Winter 2010

Weekly Climate, Water & Drought Assessment

Today’s Agenda

-Background

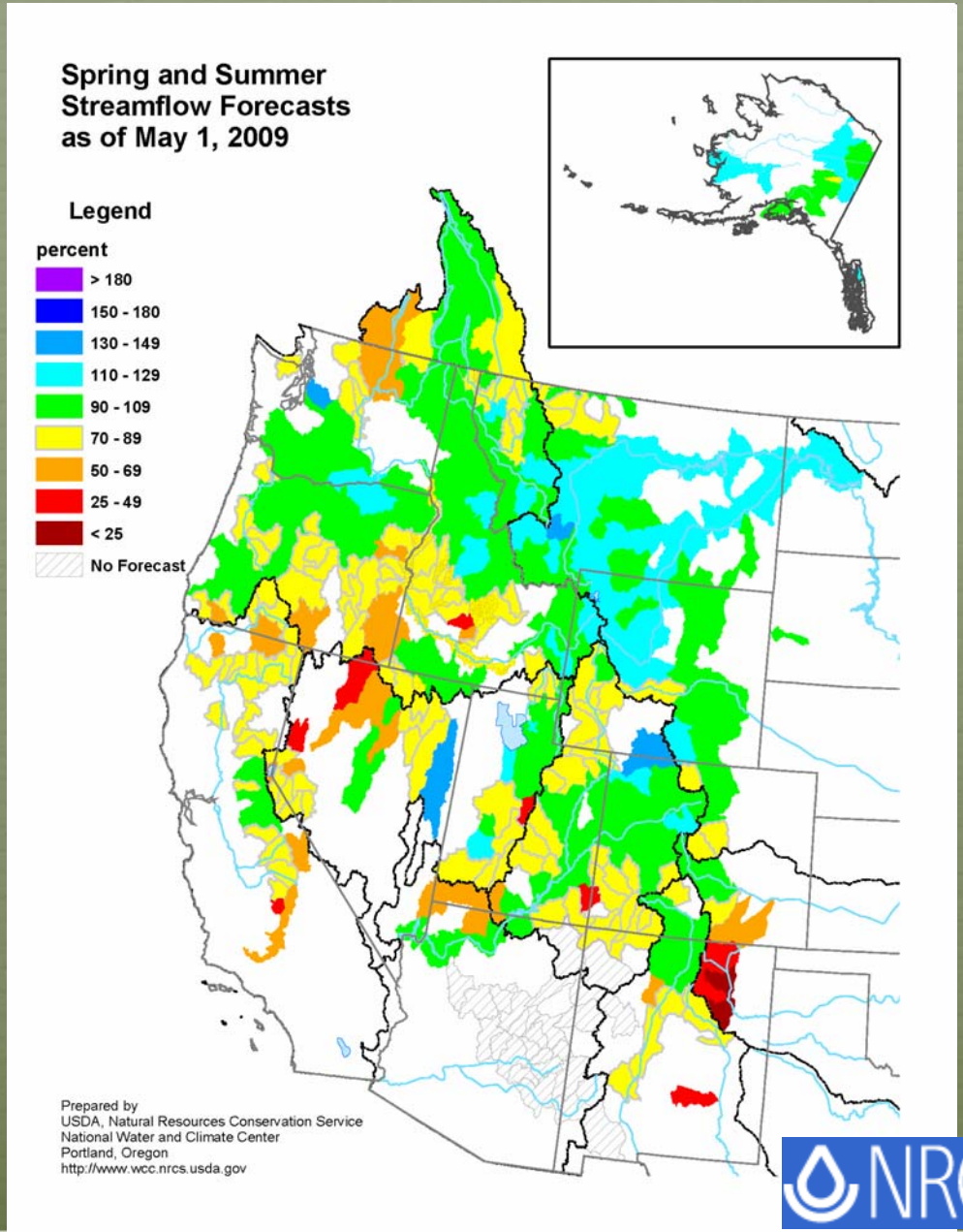
- Assessment of current water conditions

- Precipitation Forecast

- Recommendations for Drought Monitor

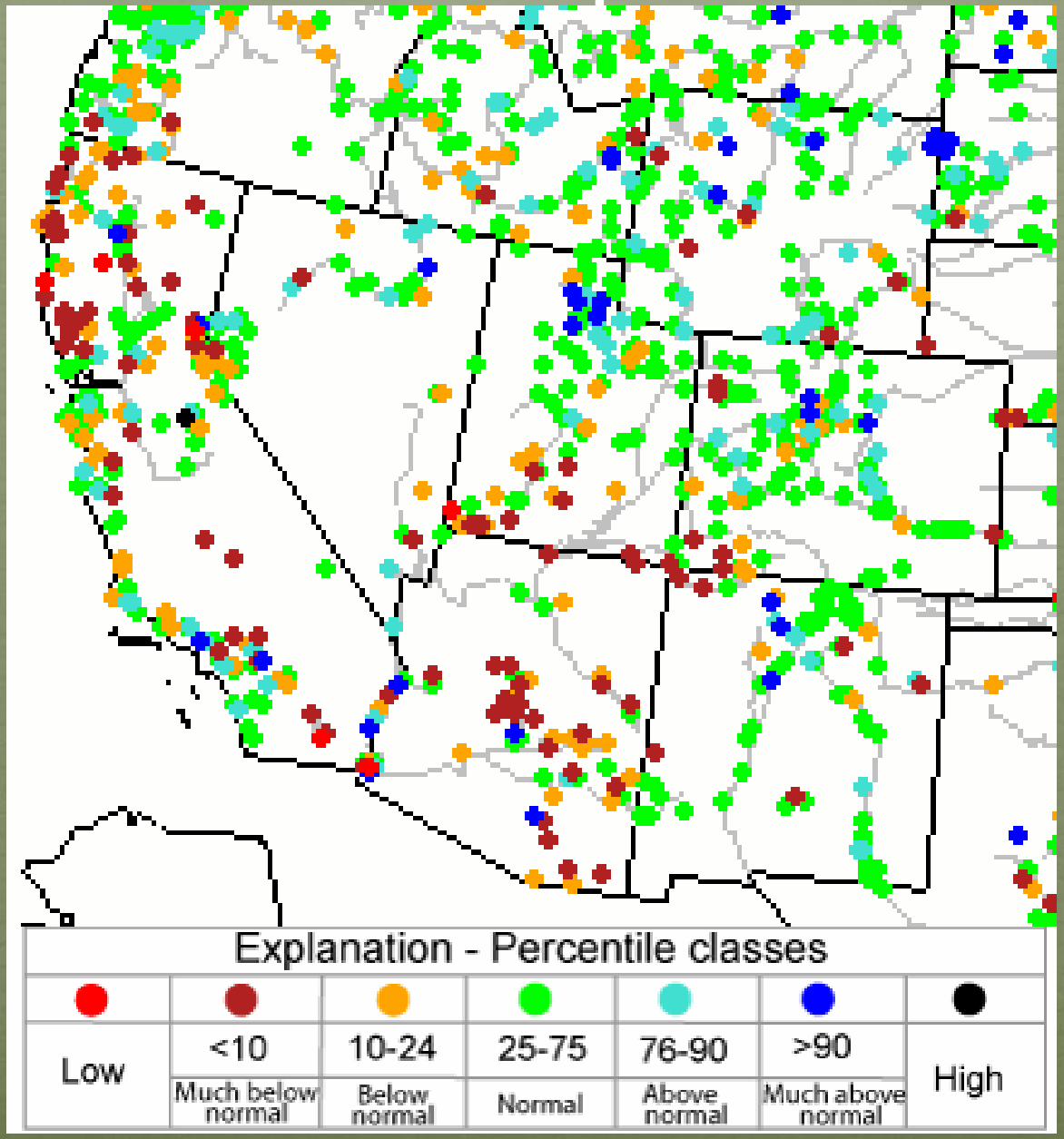

Background

Streamflow Forecast May 1, 2009



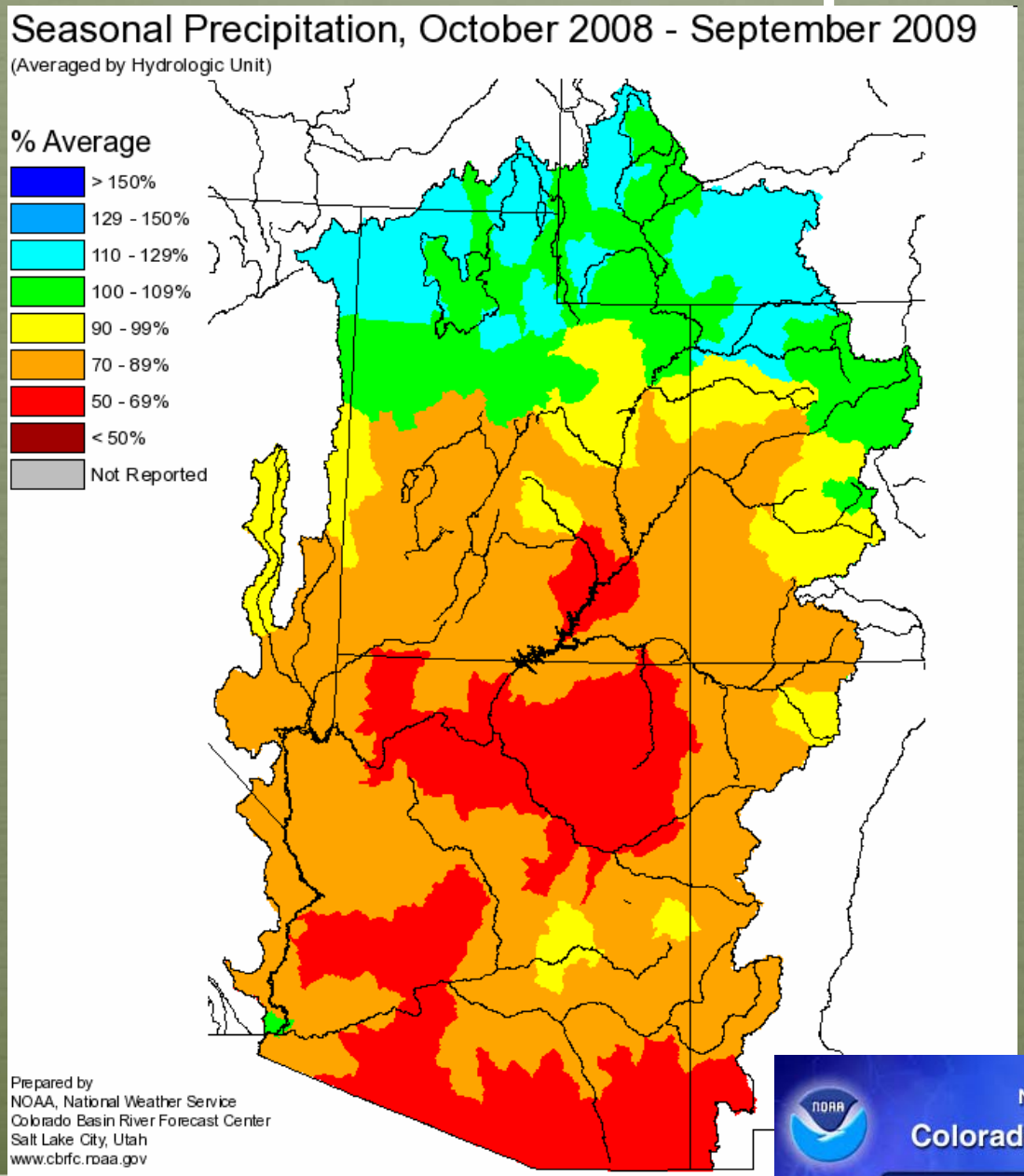
NRCS Natural Resources Conservation Service

Streamflow Sept 30th 2009



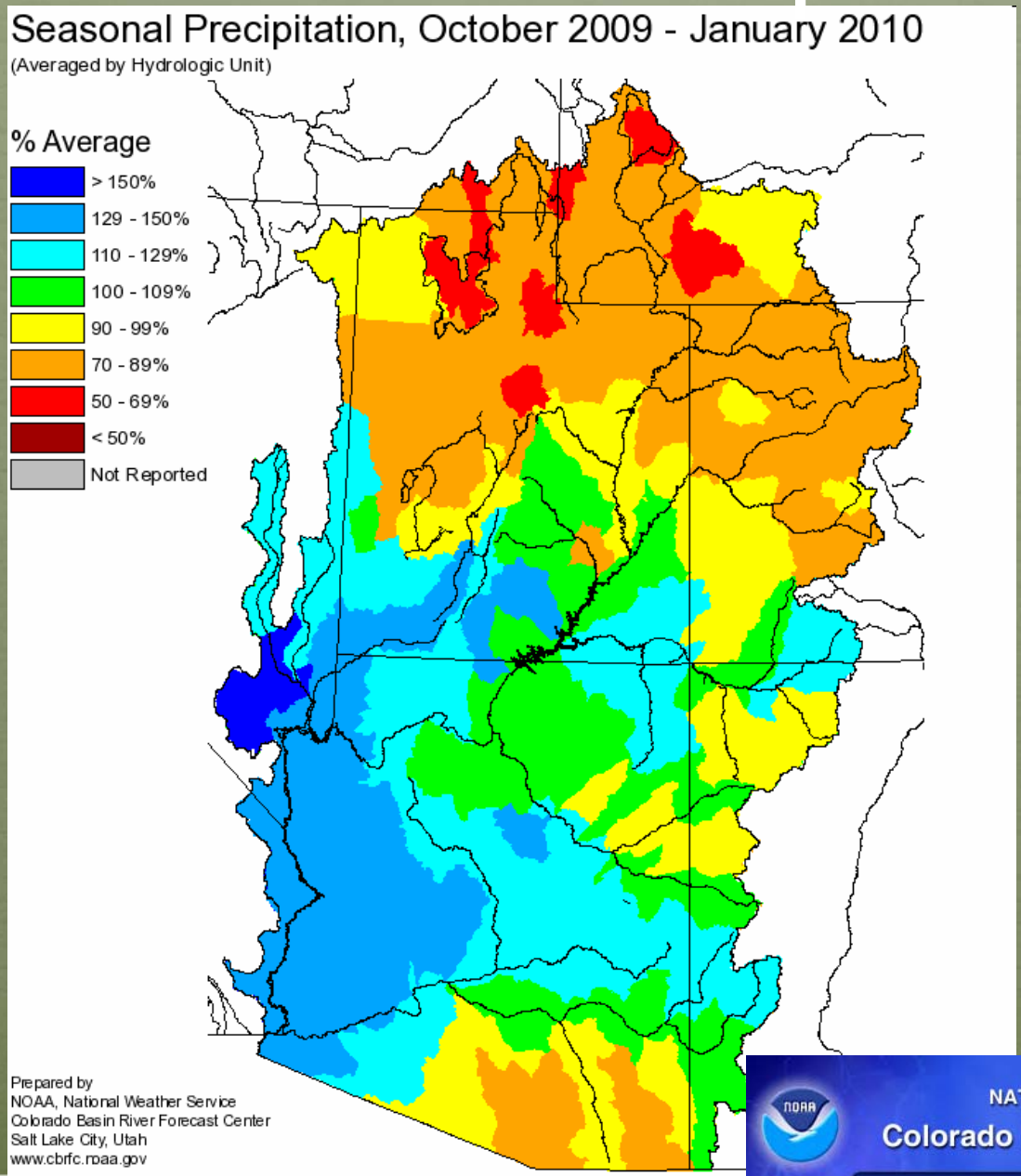
USGS
science for a changing world

WY 2009 Precipitation

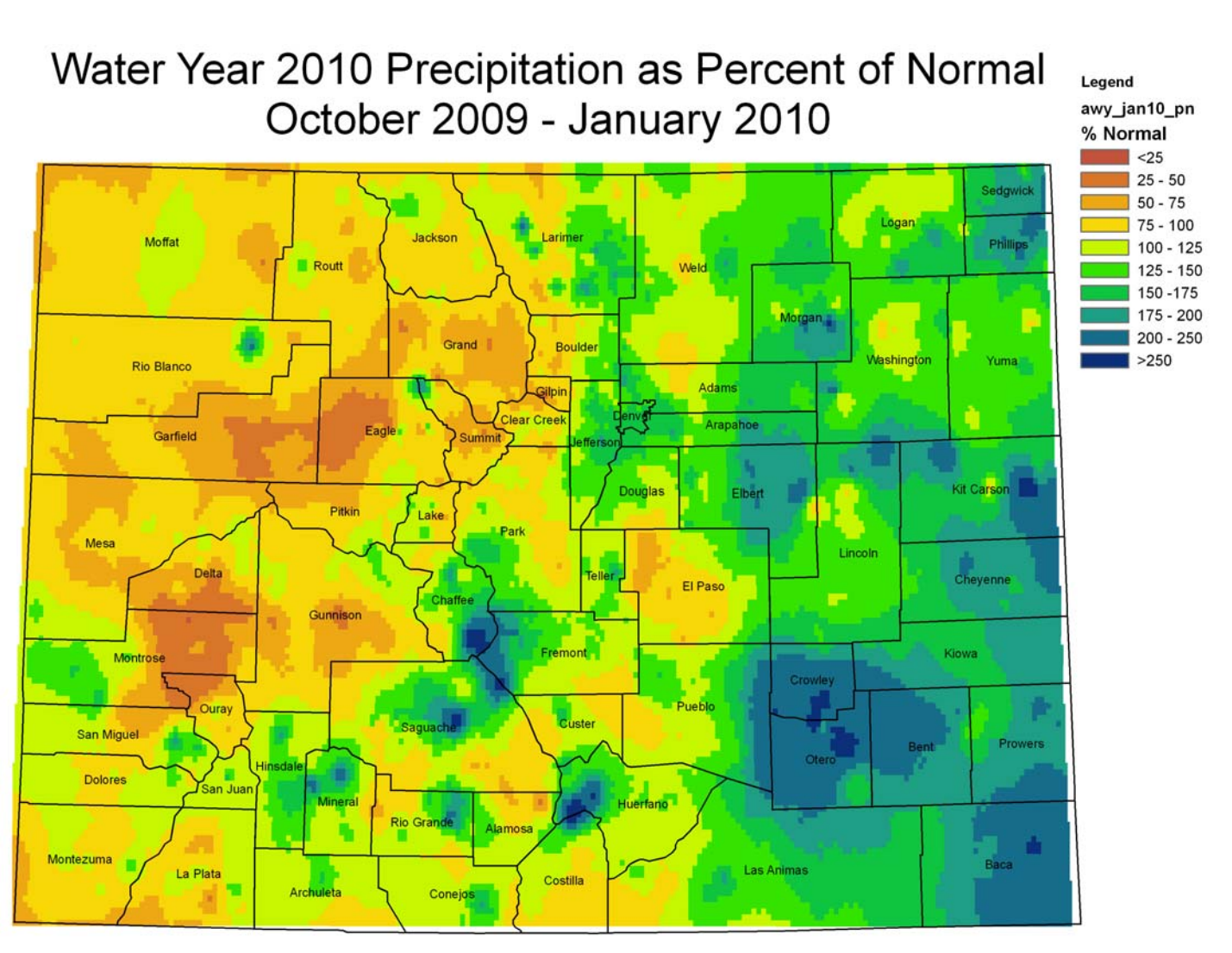


NATIONAL WEATHER SERVICE
Colorado Basin River Forecast Center

WY 2010 Precipitation



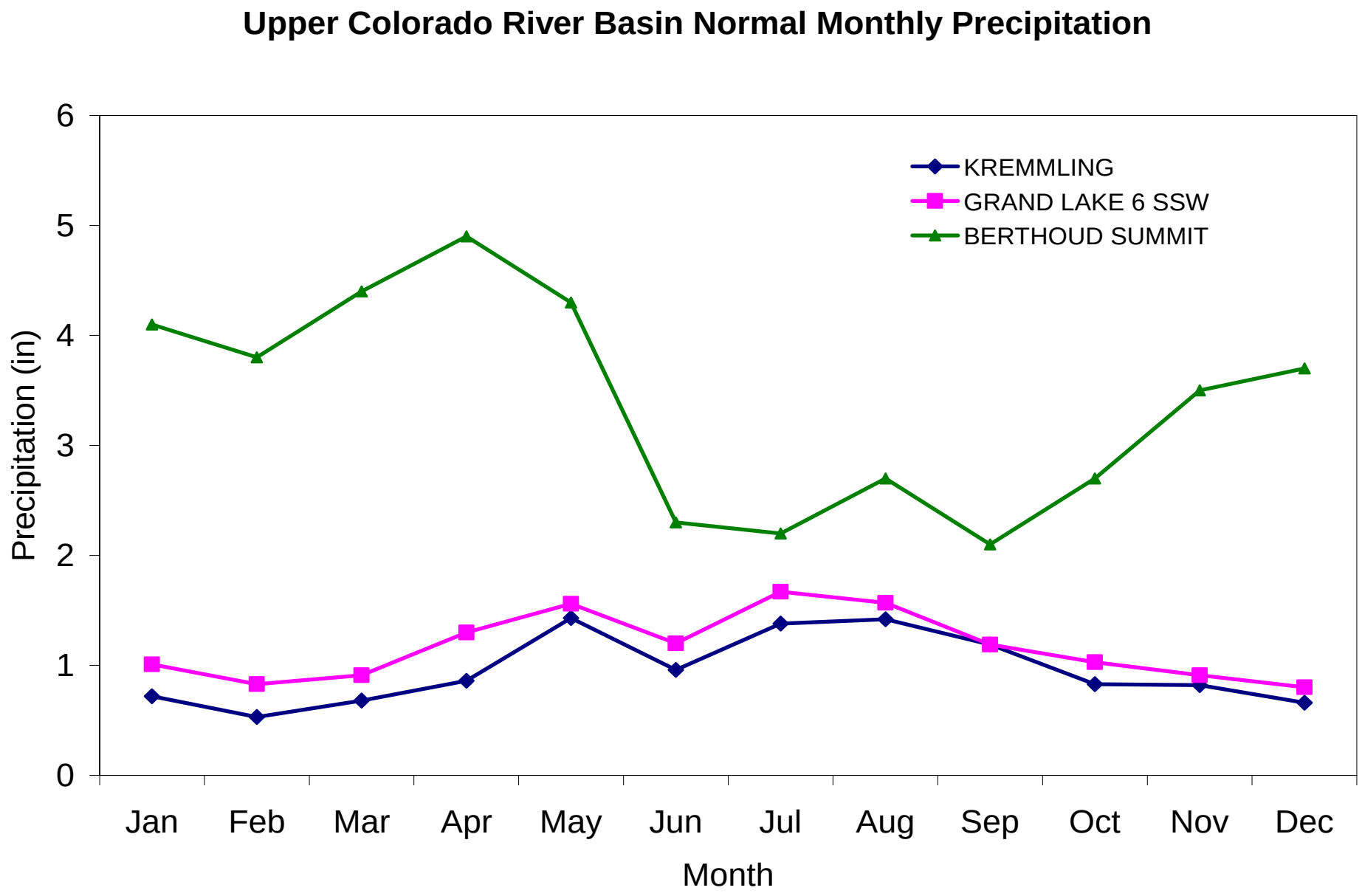
WY 2010 Precipitation As Percent of Normal Through Jan 2010



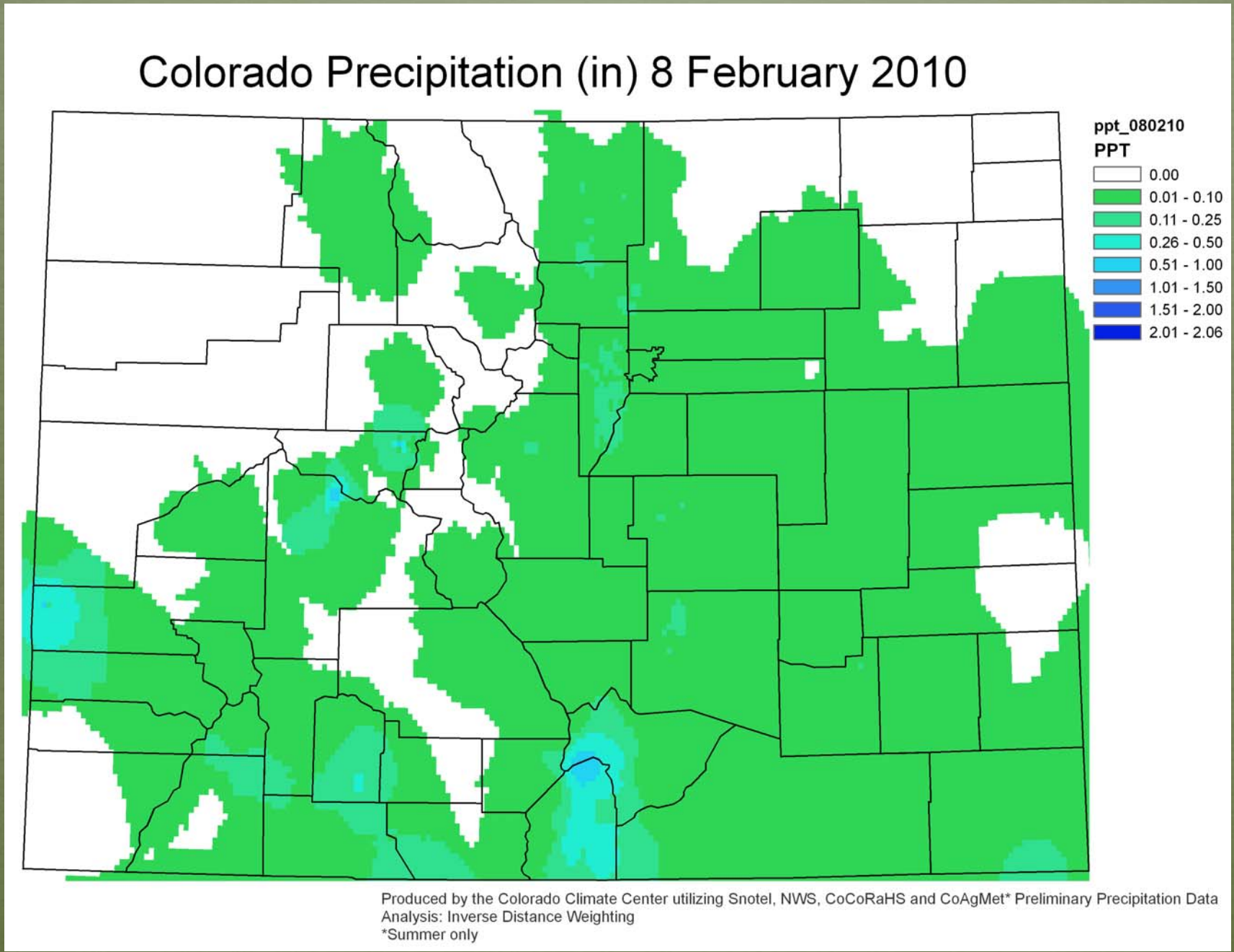
Produced by the Colorado Climate Center utilizes : NWS, Snotel, CoCoRaHS and CoAgMet

Precipitation/Snowpack Update

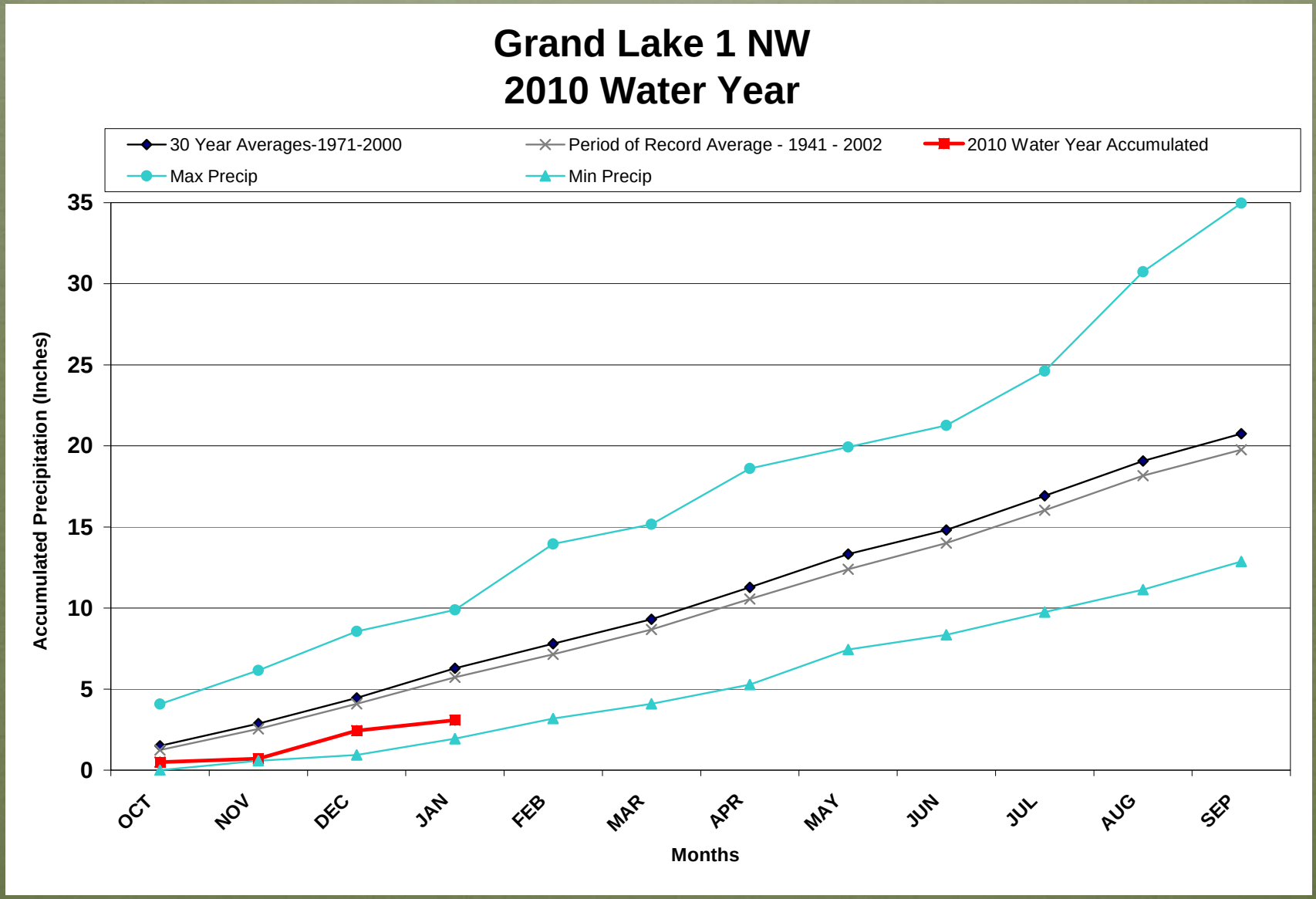
Upper Colorado Normal Precipitation

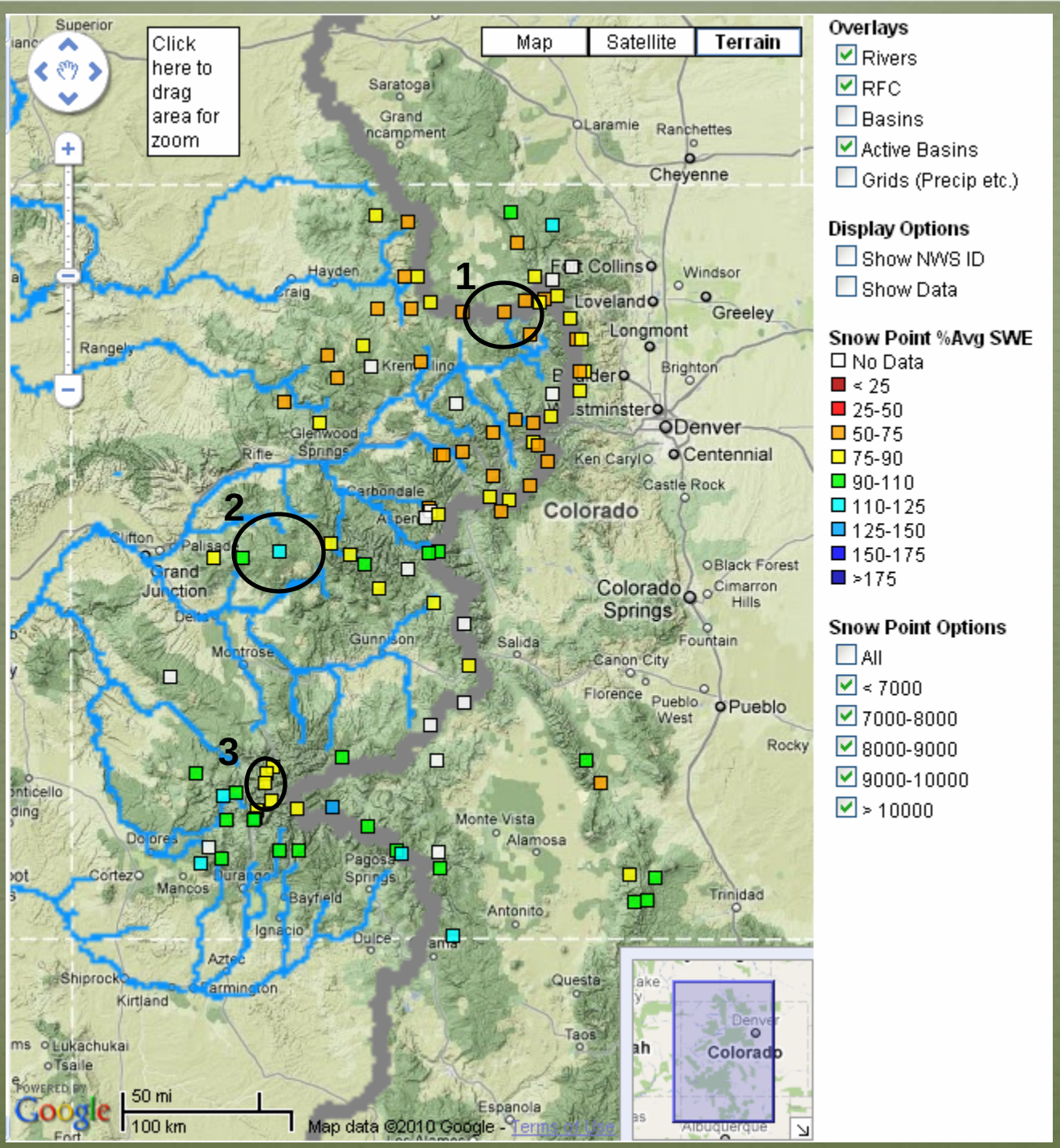


7 Day Precipitation Animation 8-14 February 2010



Grand Lake 1NW





Overlays

- [x] Rivers
- [x] RFC
- [ ] Basins
- [x] Active Basins
- [ ] Grids (Precip etc.)

Display Options

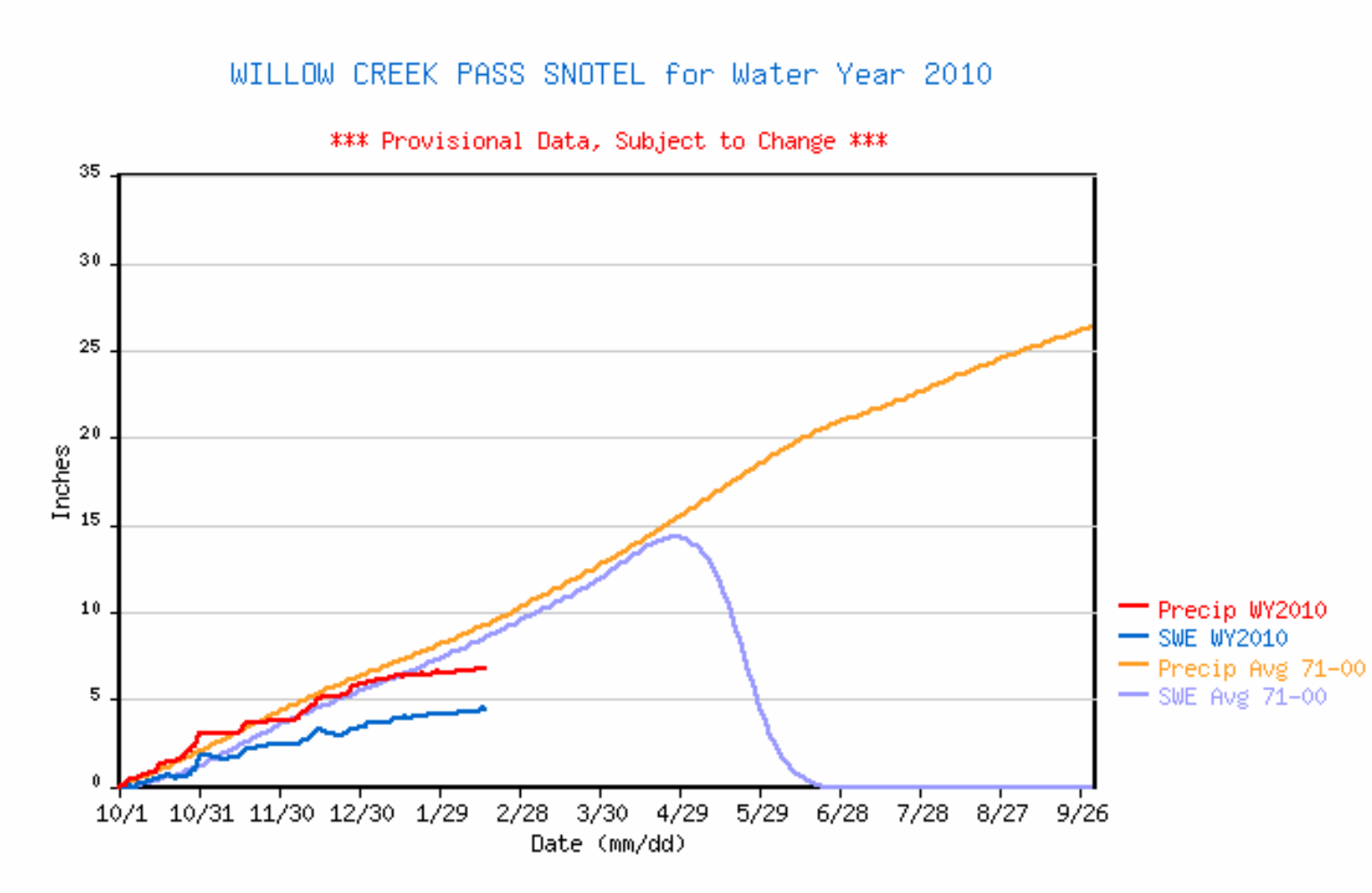
- [ ] Show NWS ID
- [ ] Show Data

Snow Point %Avg SWE

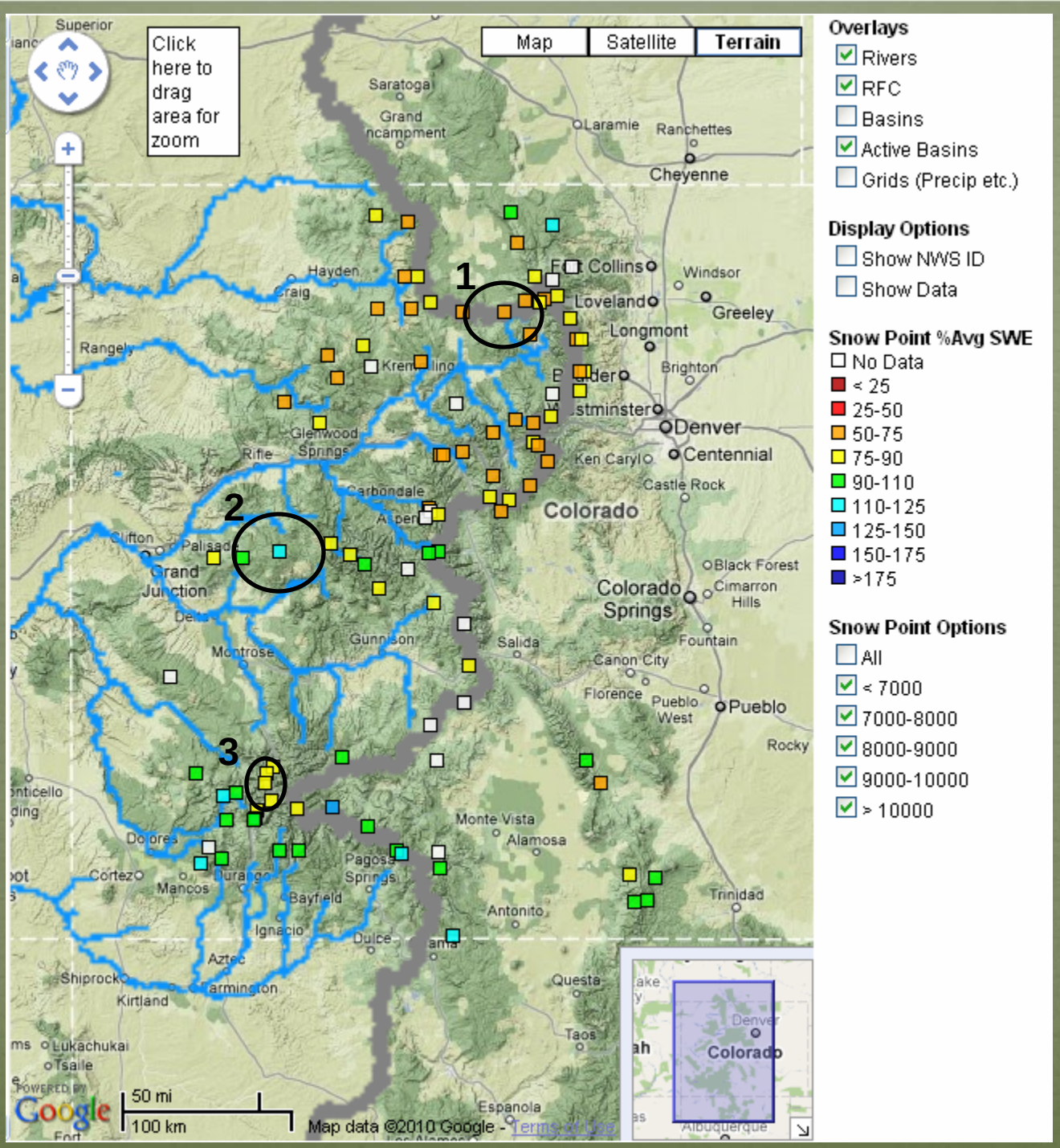
- [ ] No Data
- [ ] < 25
- [ ] 25-50
- [ ] 50-75
- [ ] 75-90
- [ ] 90-110
- [ ] 110-125
- [ ] 125-150
- [ ] 150-175
- [ ] >175

Snow Point Options

- [ ] All
- [x] < 7000
- [x] 7000-8000
- [x] 8000-9000
- [x] 9000-10000
- [x] > 10000


WILLOW CREEK PASS SNOTEL for Water Year 2010
*** Provisional Data, Subject to Change ***
Inches
35
30
25
20
15
10
5
0
10/1
10/31
11/30
12/30
1/29
2/28
3/30
4/29
5/29
6/28
7/28
8/27
9/26
Date (mm/dd)
Precip WY2010
SWE WY2010
Precip Avg 71-00
SWE Avg 71-00

Snowpack: 52%



Overlays

- [x] Rivers
- [x] RFC
- [ ] Basins
- [x] Active Basins
- [ ] Grids (Precip etc.)

Display Options

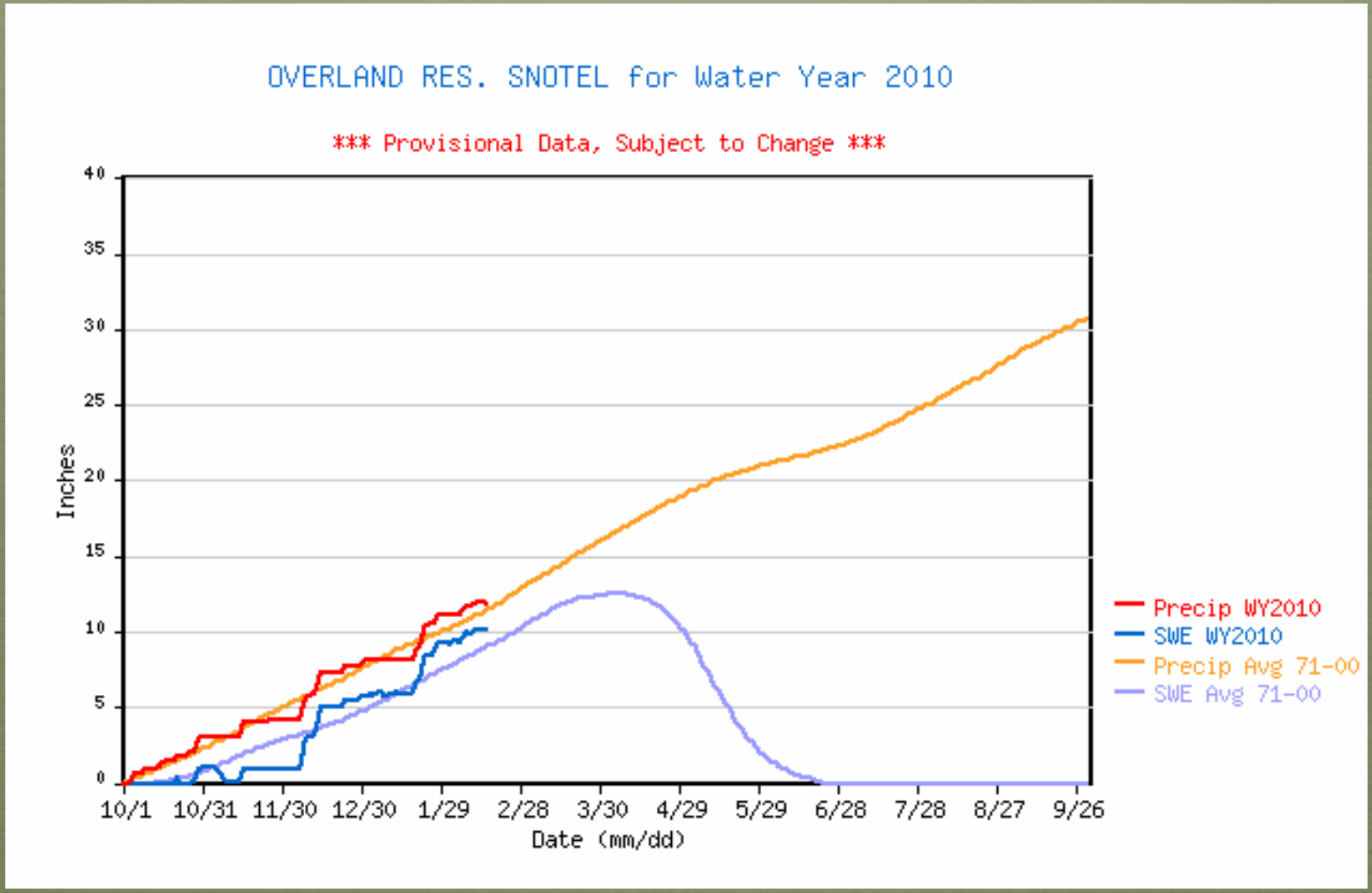
- [ ] Show NWS ID
- [ ] Show Data

Snow Point %Avg SWE

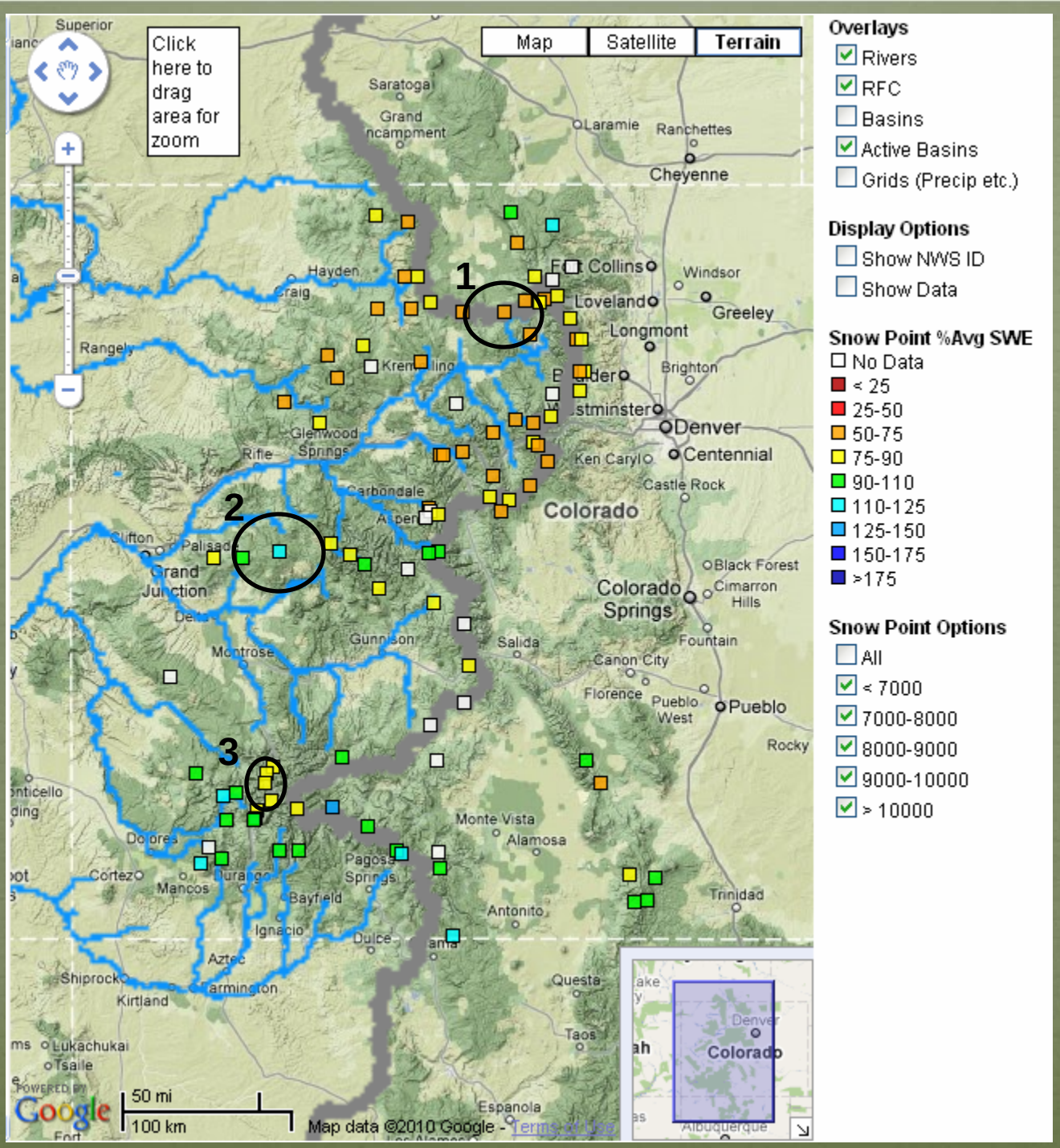
- [ ] No Data
- [ ] < 25
- [ ] 25-50
- [ ] 50-75
- [ ] 75-90
- [ ] 90-110
- [ ] 110-125
- [ ] 125-150
- [ ] 150-175
- [ ] >175

Snow Point Options

- [ ] All
- [x] < 7000
- [x] 7000-8000
- [x] 8000-9000
- [x] 9000-10000
- [x] > 10000



Snowpack: 113%



Overlays

- [x] Rivers
- [x] RFC
- [ ] Basins
- [x] Active Basins
- [ ] Grids (Precip etc.)

Display Options

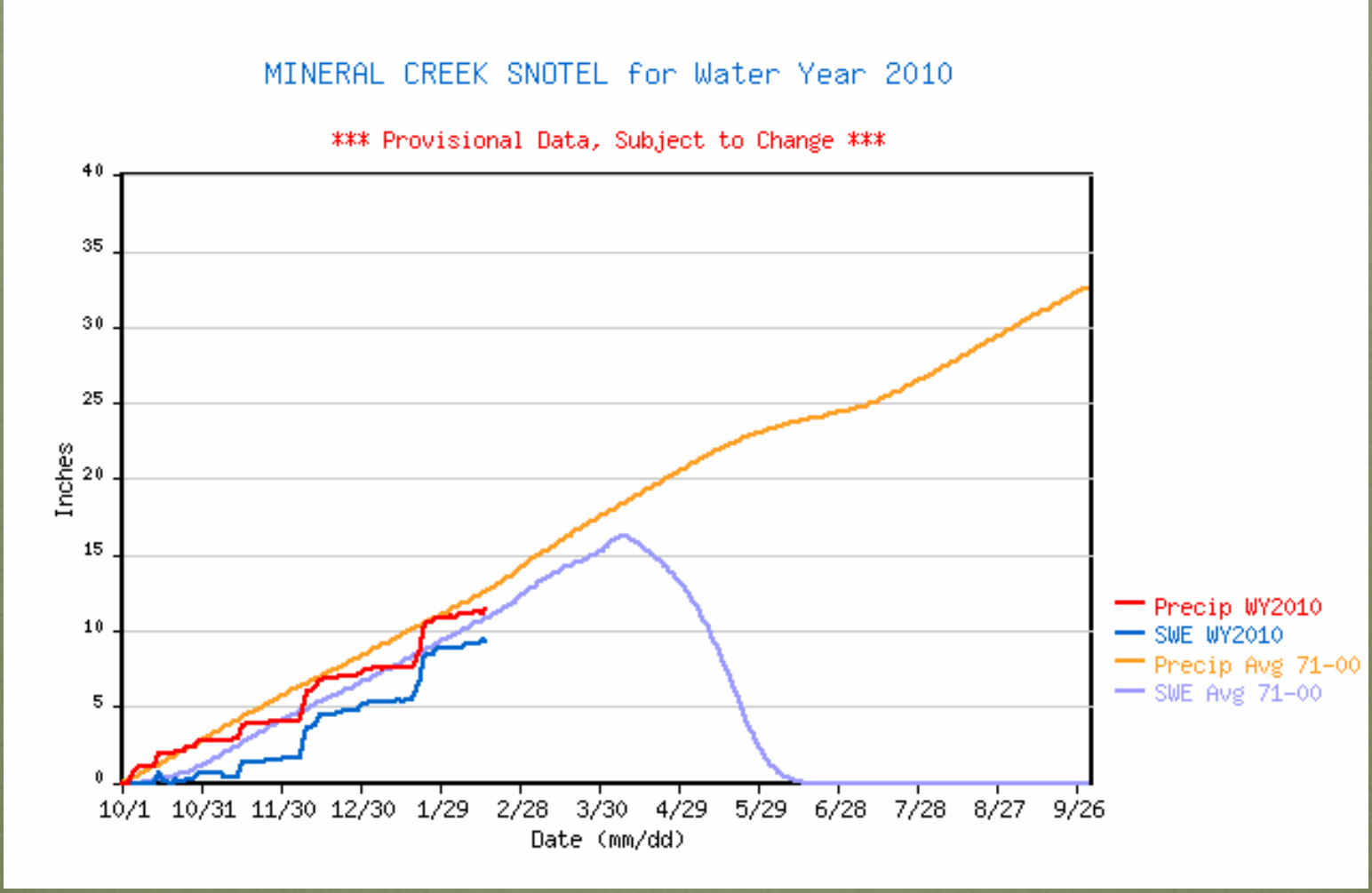
- [ ] Show NWS ID
- [ ] Show Data

Snow Point %Avg SWE

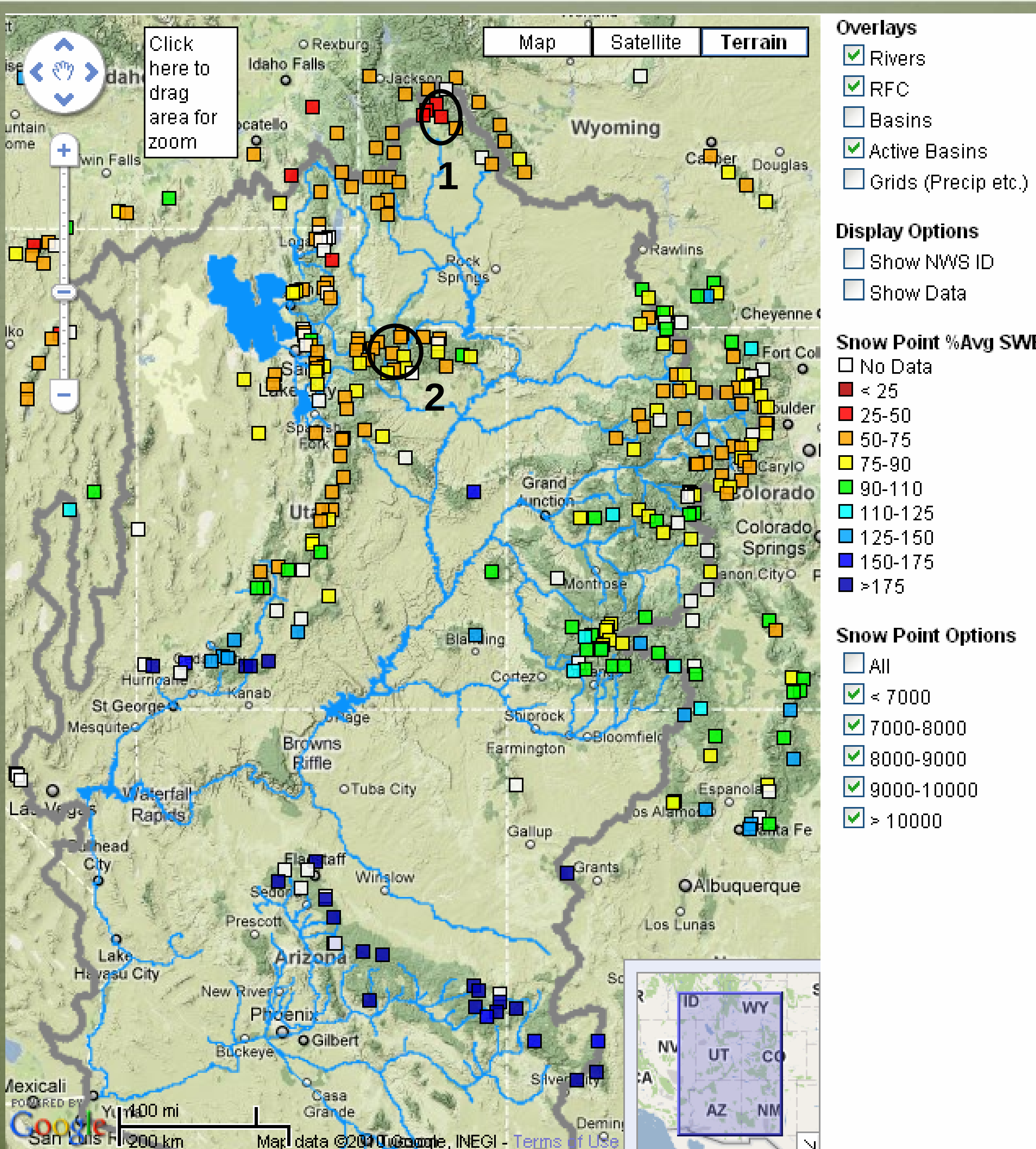
- [ ] No Data
- [ ] < 25
- [ ] 25-50
- [ ] 50-75
- [ ] 75-90
- [ ] 90-110
- [ ] 110-125
- [ ] 125-150
- [ ] 150-175
- [ ] >175

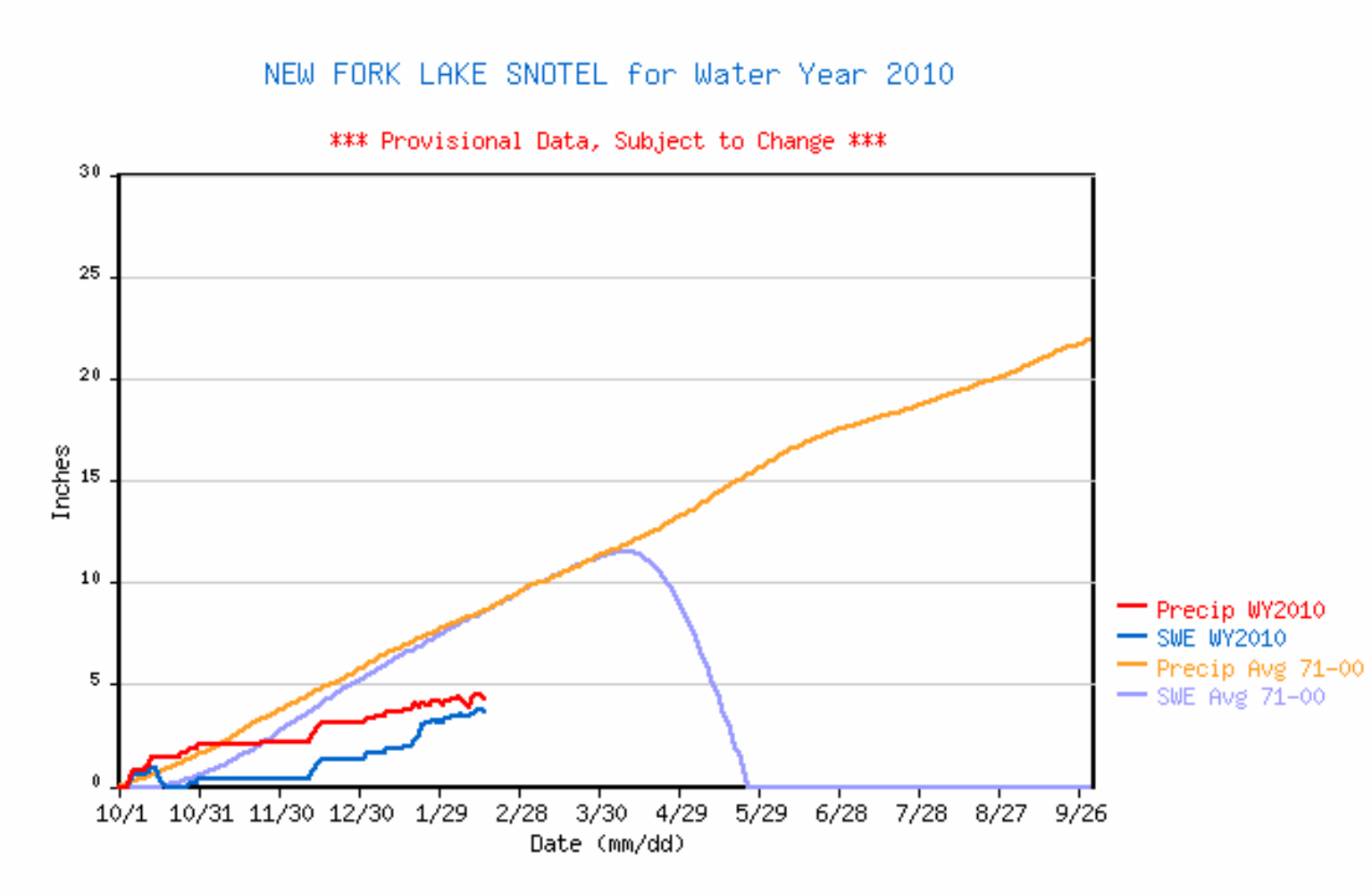
Snow Point Options

- [ ] All
- [x] < 7000
- [x] 7000-8000
- [x] 8000-9000
- [x] 9000-10000
- [x] > 10000

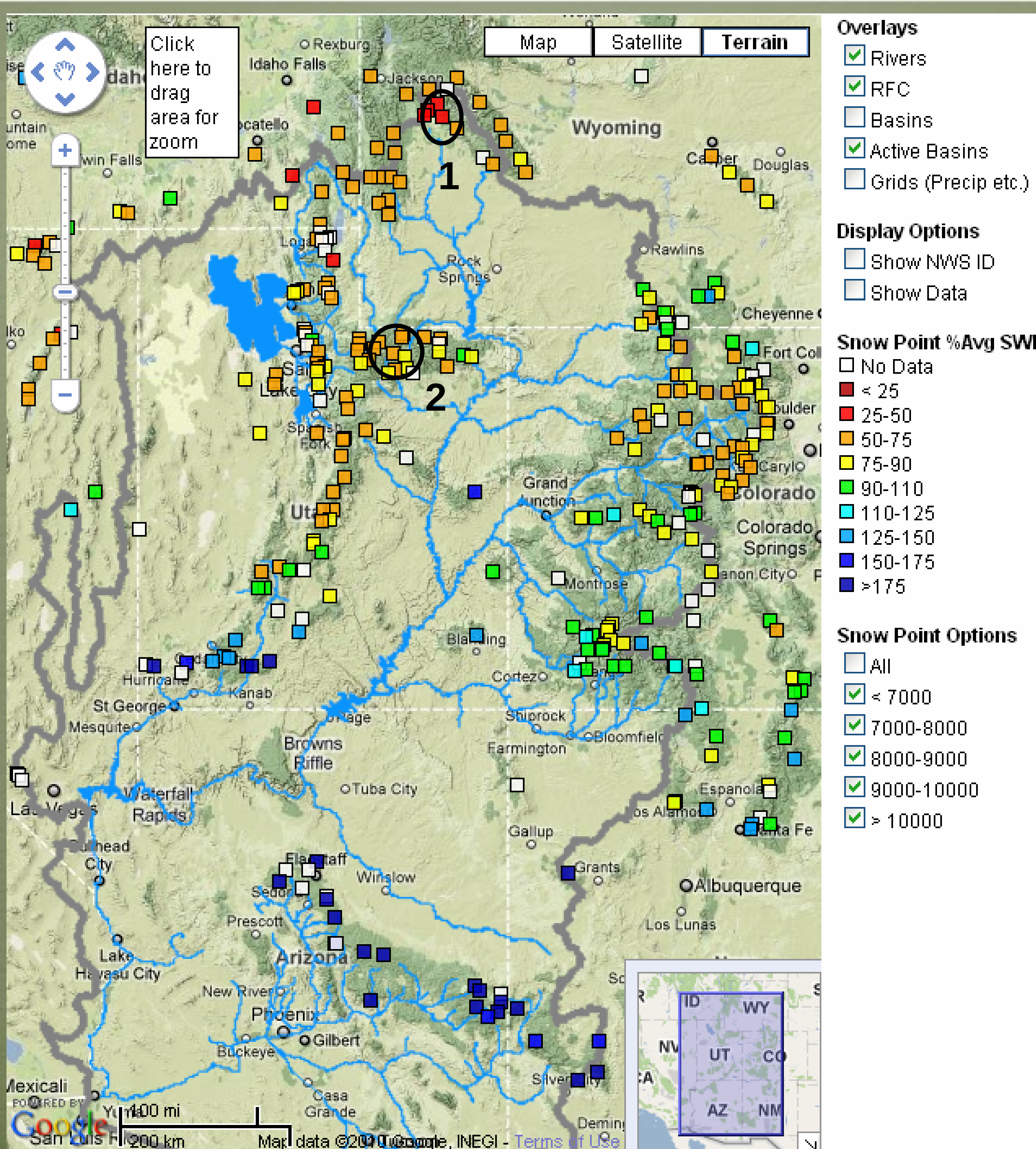

MINERAL CREEK SNOTEL for Water Year 2010
*** Provisional Data, Subject to Change ***
Inches
0
5
10
15
20
25
30
35
40
10/1
10/31
11/30
12/30
1/29
2/28
3/30
4/29
5/29
6/28
7/28
8/27
9/26
Date (mm/dd)
Precip WY2010
SWE WY2010
Precip Avg 71-00
SWE Avg 71-00

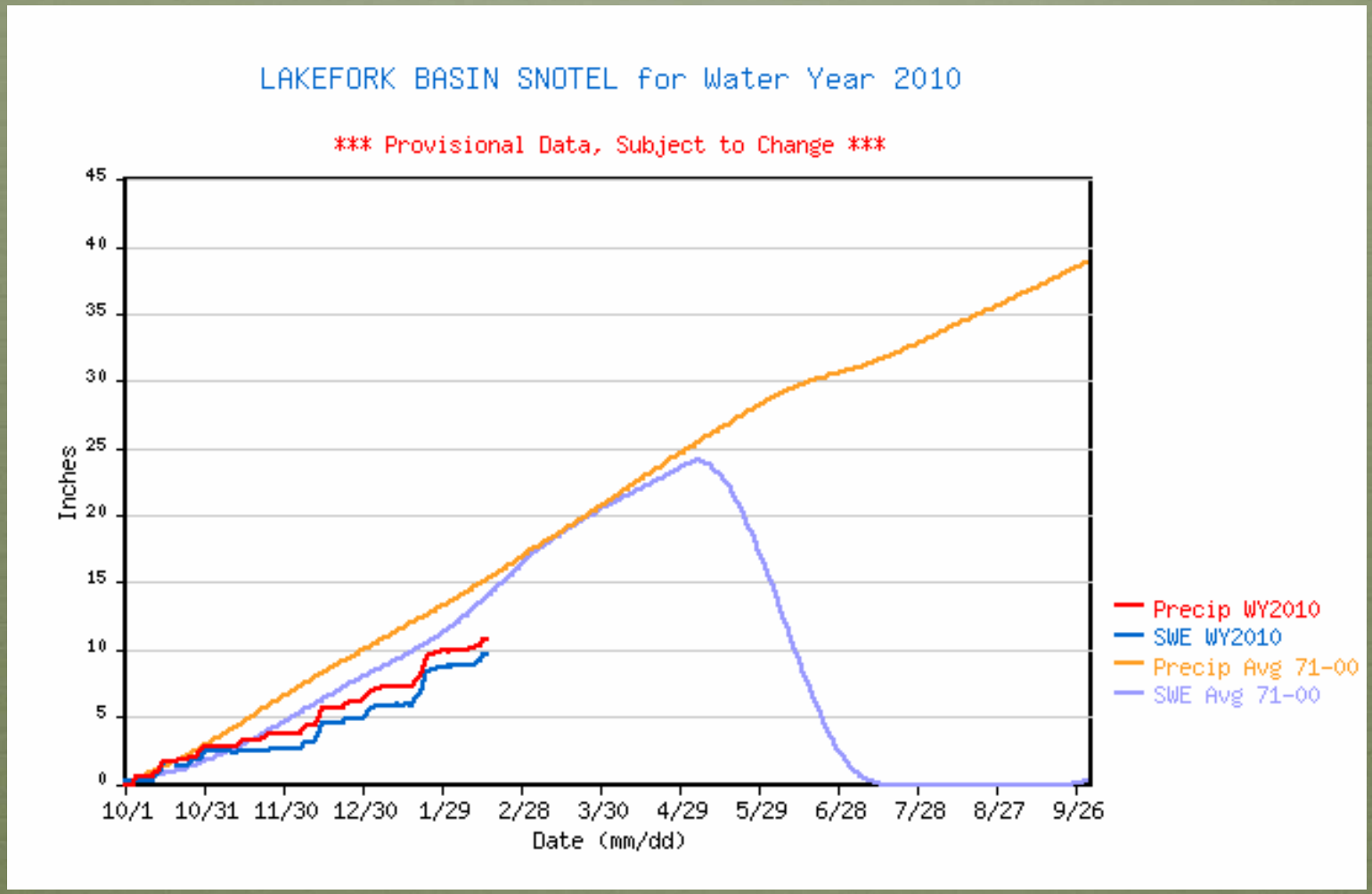
Snowpack: 86%


Map
Satellite
Terrain
Click here to drag area for zoom
1
2
Wyoming
Utah
Colorado
Arizona
Idaho Falls
Rexburg
Jackson
Pocatello
Twin Falls
Casper
Douglas
Rawlins
Rock Springs
Cheyenne
Fort Collins
Boulder
Grand Junction
Colorado Springs
Montrose
Cortez
Shiprock
Bloomfield
Farmington
Kanab
St George
Hurricane
Mesquite
Browns Riffle
Tuba City
Gallup
Grants
Albuquerque
Los Lunas
Flagstaff
Winslow
Sedona
Prescott
Lake Havasu City
New River
Phoenix
Gilbert
Buckeye
Casa Grande
Mexicali
Yuma
Espanola
Los Alamos
Santa Fe
Silver City
Deming
100 mi
200 km
Map data ©2010 Google, INEGI - Terms of Use
ID
WY
NV
UT
CO
AZ
NM
Overlays
Rivers
RFC
Basins
Active Basins
Grids (Precip etc.)
Display Options
Show NWS ID
Show Data
Snow Point %Avg SWE
No Data
< 25
25-50
50-75
75-90
90-110
110-125
125-150
150-175
>175
Snow Point Options
All
< 7000
7000-8000
8000-9000
9000-10000
> 10000


NEW FORK LAKE SNOTEL for Water Year 2010
*** Provisional Data, Subject to Change ***
Inches
30
25
20
15
10
5
0
10/1
10/31
11/30
12/30
1/29
2/28
3/30
4/29
5/29
6/28
7/28
8/27
9/26
Date (mm/dd)
Precip WY2010
SWE WY2010
Precip Avg 71-00
SWE Avg 71-00

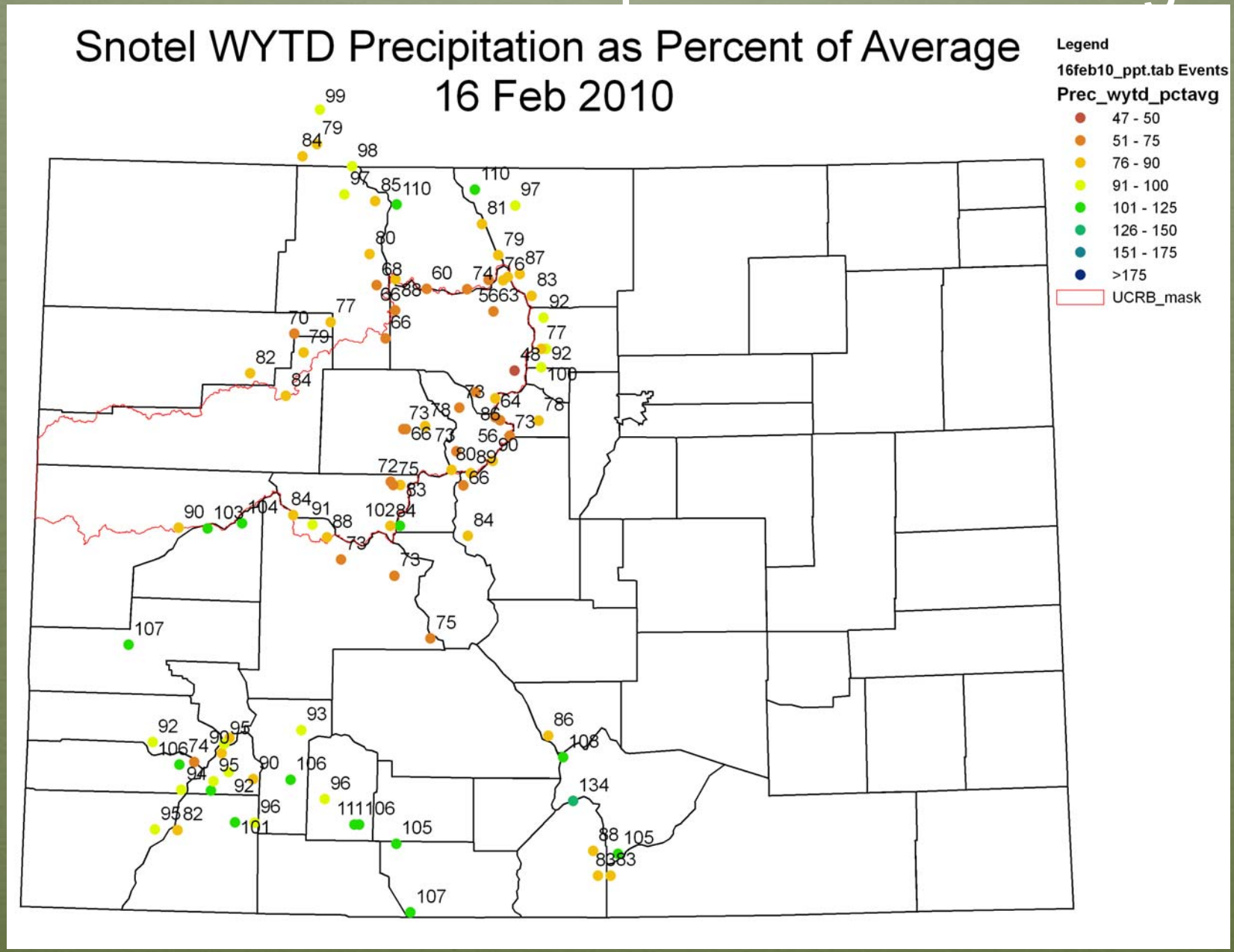
Snowpack: 44%


Map
Satellite
Terrain
Click here to drag area for zoom
1
2
Wyoming
Colorado
Arizona
Overlays
Rivers
RFC
Basins
Active Basins
Grids (Precip etc.)
Display Options
Show NWS ID
Show Data
Snow Point %Avg SWE
No Data
< 25
25-50
50-75
75-90
90-110
110-125
125-150
150-175
>175
Snow Point Options
All
< 7000
7000-8000
8000-9000
9000-10000
> 10000
100 mi
200 km
Terms of Use

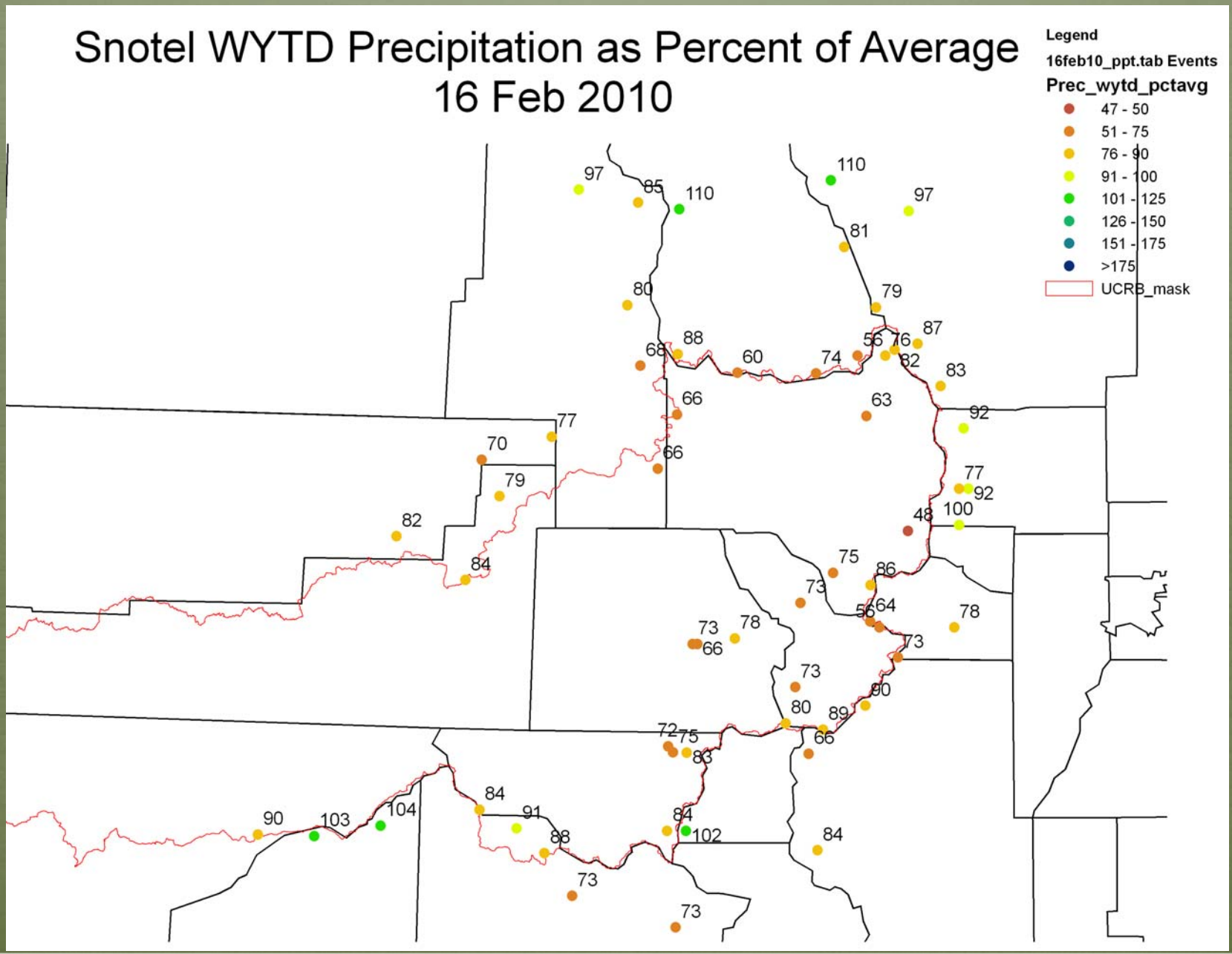

LAKEFORK BASIN SNOTEL for Water Year 2010
*** Provisional Data, Subject to Change ***
Inches
45
40
35
30
25
20
15
10
5
0
10/1
10/31
11/30
12/30
1/29
2/28
3/30
4/29
5/29
6/28
7/28
8/27
9/26
Date (mm/dd)
Precip WY2010
SWE WY2010
Precip Avg 71-00
SWE Avg 71-00

Snowpack: 69%

Snotel WYTD Precipitation % Average

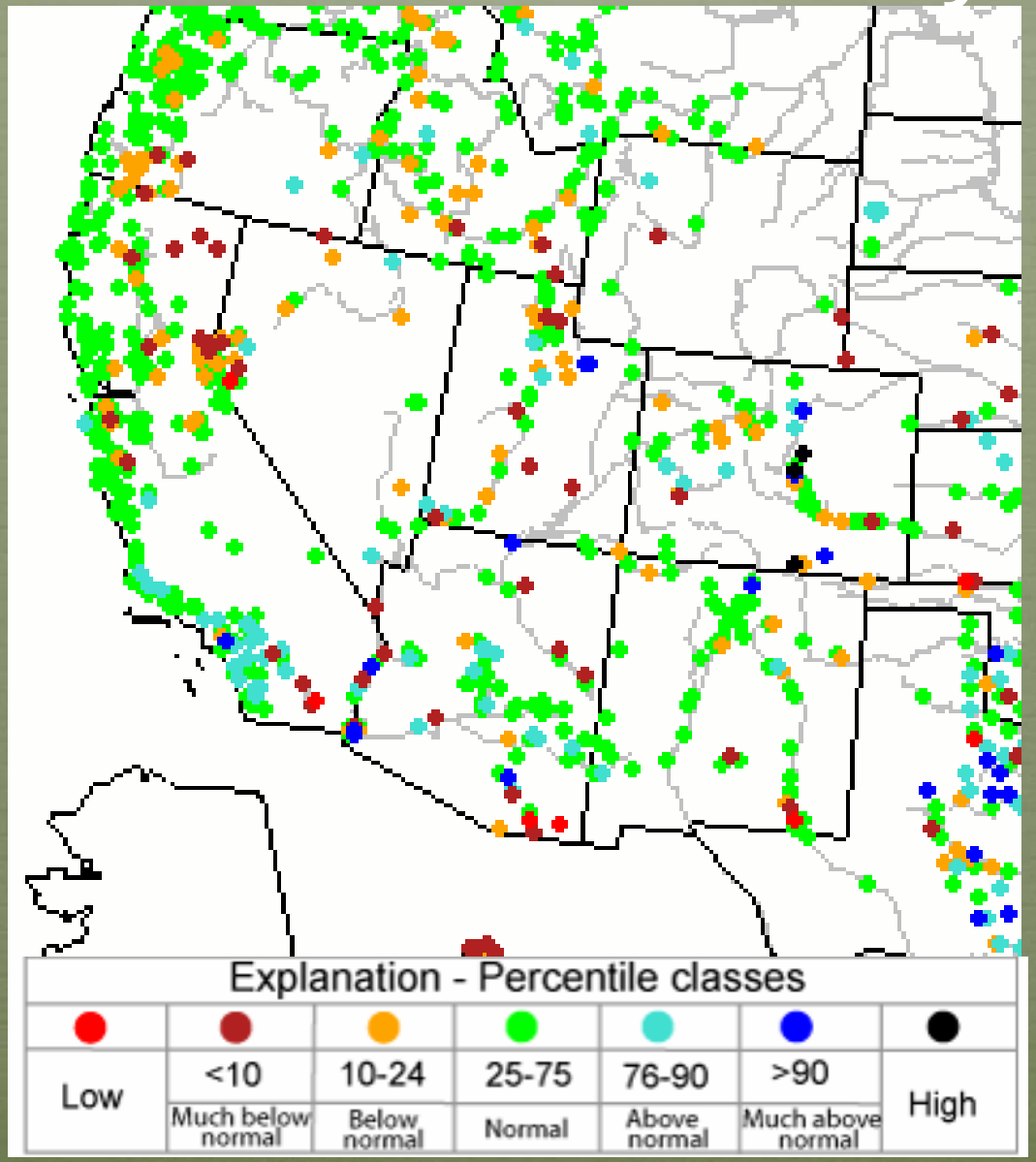


Snotel WYTD Precipitation % Average



Streamflow Update

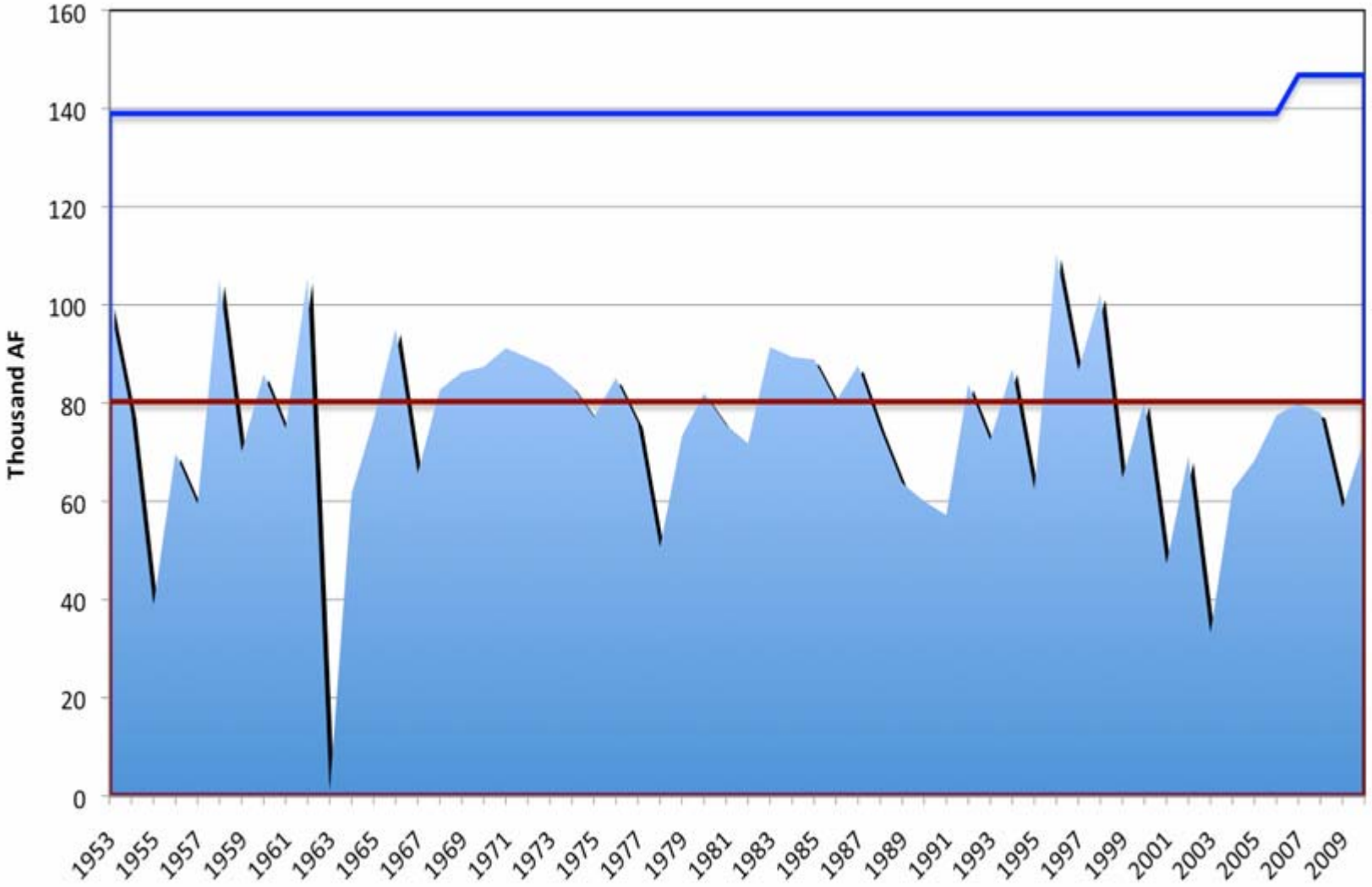
Streamflow 16 February 2010



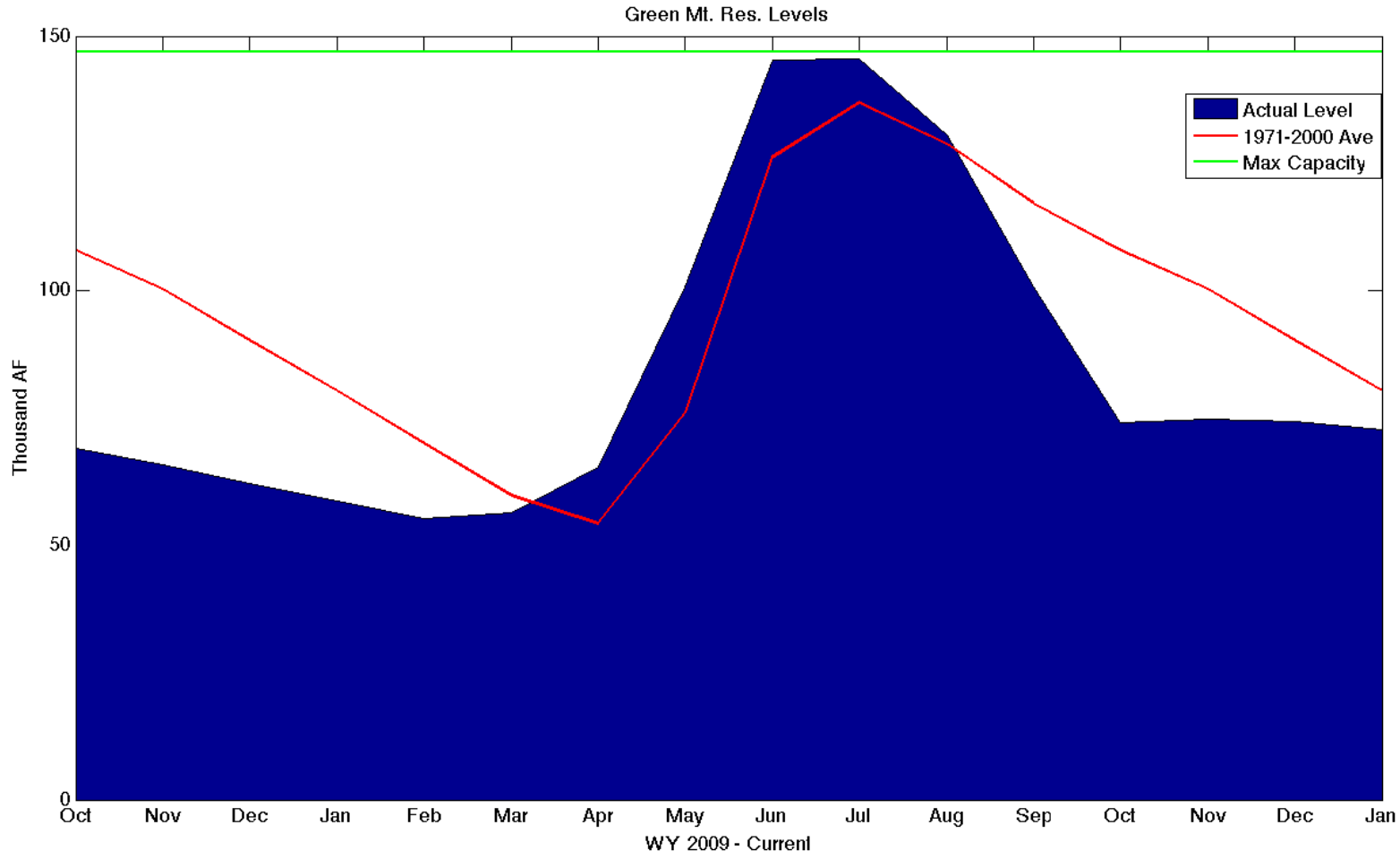
USGS
science for a changing world

Reservoir Update

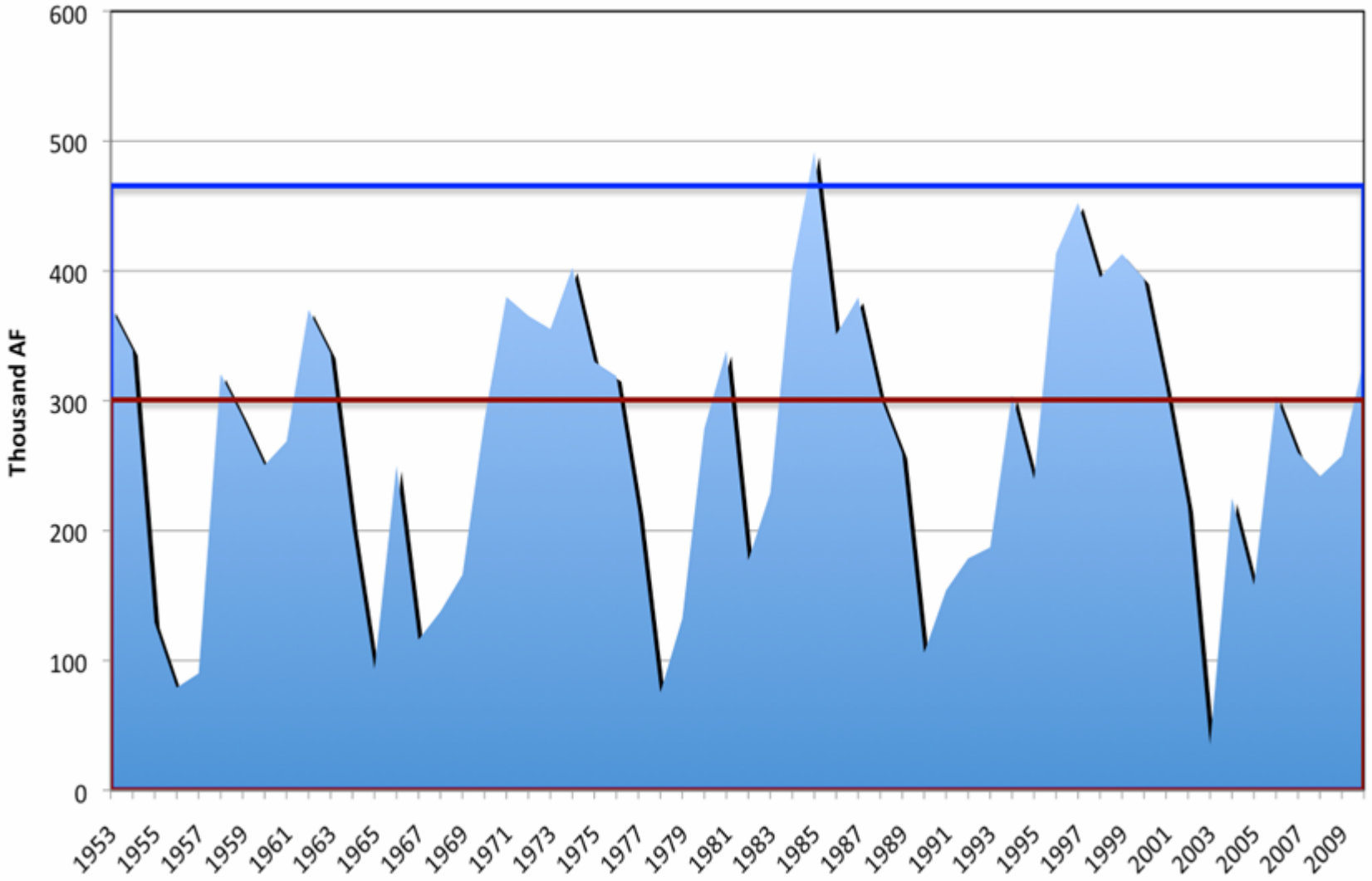
Green Mountain January Reservoir Storage



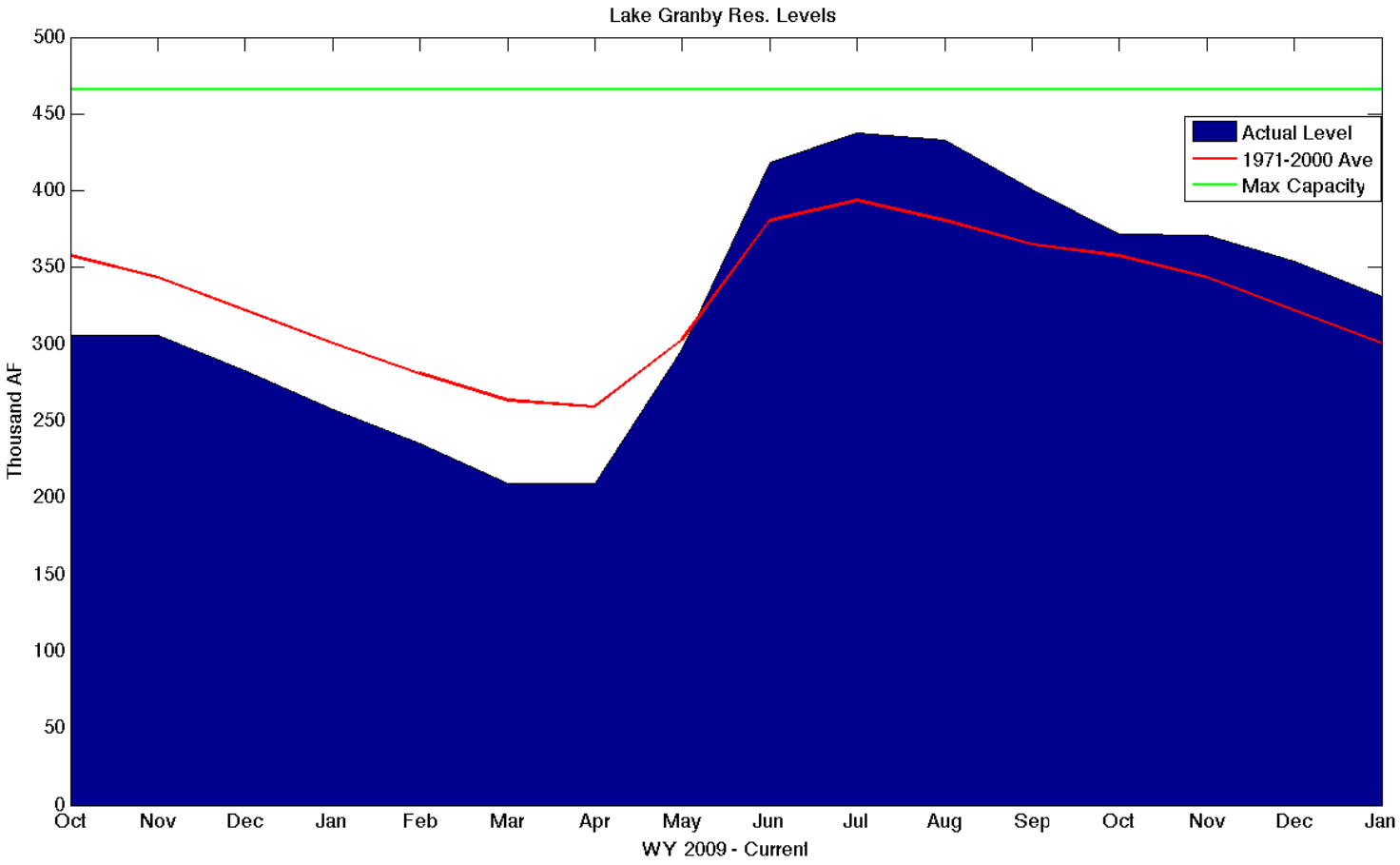
Green Mountain



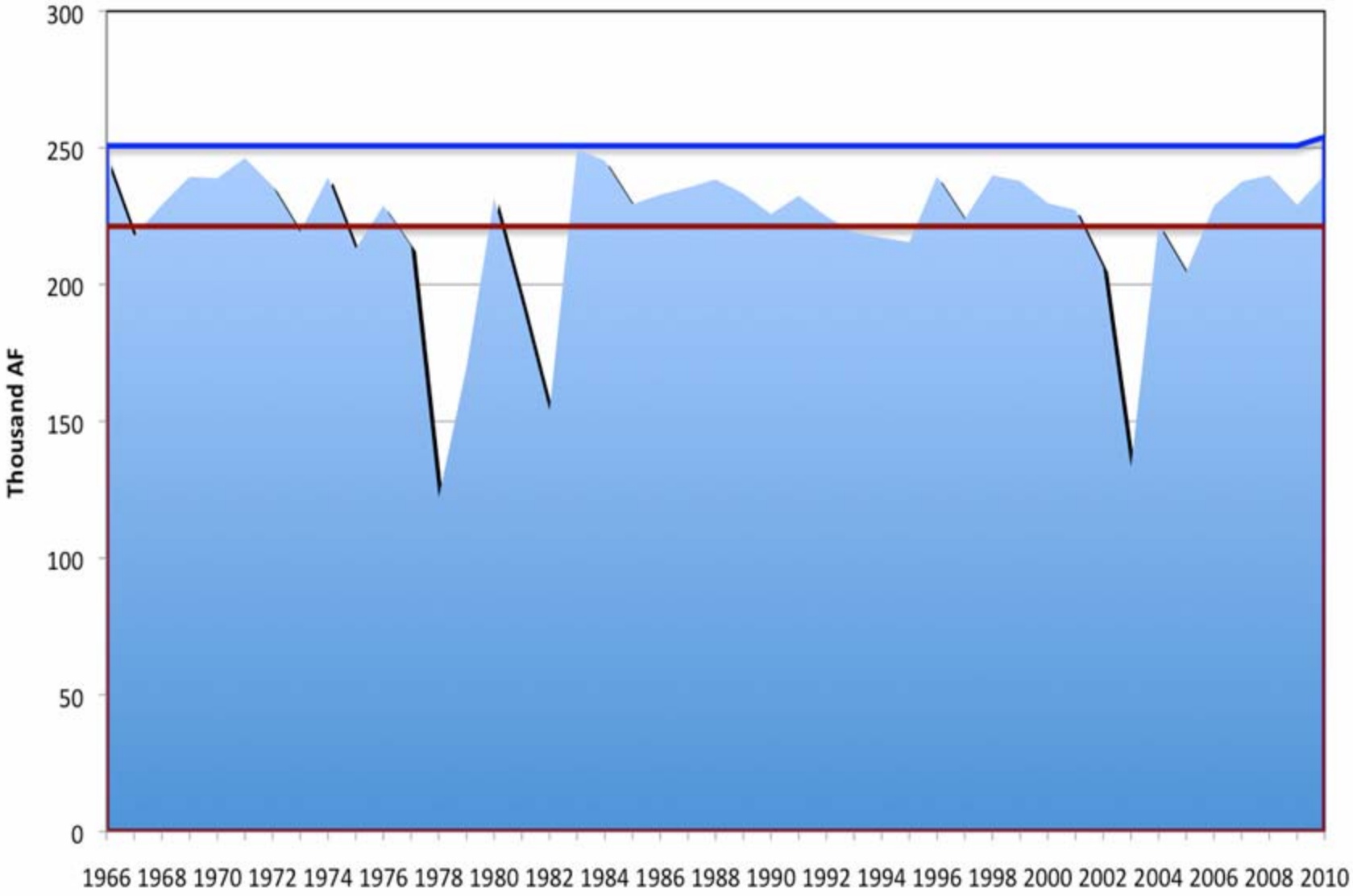
Lake Granby January Reservoir Storage



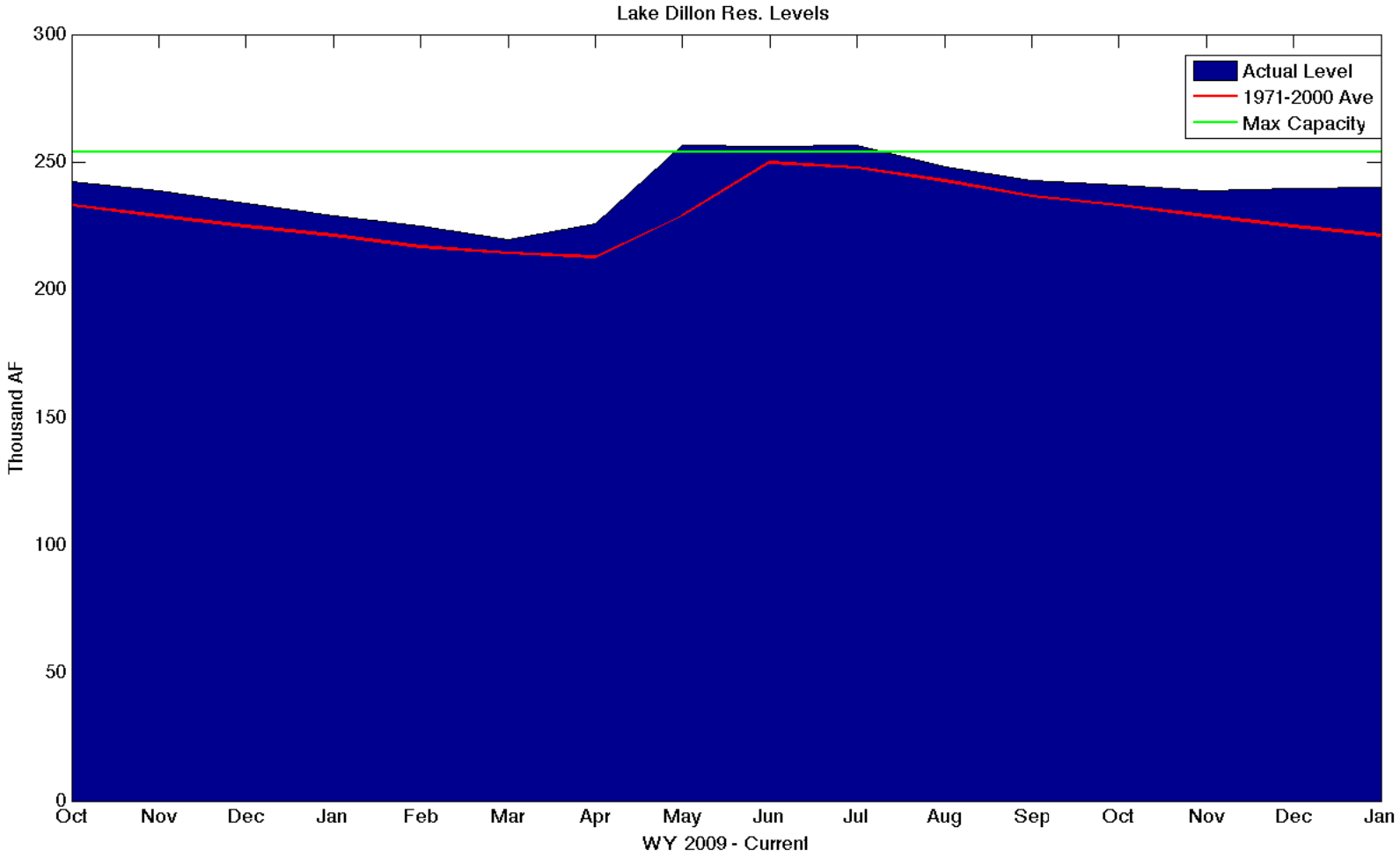
Lake Granby


Lake Granby Res. Levels
Thousand AF
500
450
400
350
300
250
200
150
100
50
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
WY 2009 - Current
Actual Level
1971-2000 Ave
Max Capacity

Lake Dillon January Reservoir Storage

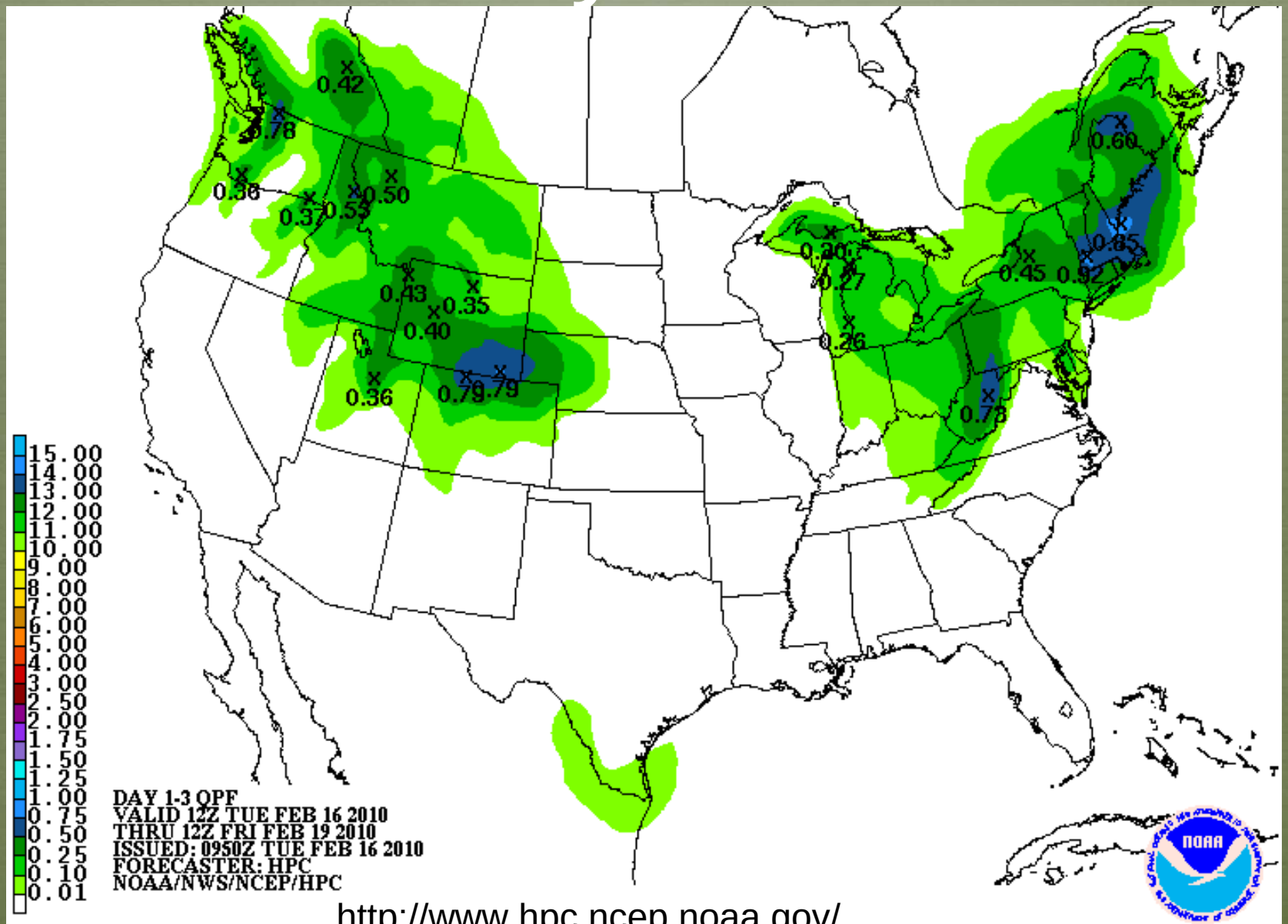


Lake Dillon


Lake Dillon Res. Levels
Actual Level
1971-2000 Ave
Max Capacity
Thousand AF
300
250
200
150
100
50
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
WY 2009 - Current

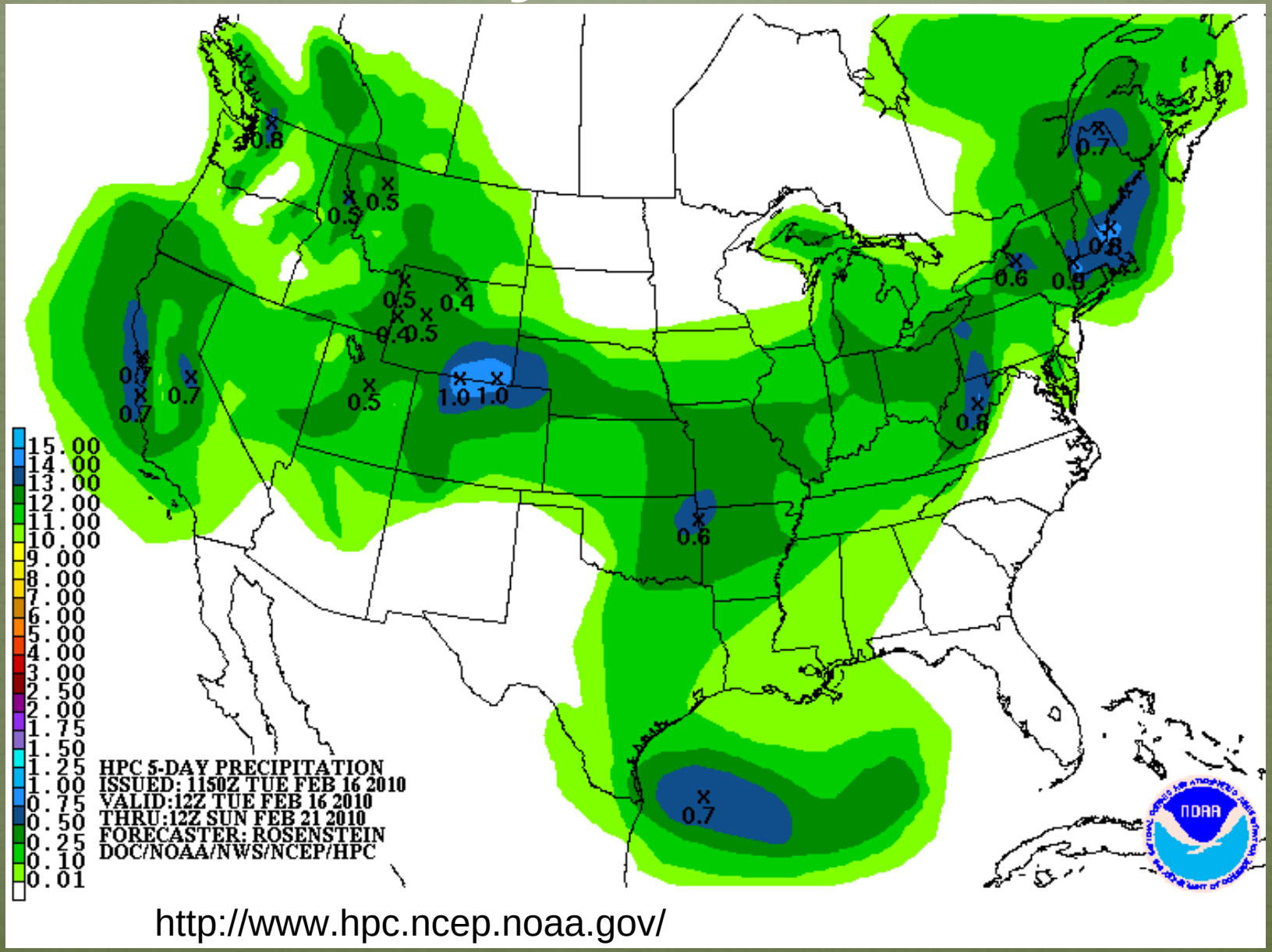
Precipitation Forecast

1-3 Day Outlook



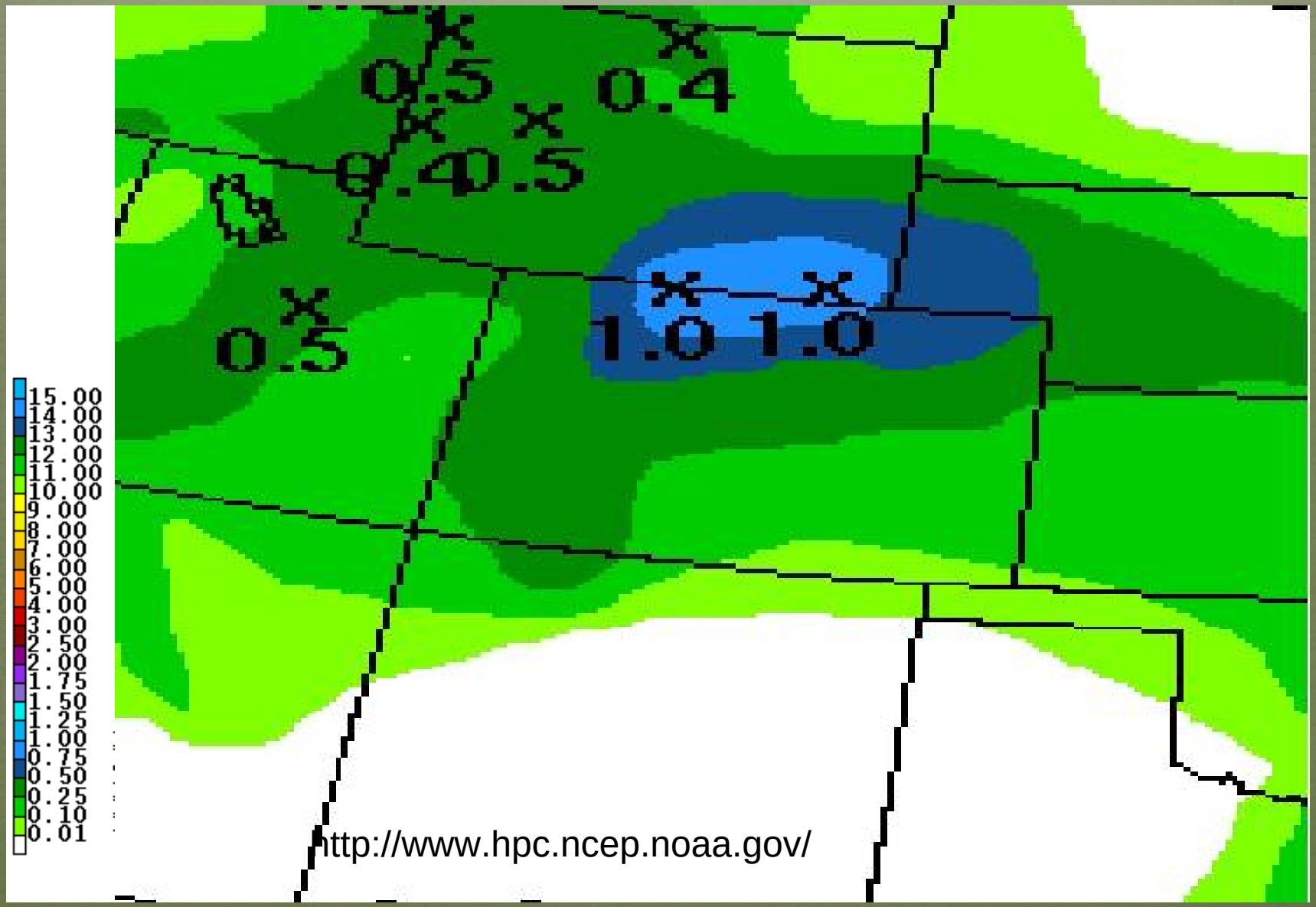
http://www.hpc.ncep.noaa.gov/

5 Day Outlook

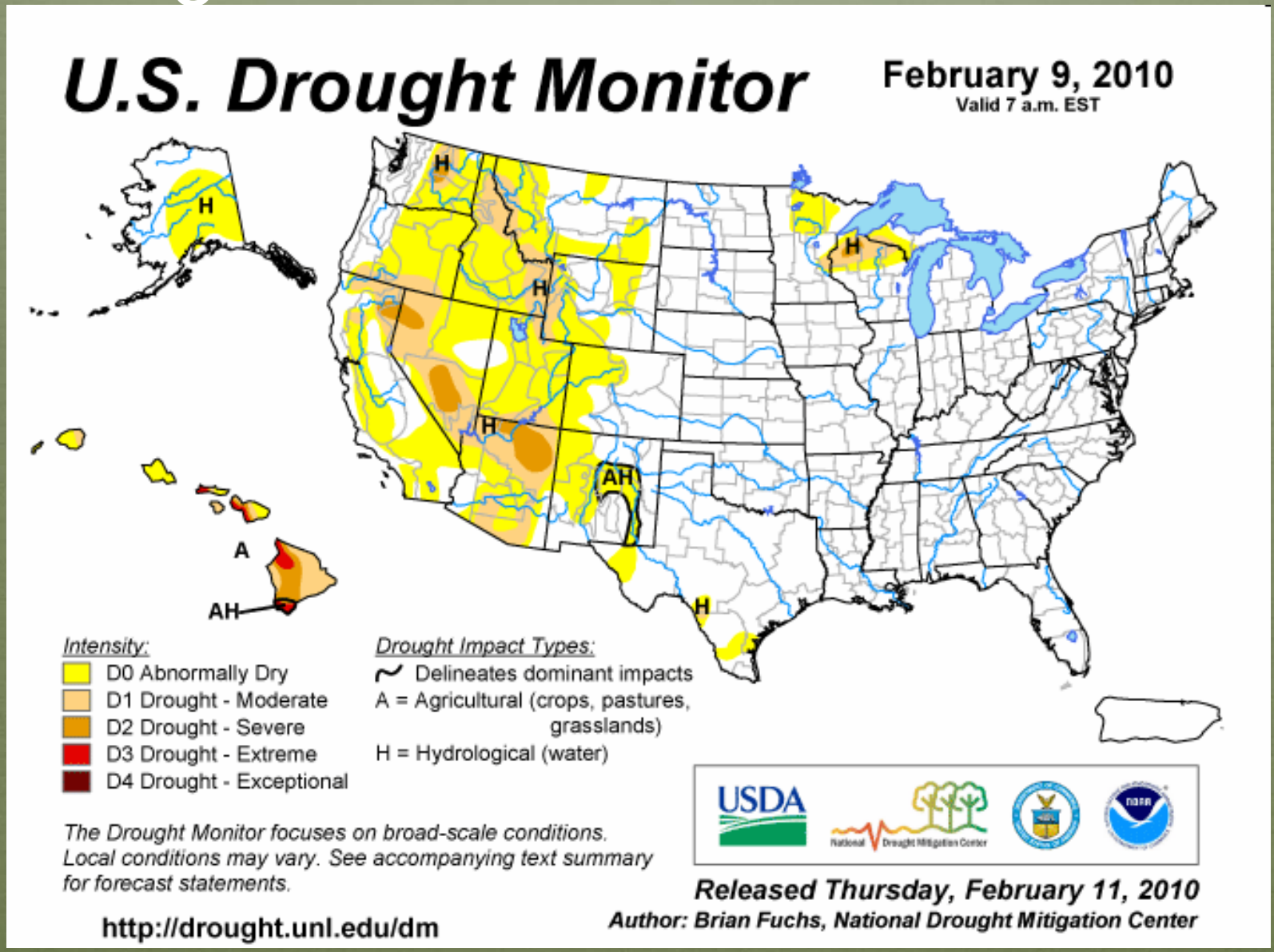


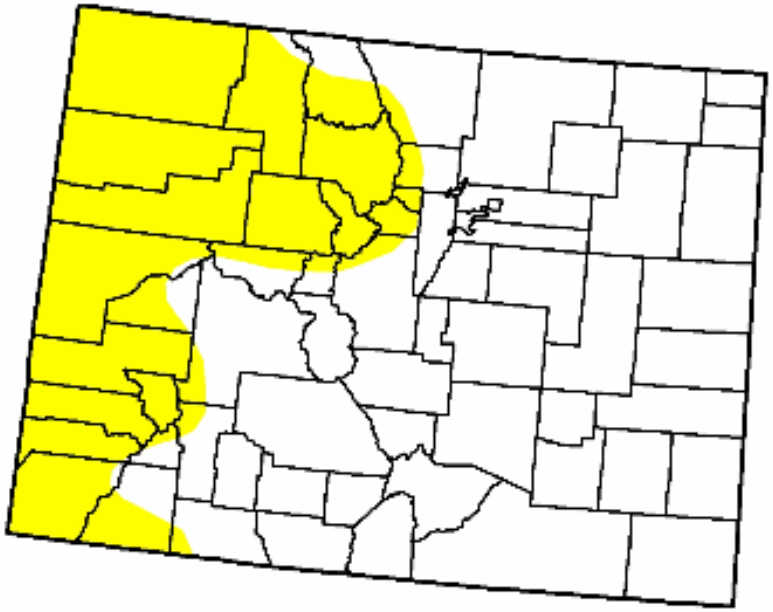
http://www.hpc.ncep.noaa.gov/

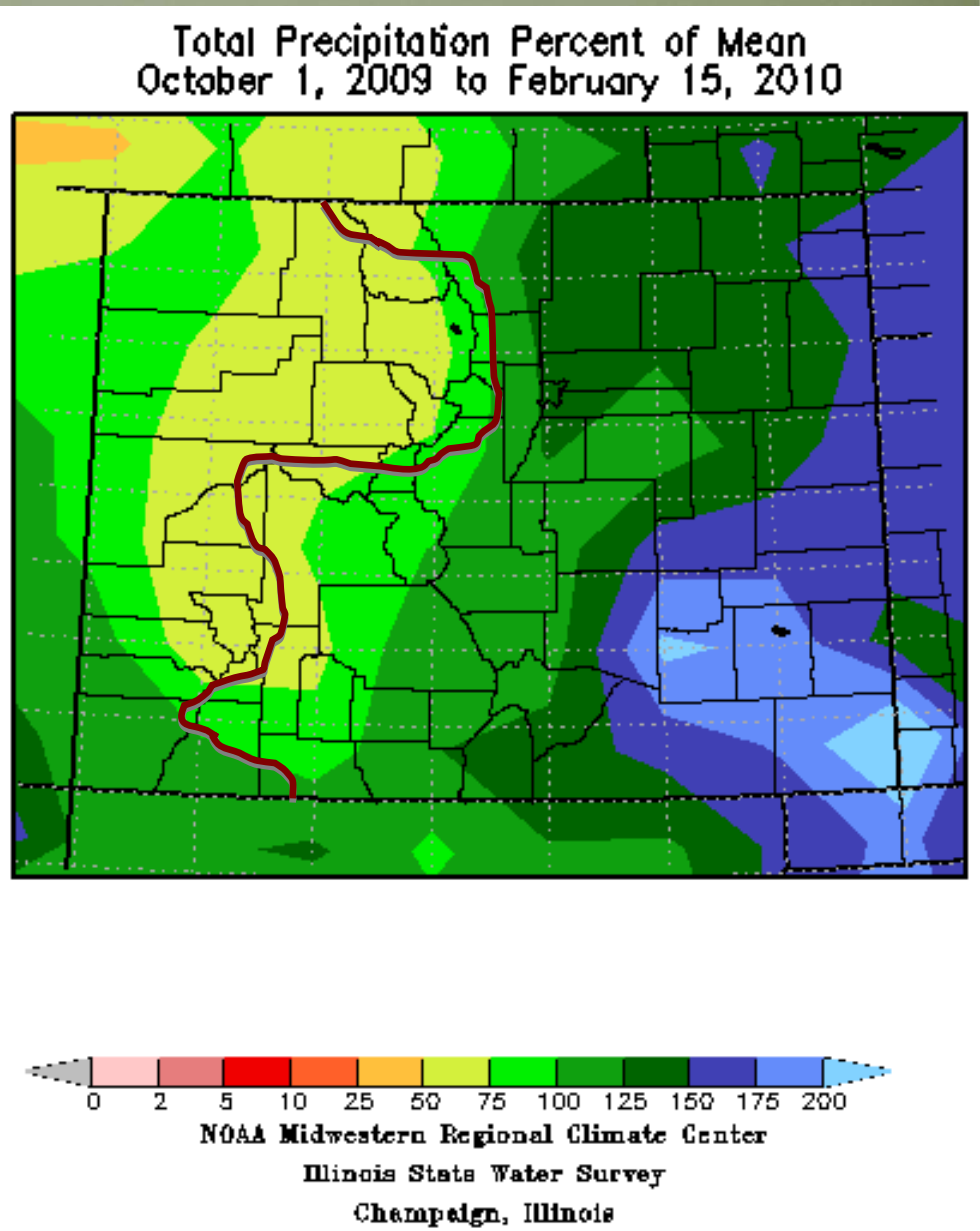
5 Day Outlook Colorado

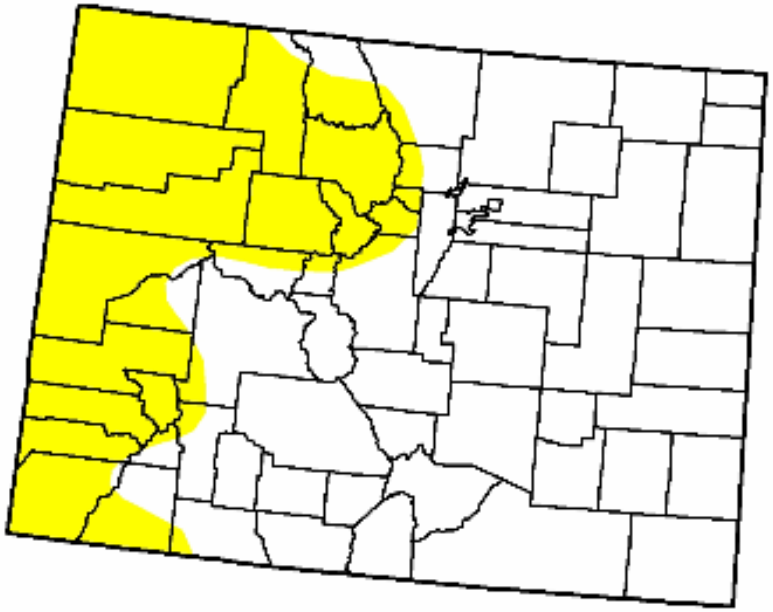


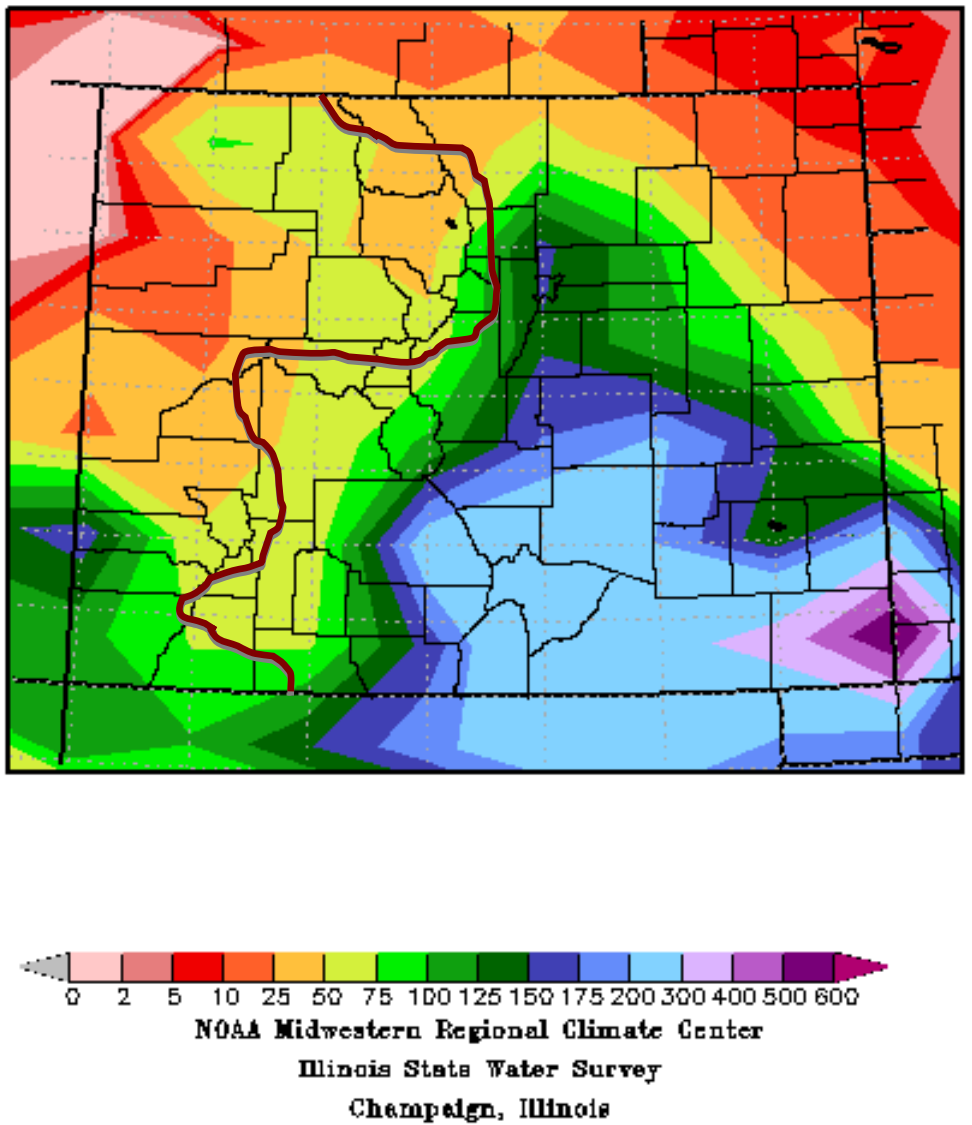
Drought Monitor Recommendations






Total Precipitation Percent of Mean
October 1, 2009 to February 15, 2010
0 2 5 10 25 50 75 100 125 150 175 200
NOAA Midwestern Regional Climate Center
Illinois State Water Survey
Champaign, Illinois




Total Precipitation Percent of Mean
February 8, 2010 to February 15, 2010
0 2 5 10 25 50 75 100 125 150 175 200 300 400 500 600
NOAA Midwestern Regional Climate Center
Illinois State Water Survey
Champaign, Illinois

INFO

For more information

Summary

- The first USDM-contributor "Confernce call/Webinar" of the NIDIS Upper Colorado River Basin Pilot Project was held on Tuesday, Feb 16 at 10 AM. Based on the attendance list, there were representatives from the NIDIS program office, CU-Western Water Assessment, USGS , 3 NWS offiices, the NWS Western Region HQ and the Wyoming State Climatologist on the call along with staff of the Colorado Climate Center. However, only 3 or 4 of the attendees spoke and replied to questions, so there is some question if communications were working properly. (If you tried to attend the webinar and had technical difficulties, please let us know).

  In summary, there was some beneficial precipitation in the Upper Basin this past week, but SNOTEL snow accumulations continue on a below average pace. Seasonal accumulations continue to track from a little below to much below average with the driest areas being in western Wyoming and in the immediate headwaters of the Colorado River in Grand County, Colorado. Low elevations in Grand and Summit Counties are particularly dry -- near 50% of average or less in some areaas. Reservoir levels remain good for this time of year in the basin, and streamflows continue near normal -- to the extent that February baseflows are significant.
  Forecasts for the next 2-7 days call for a potential for significant precipitation in north central Colorado (both sides of the Continental Divide) and in adjacent areas of southern Wyoming. The very dry portions of western Wyoming may also get beneficial moisture but current forecasts (models not yet in full agreement) are for lighter to moderate amounts.

  Conclusions

  We recommend no changes to the USDM in Colorado this week. There is justification in Grand County, Colorado to now introduce D1, but due to the relatively small area that qualifies, the fact that this area is just now headed into it's climatological wettest months of the year, and the fact that significant precipitation could affect the target area this next week, it was the consensus of the group to recommend no changes yet. Wyoming may separately recommend subtle changes to the position of the D1 line in wetsern Wyoming.

  Thanks to all who participated. Please provide suggestions for improved graphics, etc.

  Nolan