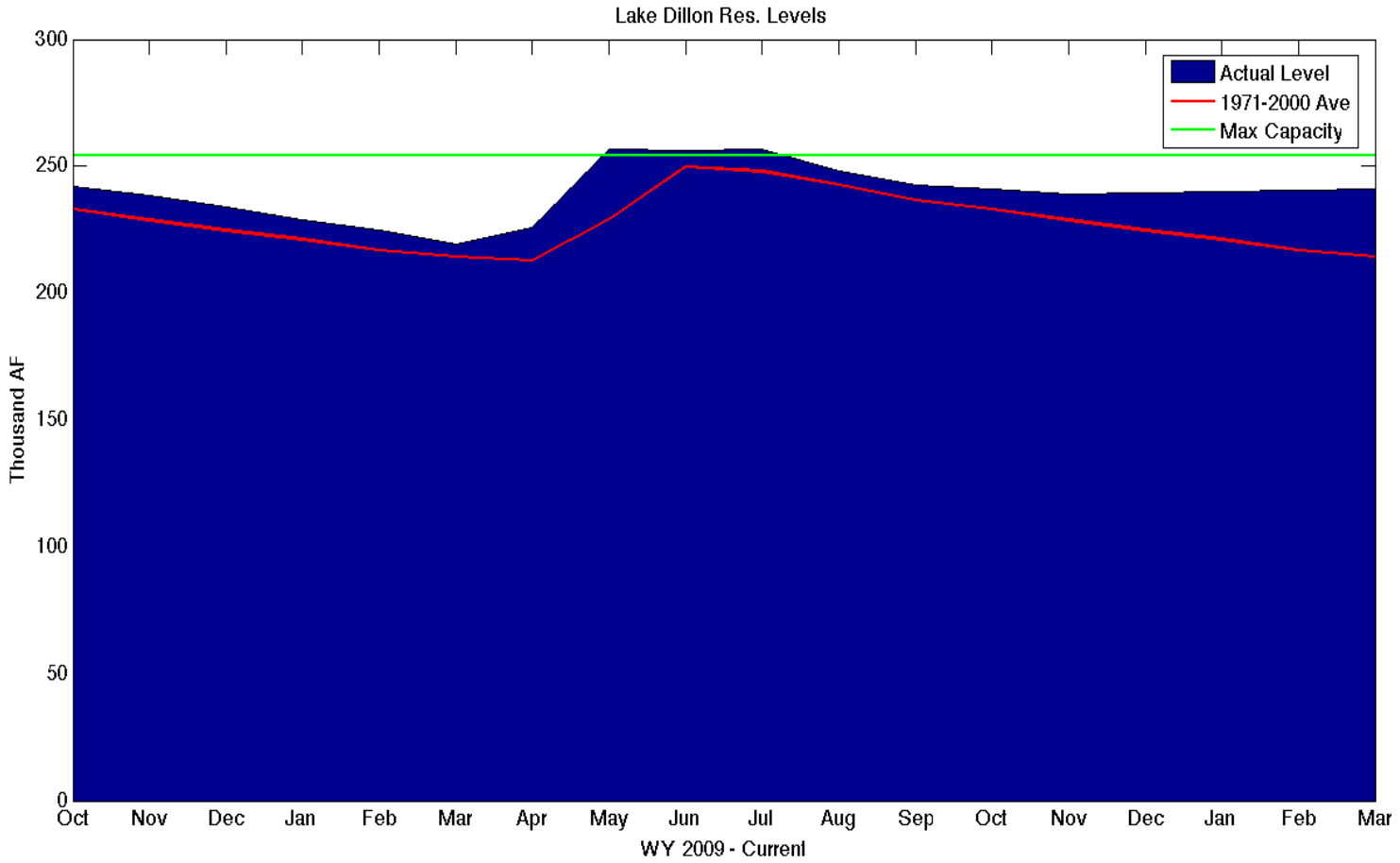
Lake Dillon March Reservoir Storage



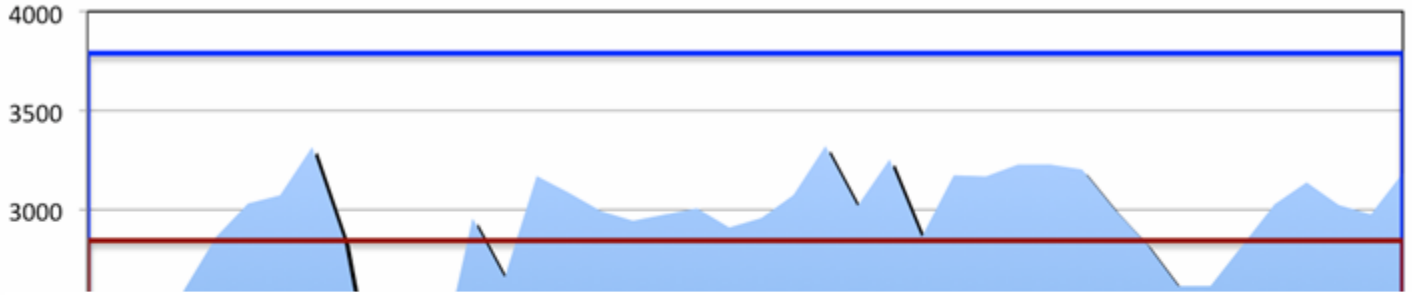
Max Capacity

1971-2000 Average

Thousand AF



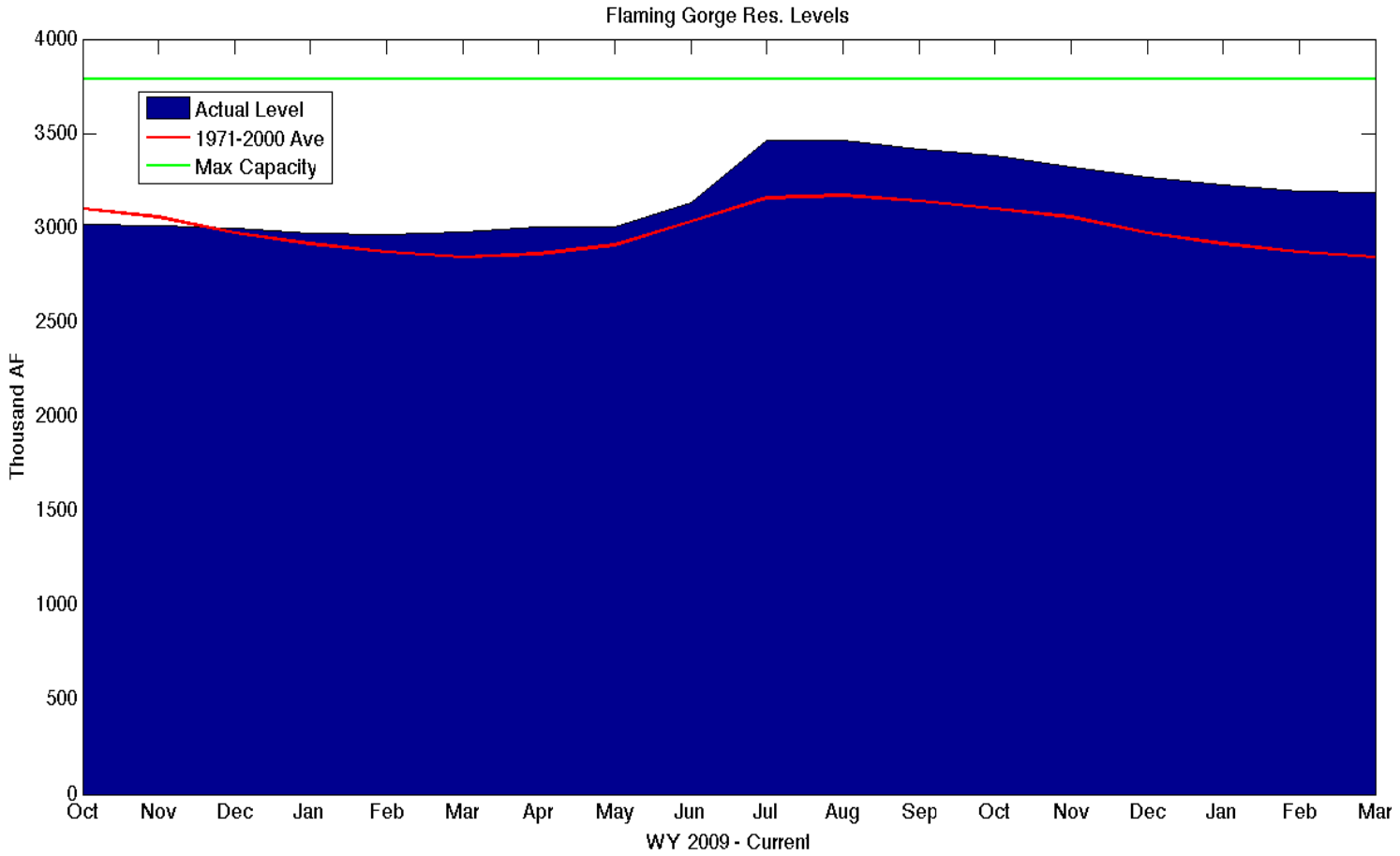
Flaming Gorge March Reservoir Storage



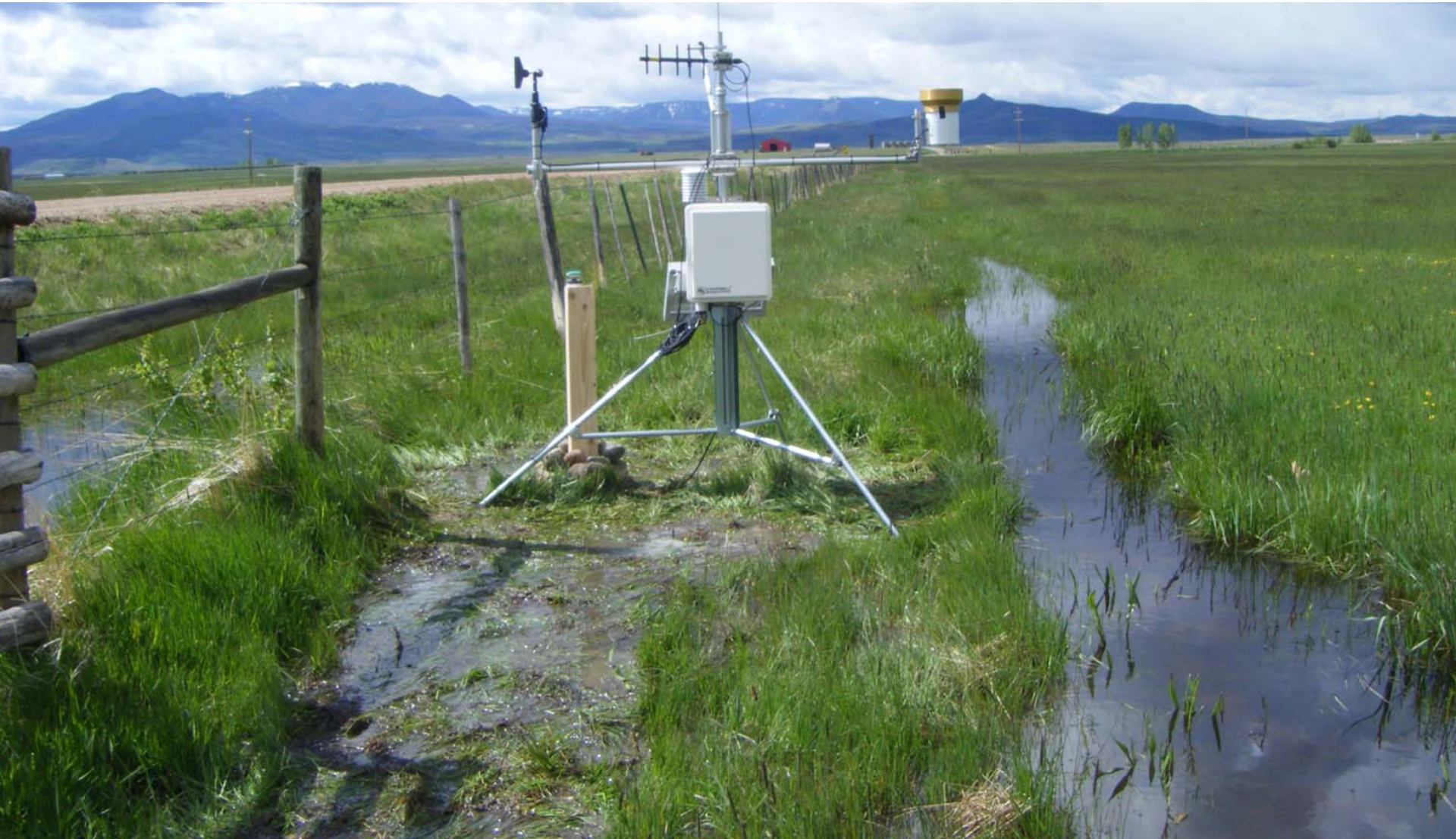
Max Capacity

1971-2000 Average

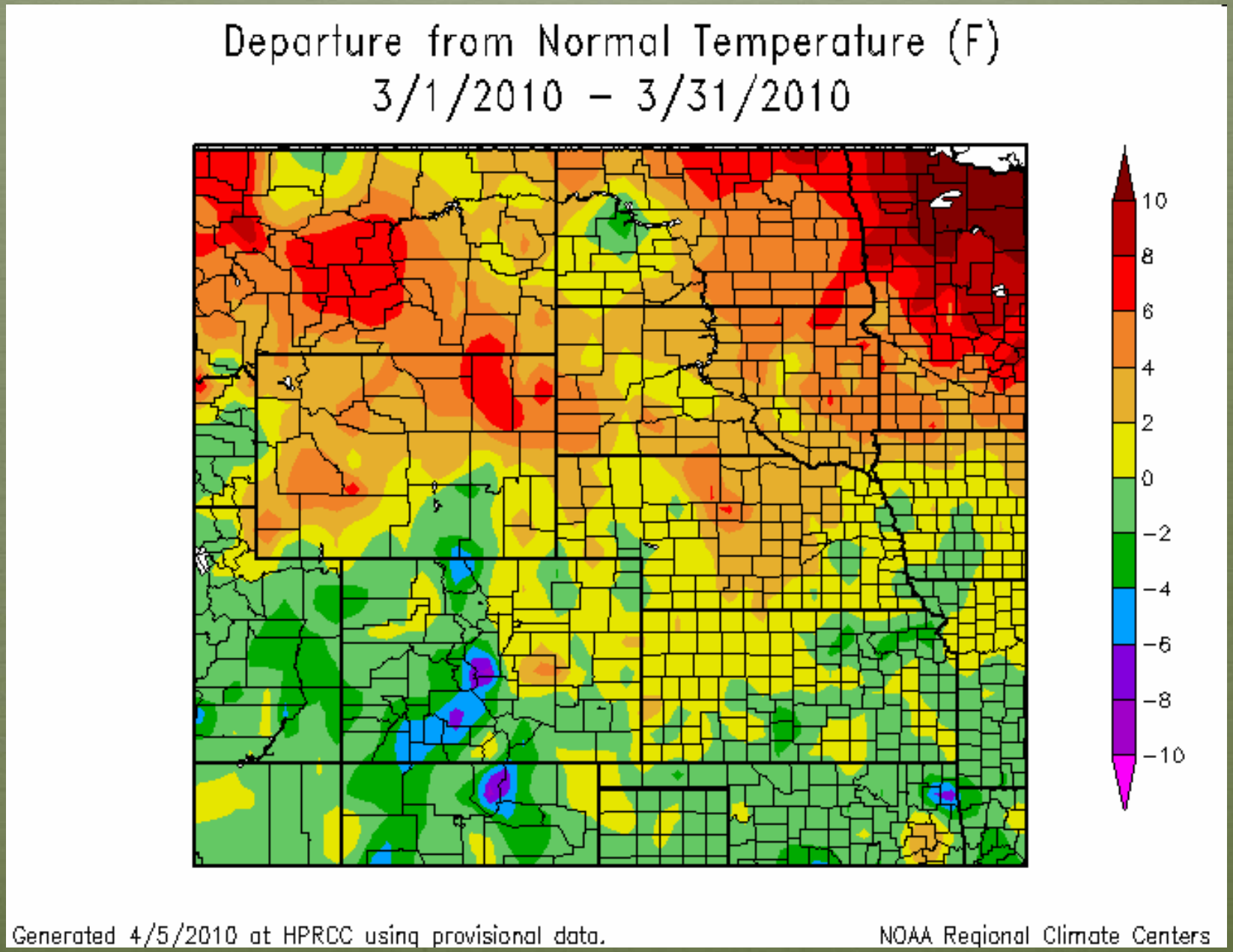
Thousand AF



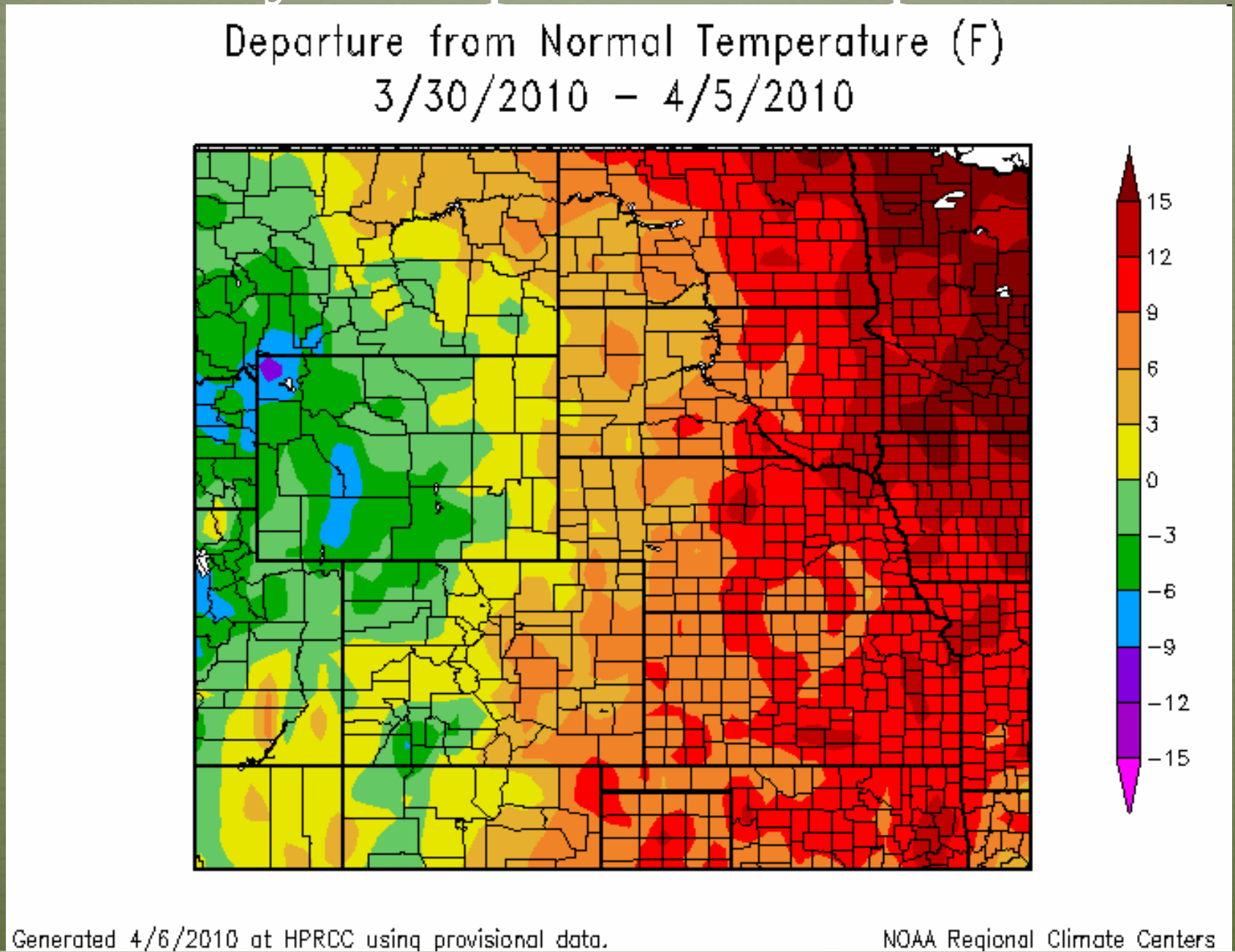
Water Demand

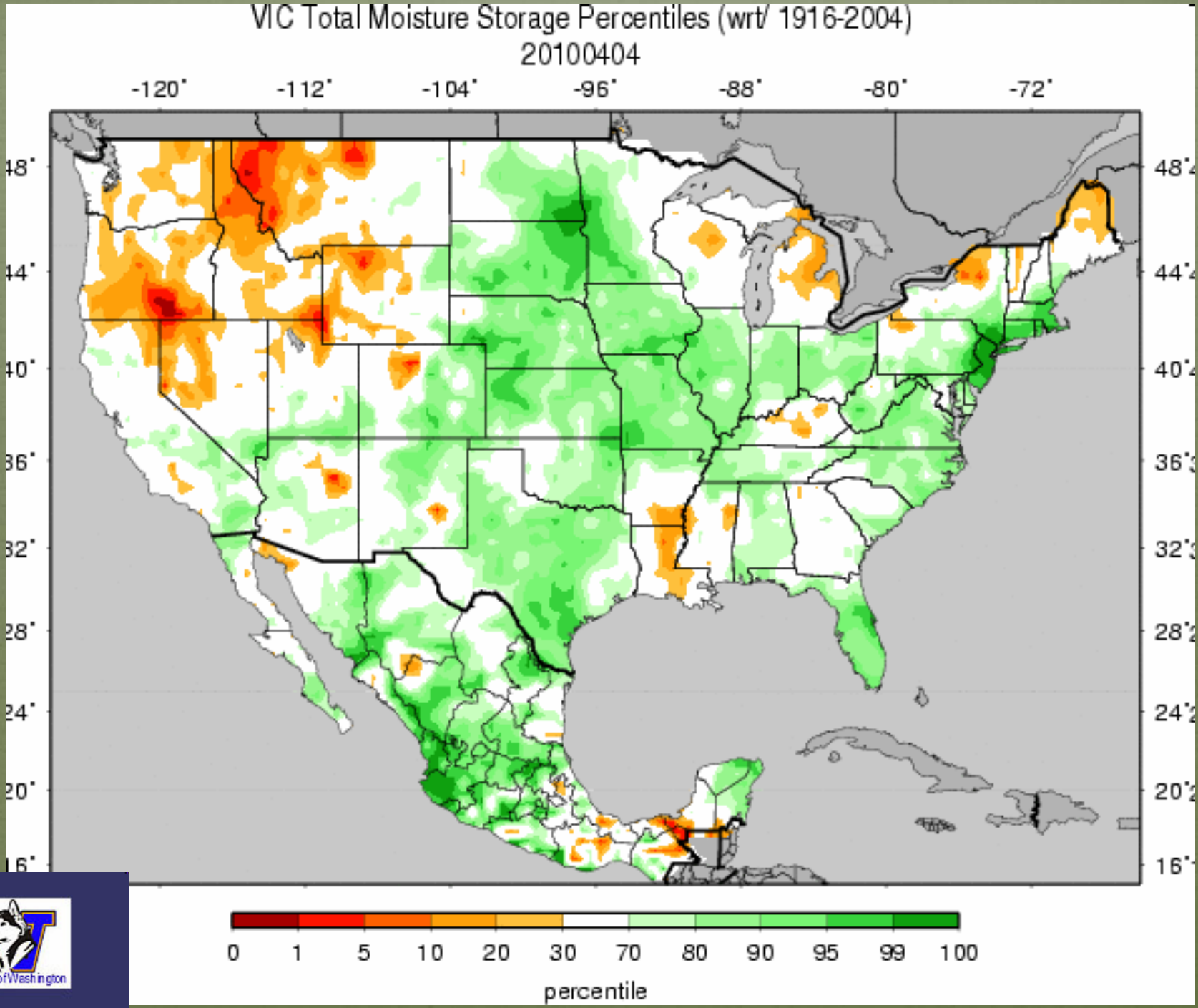


March Temperature Departure



7 Day Temperature Departure

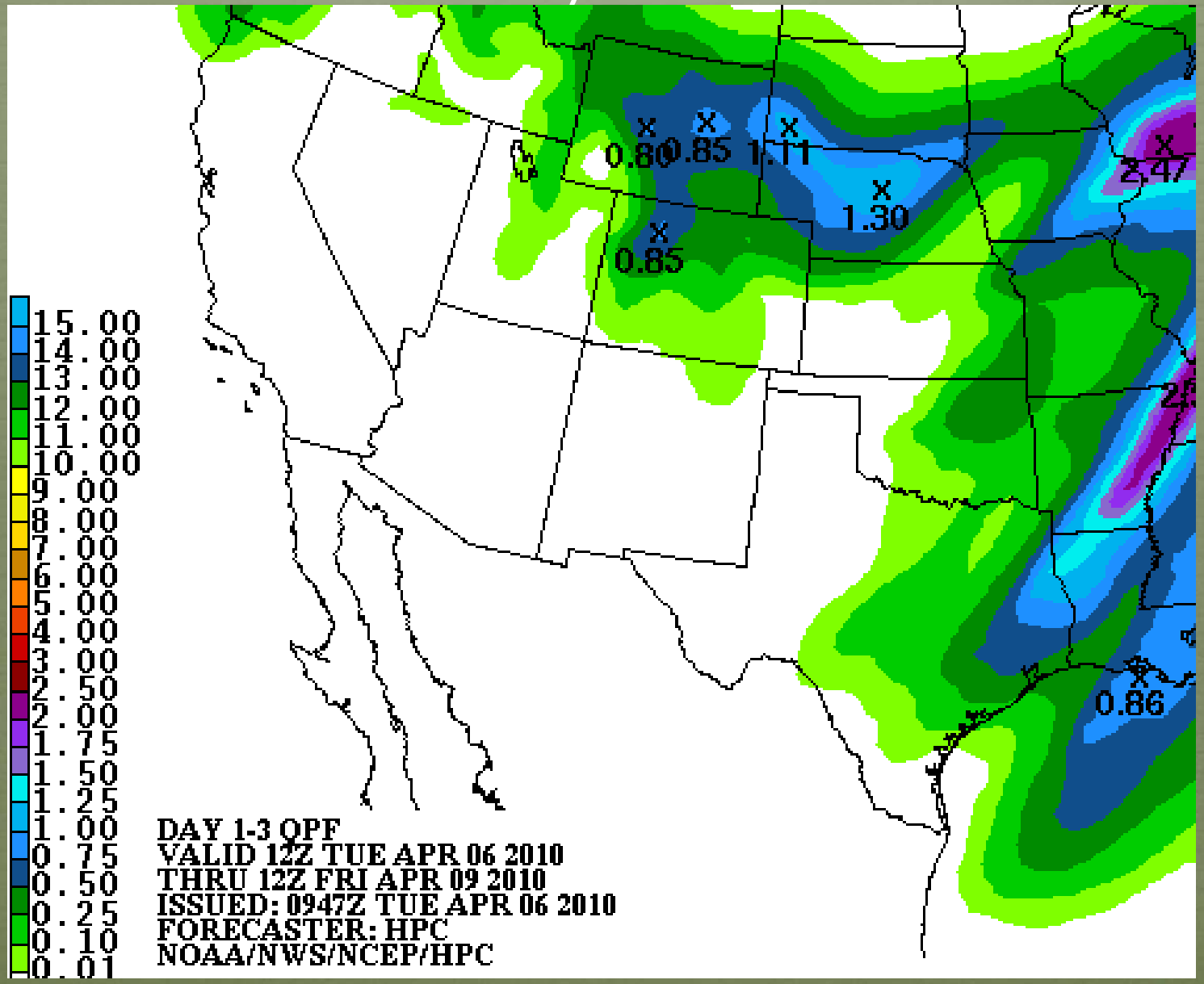




University of Washington

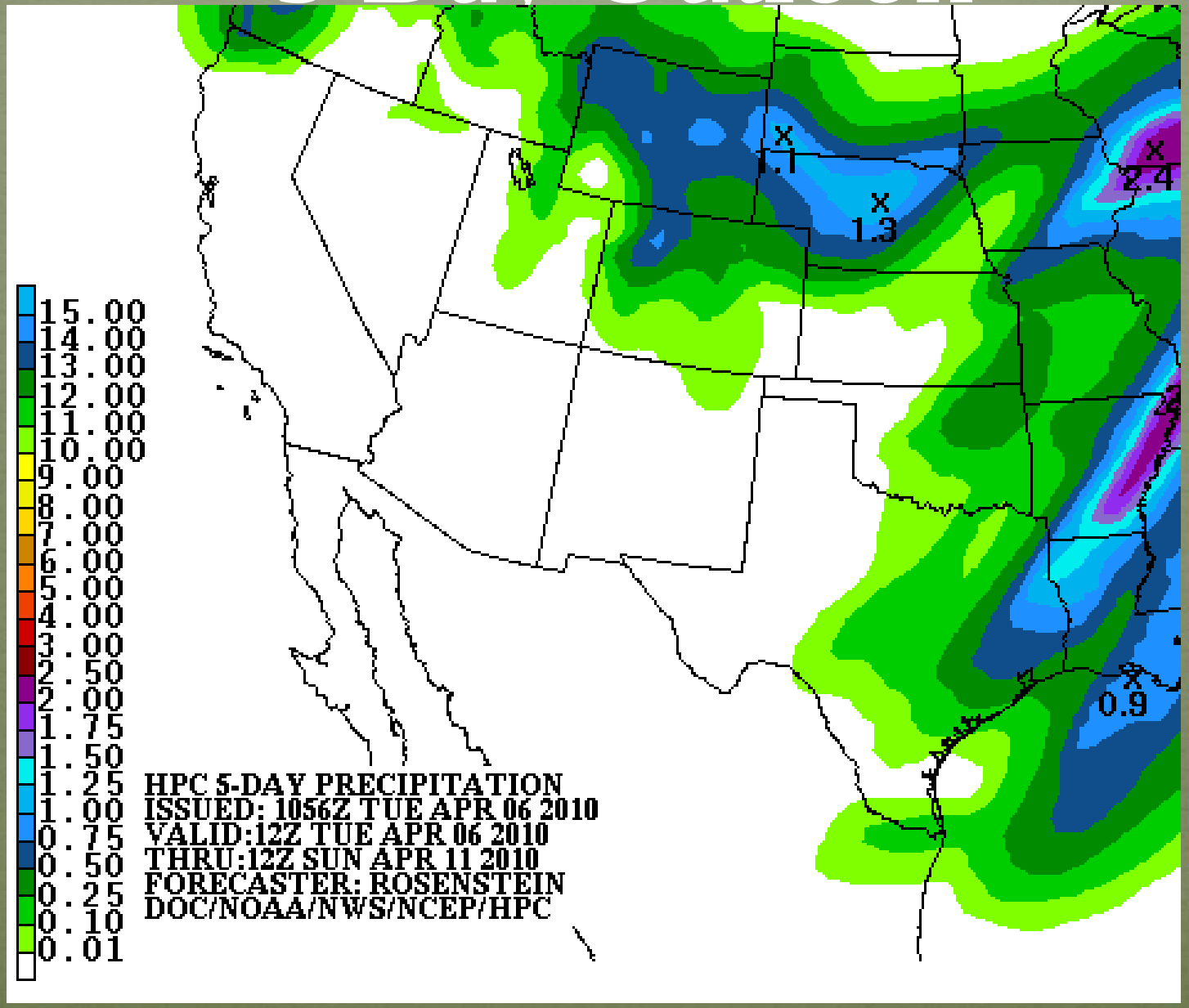
Precipitation Forecast

1-3 Day Outlook



http://www.hpc.ncep.noaa.gov/

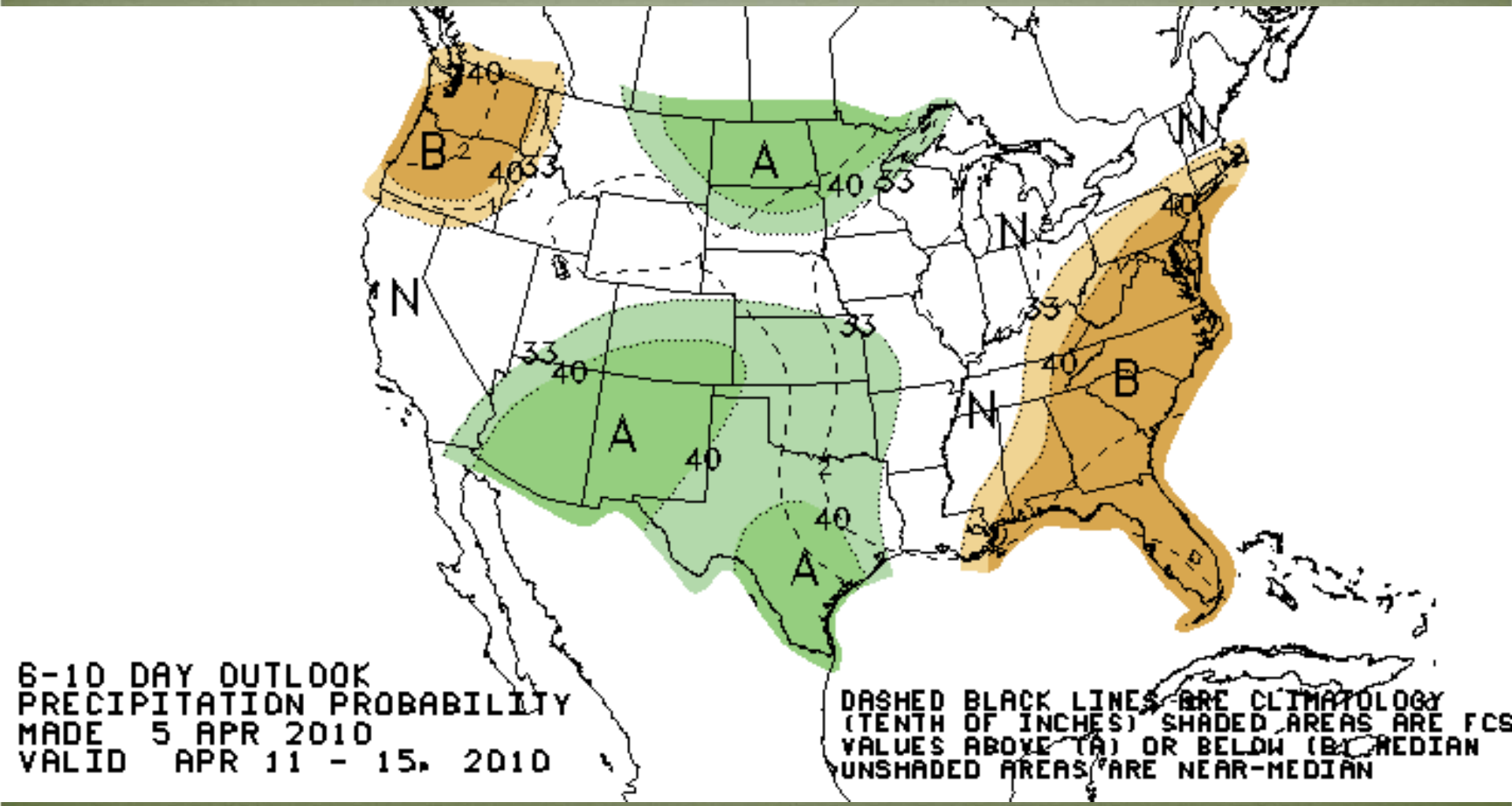
5 Day Outlook



http://www.hpc.ncep.noaa.gov/

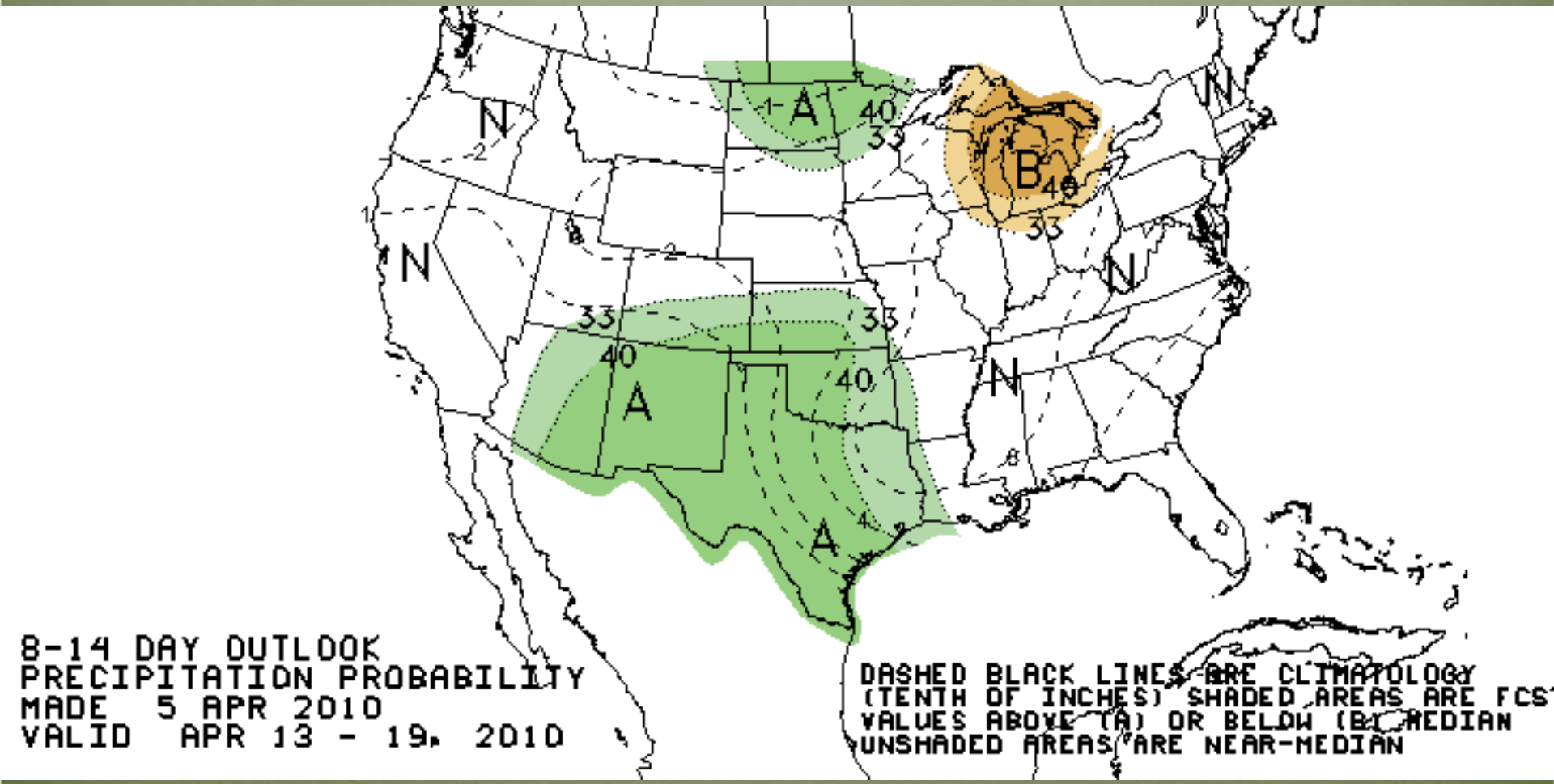
6-10 Day Outlook

11 April - 15 April 2010



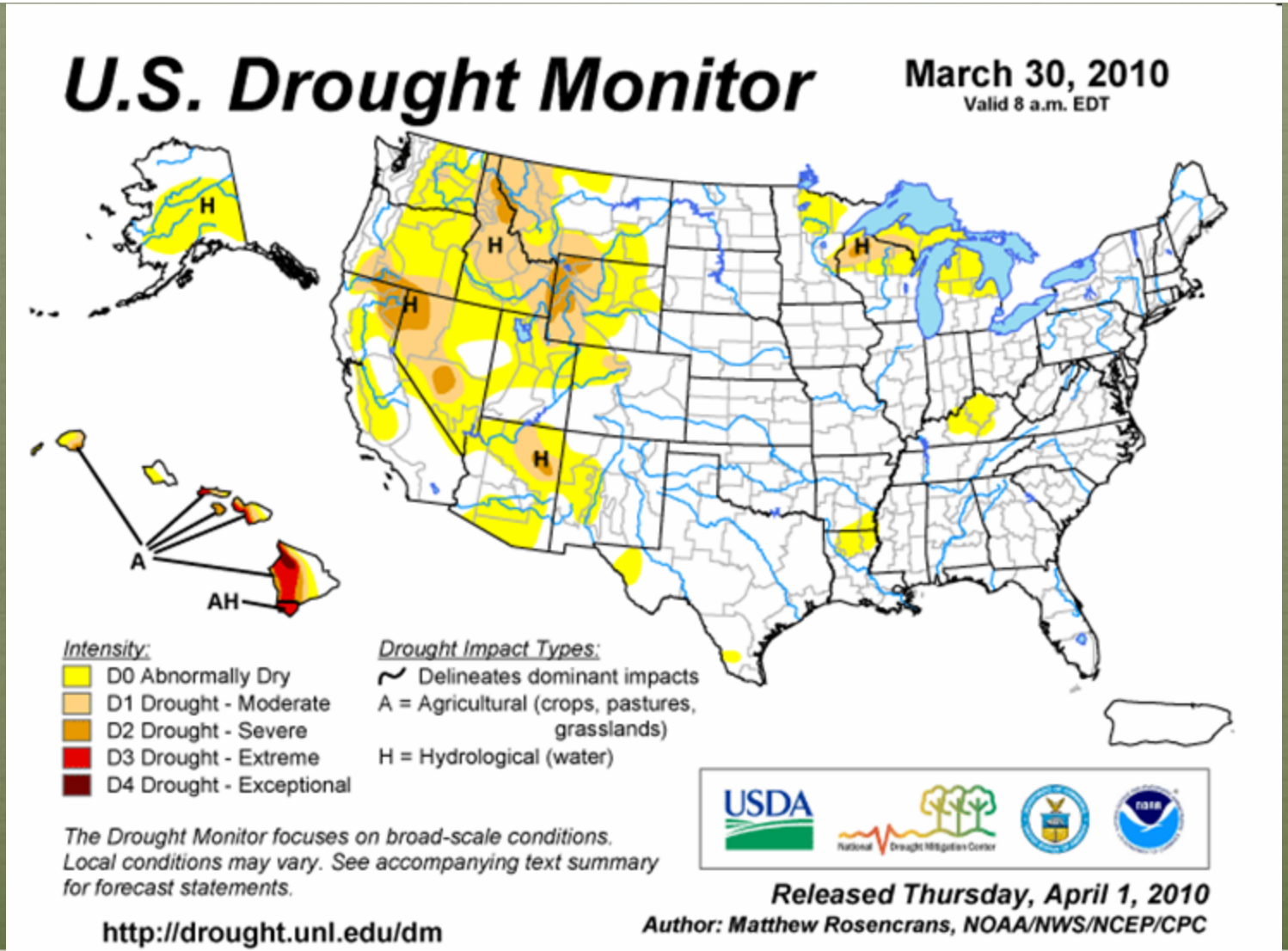
http://www.cpc.ncep.noaa.gov/

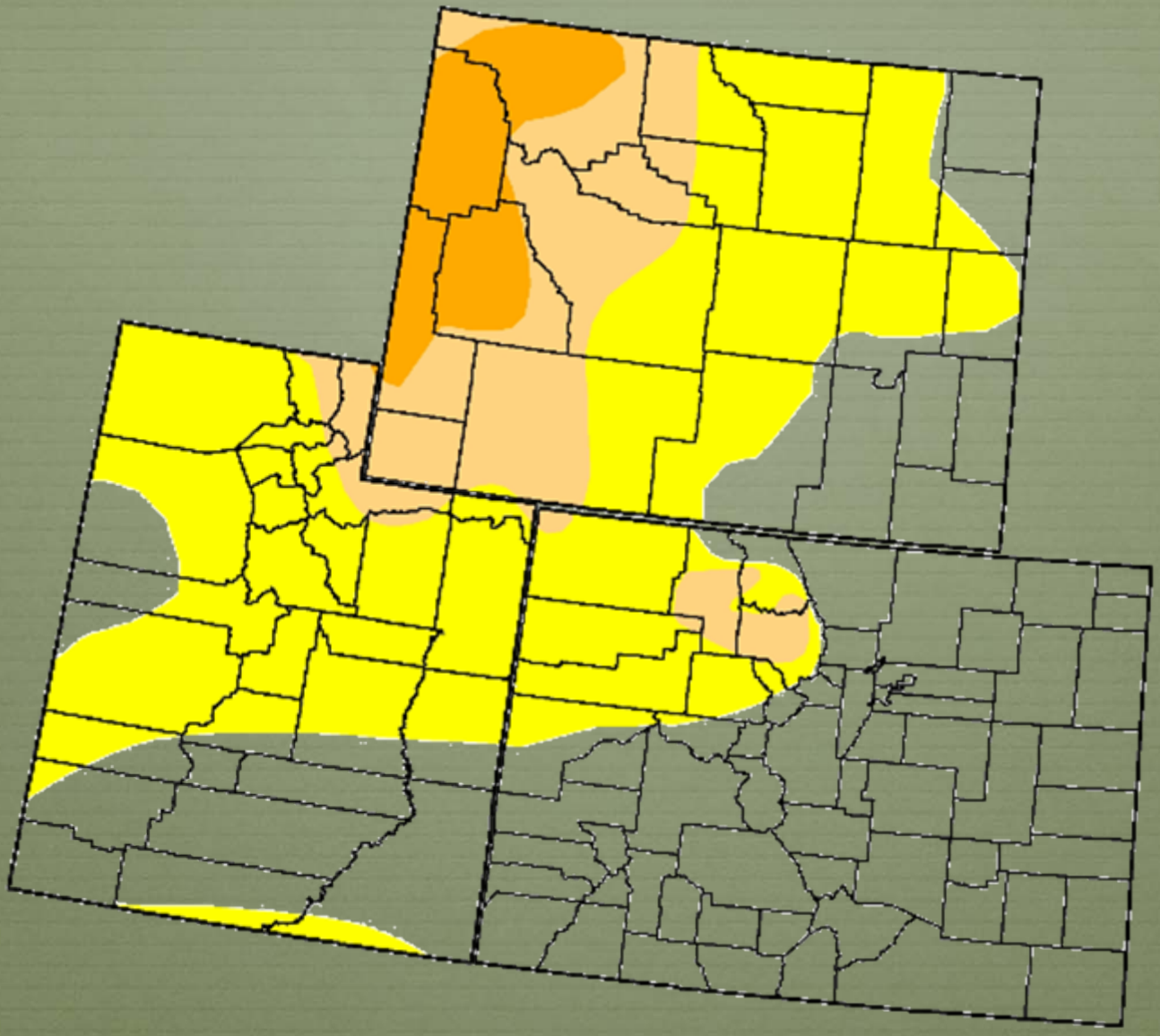
8-14 Day Outlook
13 April – 19 April 2010

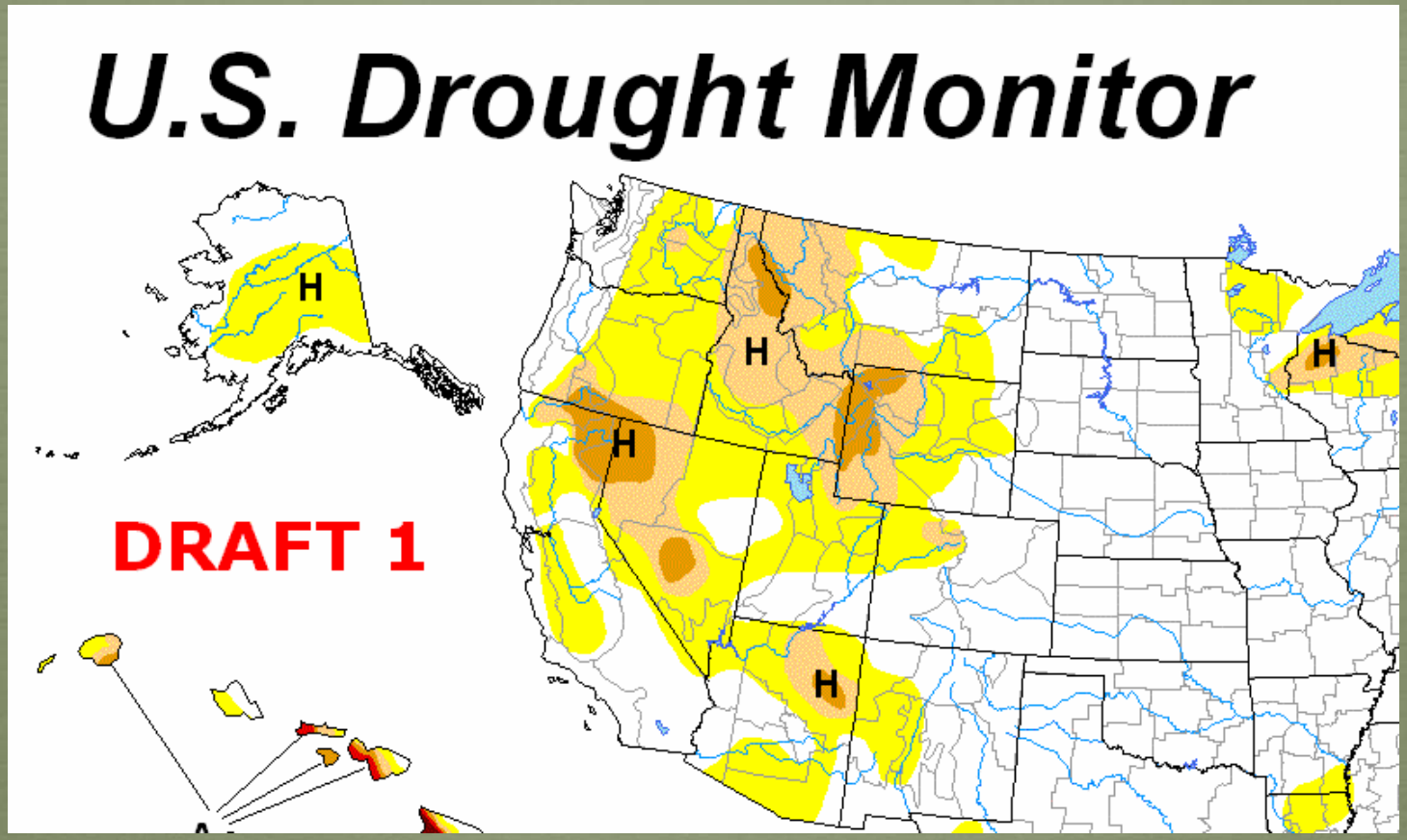


http://www.cpc.ncep.noaa.gov/

Recommendations







❖ Western-WY: recent prcp is helpful, though may not warrant changes to current drought depiction. Recent storms have taken area from ~55% of historical average to only about ~65% in driest parts of area (local input). Minor trimming/refinement of D1 in sw part of state is being considered, but would like to get input from nearby CO and UT before doing so.

INFO

For more information

Summary

- A series of storm since last Tuesday brought significant precipitation to regions of northwestern Colorado, northeastern Utah and western Wyoming. This moisture helped boost both snowpack and precipitation percent of averages at many sites in the tri-state area that have been lagging behind average. The Provo River Basin in Utah saw a 16% increase in snowpack percent of average from last week. The Green River Basin in Wyoming saw an 11% increase. In the Upper Colorado River basin in Colorado, most snotel stations experienced a 5 to 10% increase in water year precipitation percent of average from last week. Significant precipitation continues today but a drying and warming trend is expected later in the week. Many stream gages are still iced up, but overall streamflow for this time of year remains below to significantly below average for this time of year over most of the upper Colorado River Basin (CO,WY, UT). With warming temperatures expected and recent significant deposits of dust on snow over much of Colorado's high country, the start of the 2010 snow melt season is now imminent. Seasonal streamflow projections as of April 1 indicate much below average streamflow for many forecast points. Most recent reservoir numbers in the Colorado River basin show that levels are staying fairly steady from the previous months and are near average for this time of year. Thanks to a cold winter and generous precipitation east of the mountains since last summer, heavy early demand for irrigation water is not expected. Flaming Gorge Reservoir levels in WY/UT, while still near average, fell from February to March, which is a departure from the past few years and may be an indication of the low inflows that are occurring and are likely in the coming months.

  Despite liberal amounts of precipitation that fell this week, there are no suggestions to decrease any of the D1 in Colorado or change the D0 boundaries. Much of the precipitation that fell was concentrated from Moffat County (east of the D1 that is in the extreme northwestern part of the county) and east into the Park and Gore ranges. Though there may be suggestions to subtly re-shape the D1 in Routt, Jackson and Grand Counties, there are no suggestions to decrease any of the D1 in the area. The region did see some improvements from last week, but since the area was well into D1 (with even some justification to introduce D2 into certain parts), the consensus is that the improvements are not enough to take us out of that category yet.