NRCS – Snow Survey & Water Supply Forecasting

Water Availability Task Force Meeting February 14th, 2013

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http://www.co.nrcs.usda.gov/snow/

Use caution when comparing percentage data from year to year

Historical Documents will remain as originally published.

NWCC is developing datasets for each basin that will provide the basin median for each year so that you can compare median values for previous years.

As we continue to develop the new basin information we will also provide site contributions to the median.

For more information:

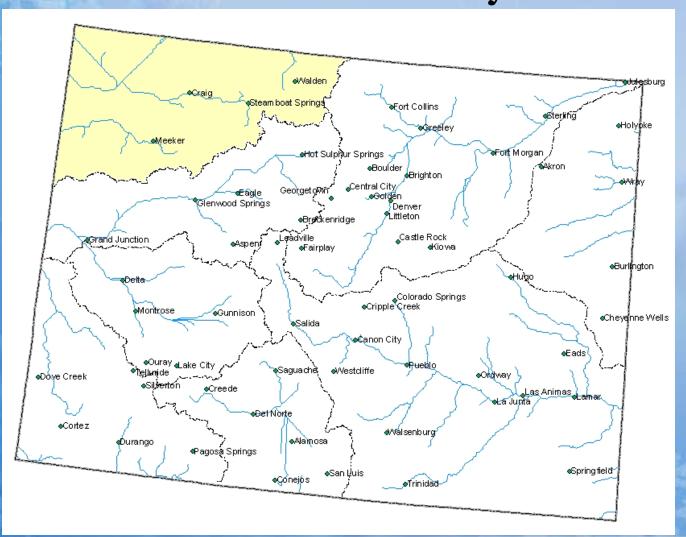
http://www.wcc.nrcs.usda.gov/normals/30year_normals_data.htm And on why the change to median:

http://www.wcc.nrcs.usda.gov/normals/median_average.htm

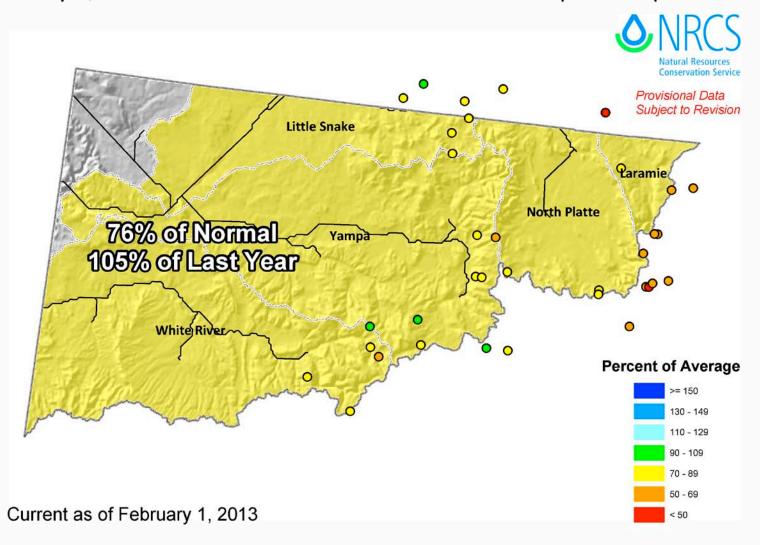
In the above link the descriptions are accurate but leave out one significant factor,

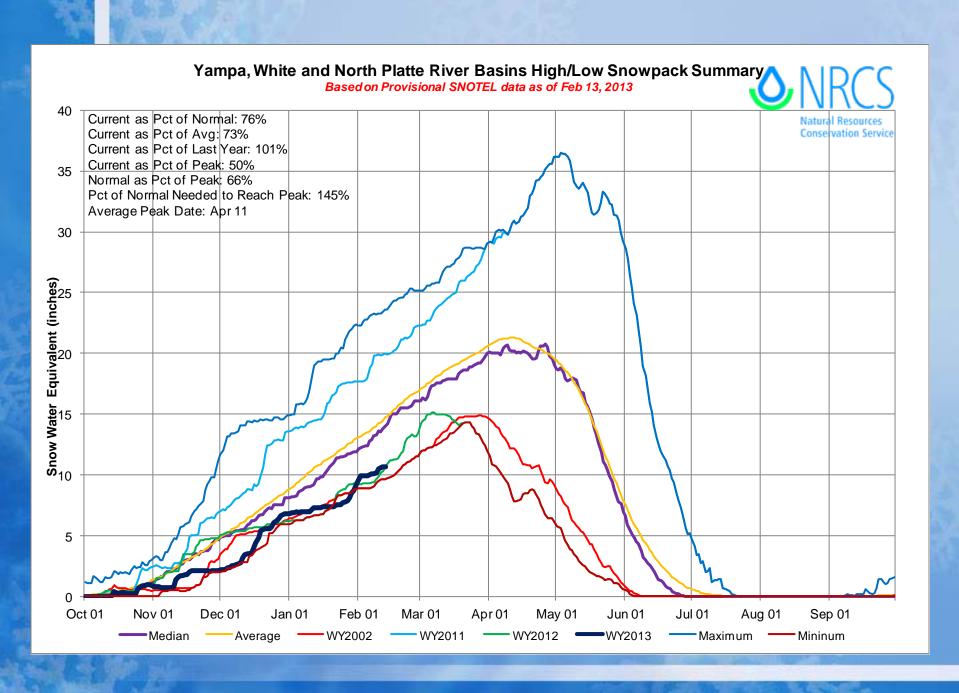
WE NOW HAVE ENOUGH RECORD TO CALCULATE MEDIAN.

Yampa, White & North Platte River Basins Summary

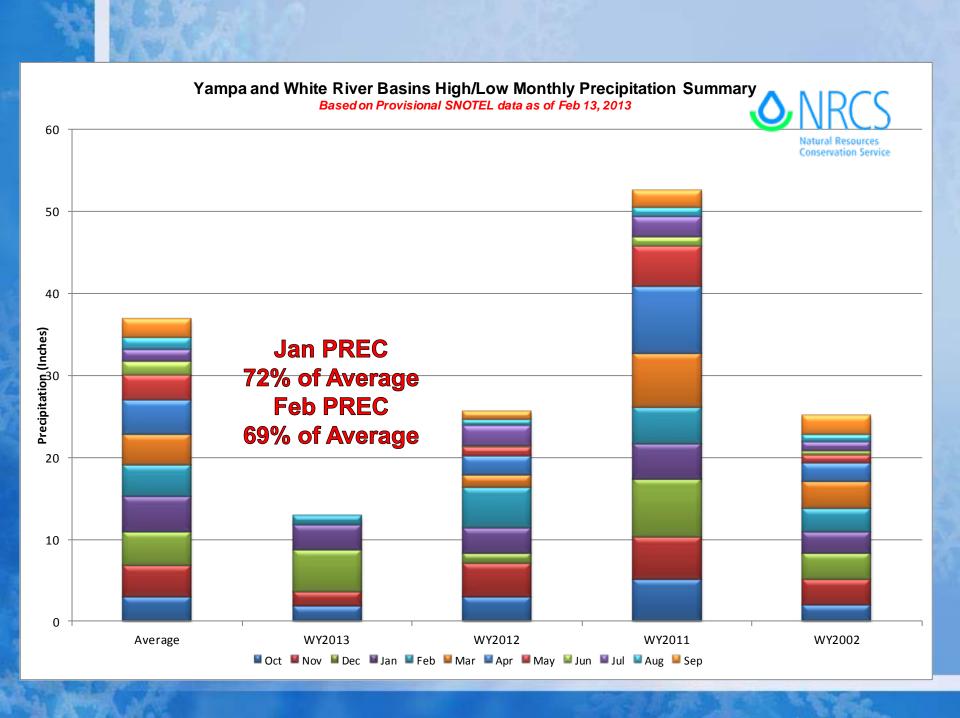


Yampa, White and North Platte River Basins Snowpack Map



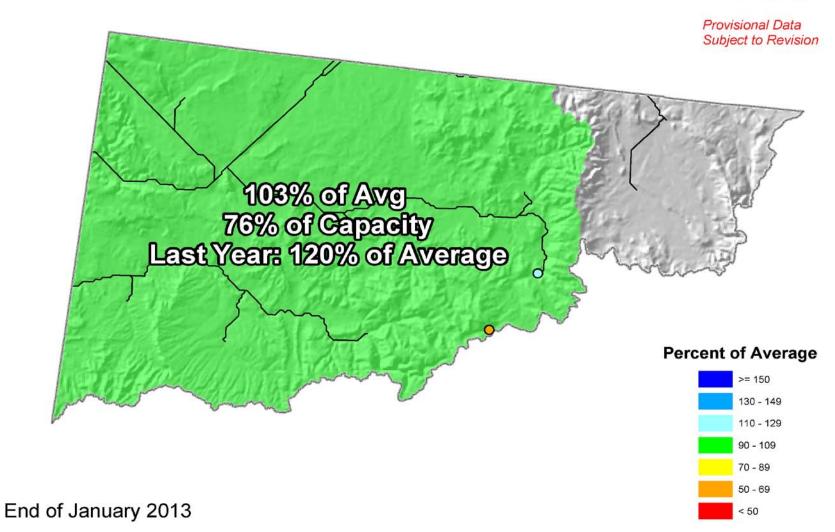


Yampa and White River Basins High/Low Year-to-Date Precipitation Summary Based on Provisional SNOTEL data as of Feb 13, 2013 Current as Pct of Average: 76% Current as Pct of Last Year: 99% Conservation Service Current as Pct of Average Annnual Total: 35% Average as Pct of Average Annual Total: 46% Pct of Avg Needed to Reach Avg Annual Total: 120% 50 Year-to-Date Precipitation (inches) 10 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01 Average WY2002 WY2011 WY2012 **─**WY2013 Median Maximum Mininum

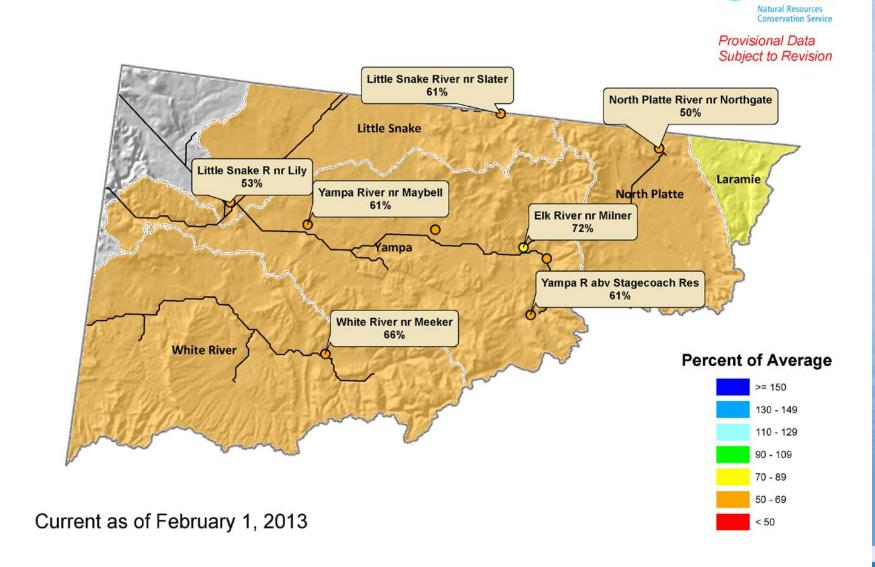


Yampa & White River Basins Reservoir Storage Map





Yampa, White and North Platte River Basins Streamflow Map

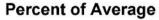


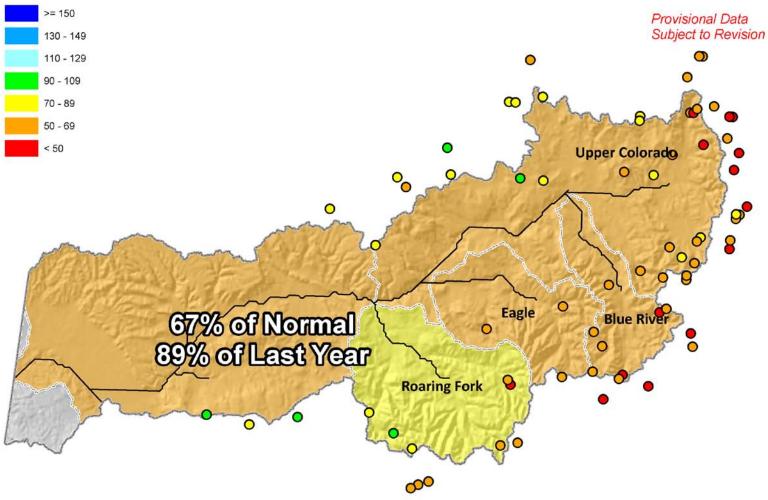
Colorado River Basin Summary



Colorado River Basin Snowpack Map







Current as of February 1, 2013

Upper Colorado River Basin High/Low Snowpack Summary Based on Provisional SNOTEL data as of Feb 13, 2013 30 Current as Pct of Normal: 71% Current as Pct of Avg: 66% Conservation Service Current as Pct of Last Year: 90% Current as Pct of Peak: 44% Normal as Pct of Peak: 62% Pct of Normal Needed to Reach Peak: 148% Average Peak Date: Apr 10 Snow Water Equivalent (inches) 5 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01 WY2002 WY2011 WY2012 WY2013 Maximum Mininum Average Median

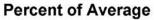
Upper Colorado River Basin High/Low Year-to-Date Precipitation Summary

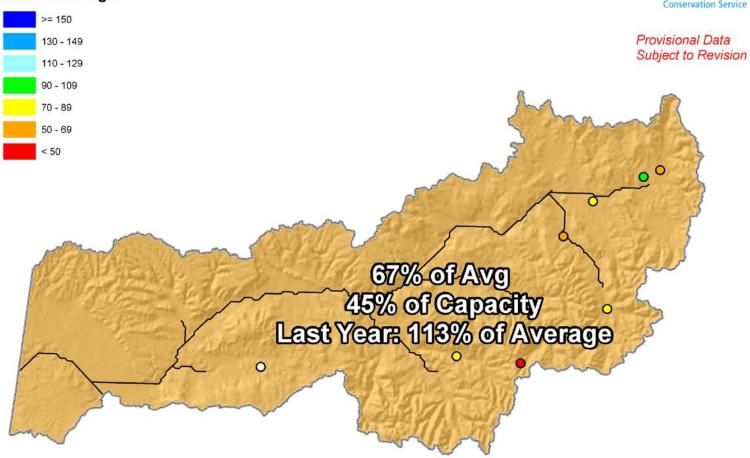
Based on Provisional SNOTEL data as of Feb 13, 2013 Current as Pct of Average: 69% Conservation Service Current as Pct of Last Year: 88% Current as Pct of Average Annnual Total: 27% Average as Pct of Average Annual Total: 39%
Pct of Avg Needed to Reach Avg Annual Total: 120% 35 Year-to-Date Precipitation (inches) 10 5 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01 Average WY2002 WY2011 WY2012 **■**WY2013 Median Maximum Mininum

Upper Colorado River Basin High/Low Monthly Precipitation Summary Based on Provisional SNOTEL data as of Feb 13, 2013 45 Conservation Service 40 35 30 Jan PREC Precipitation (Inches) 69% of Average **Feb PREC** 73% of Average 15 10 5 0 Average WY2013 WY2012 WY2011 WY2002 ■ Oct ■ Nov ■ Dec ■ Jan ■ Feb ■ Mar ■ Apr ■ May ■ Jun ■ Jul ■ Aug ■ Sep

Colorado River Basin Reservoir Storage Map

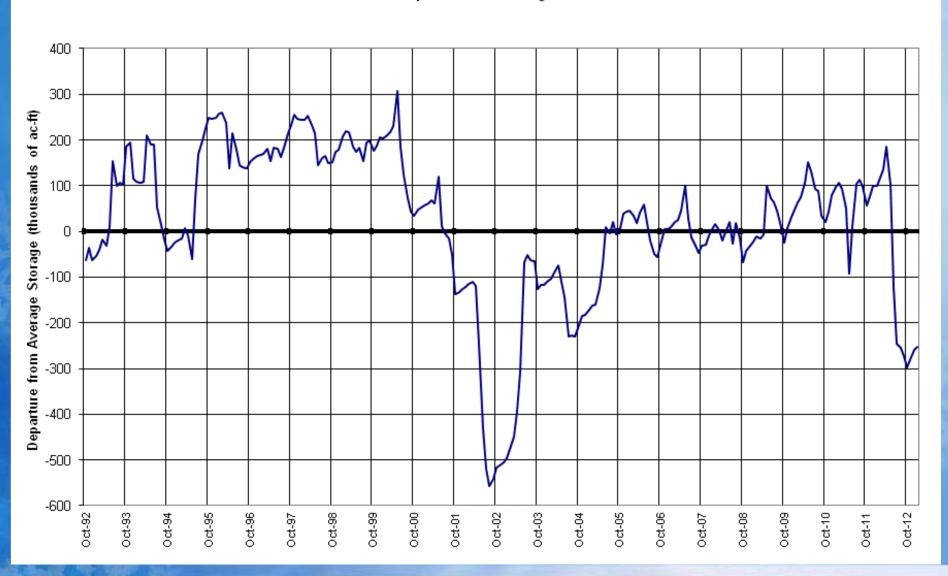






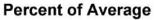
End of January 2013

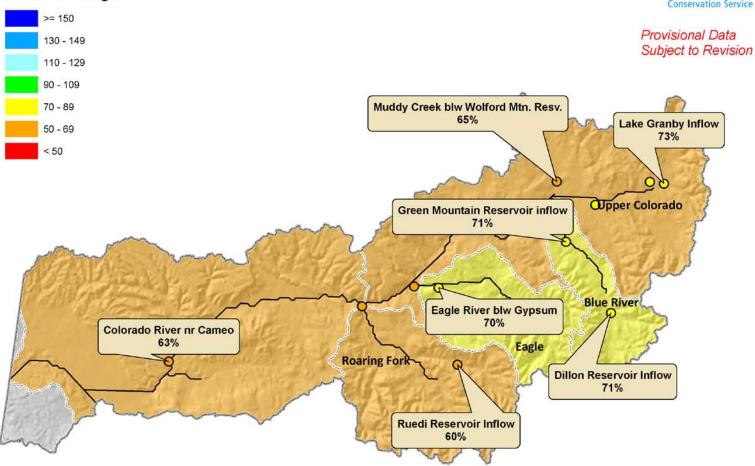
COLORADO RIVER BASIN Reservoir Storage Departure from Average



Colorado River Basin Streamflow Forecast Map

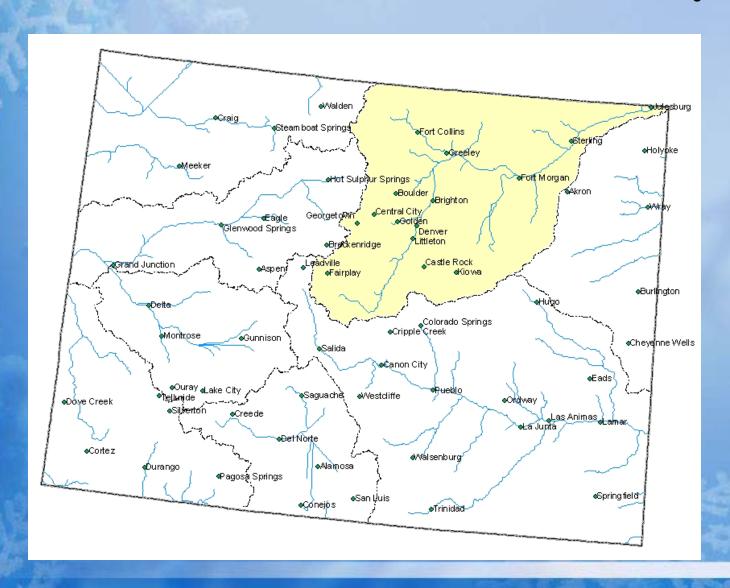






Current as of February 1, 2013

South Platte River Basin Summary



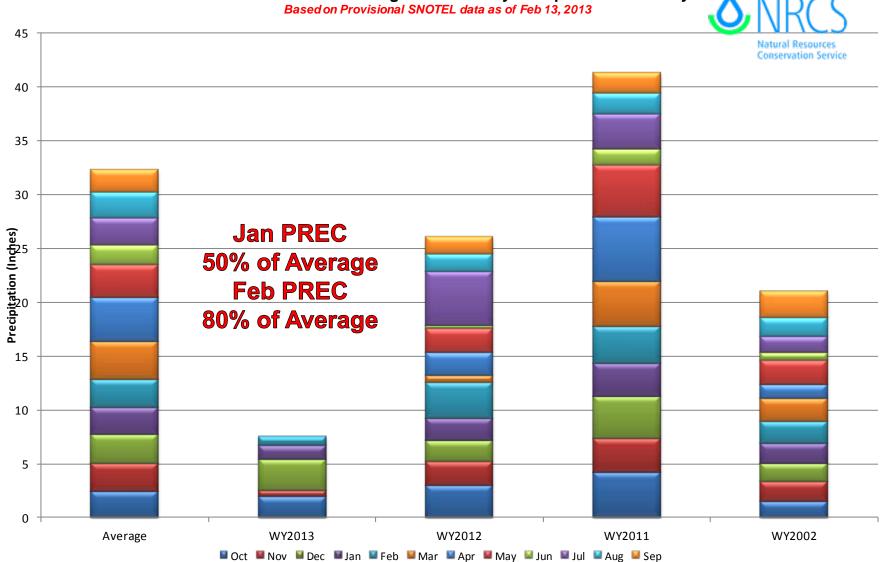
South Platte River Basin Snowpack Map **Percent of Average** Conservation Service >= 150 Provisional Data 130 - 149 Subject to Revision 110 - 129 90 - 109 Che la Poudre 70 - 89 50 - 69 < 50 Big Thompson Boulder Creek & St. Vrain Clear Creek 54% of Normal 58% of Last Year South Platte Headwaters

Current as of February 1, 2013

South Platte River Basin High/Low Snowpack Summary Based on Provisional SNOTEL data as of Feb 13, 2013 35 Current as Pct of Normal: 61% Current as Pct of Avg: 59% Conservation Service Current as Pct of Last Year: 63% Current as Pct of Peak: 37% Normal as Pct of Peak: 61% Pct of Normal Needed to Reach Peak: 161% Average Peak Date: Apr 28 25 Equivalent (inches) Snow Water 0 5 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01 WY2002 WY2011 WY2012 WY2013 Maximum Mininum Average Median

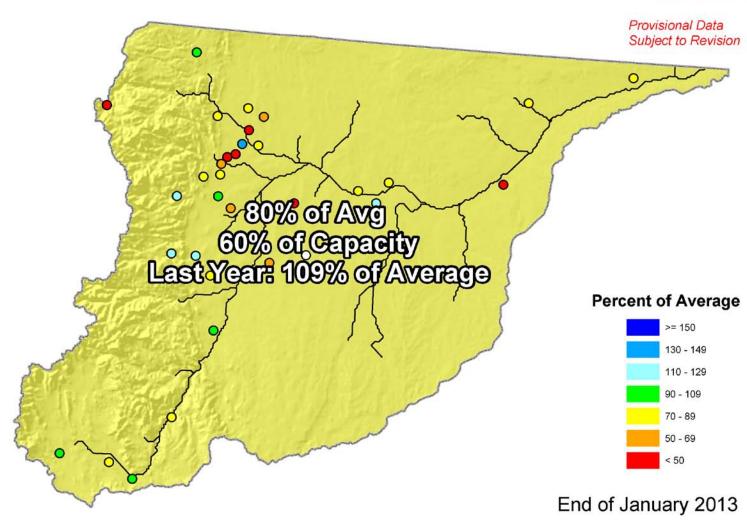
South Platte River Basin High/Low Year-to-Date Precipitation Summary Based on Provisional SNOTEL data as of Feb 13, 2013 Current as Pct of Average: 67% Conservation Service Current as Pct of Last Year: 71% Current as Pct of Average Annnual Total: 23% Average as Pct of Average Annual Total: 35% Pct of Avg Needed to Reach Avg Annual Total: 118% 35 Year-to-Date Precipitation (inches) 10 5 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01 Average WY2002 WY2011 WY2012 **W**Y2013 Median Maximum Mininum

South Platte River Basin High/Low Monthly Precipitation Summary

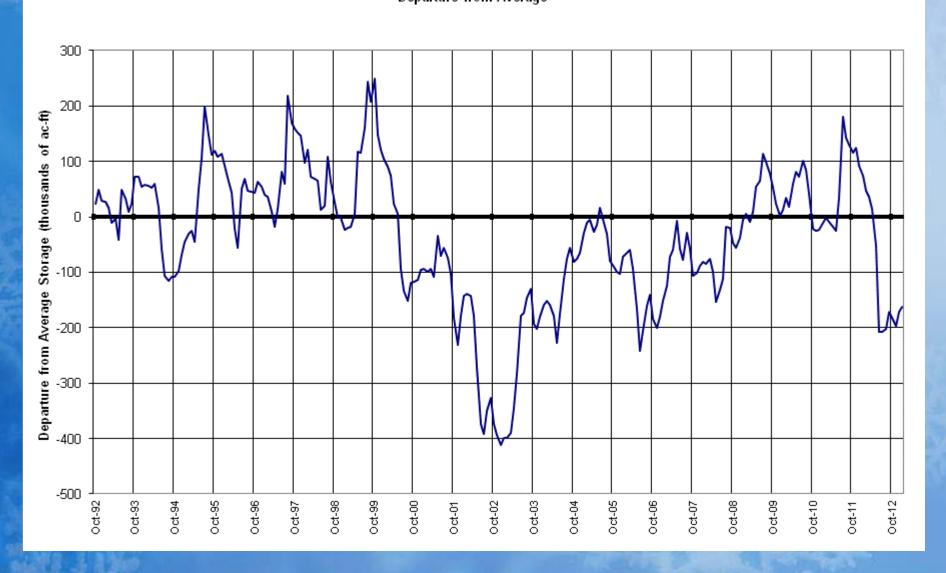


South Platte River Basin Reservoir Storage Map



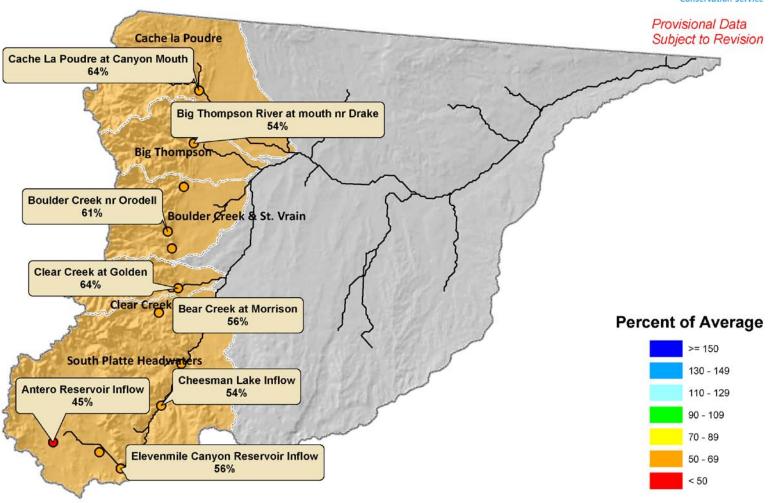


SOUTH PLATTE RIVER BASIN Reservoir Storage Departure from Average



South Platte River Basin Streamflow Forecast Map

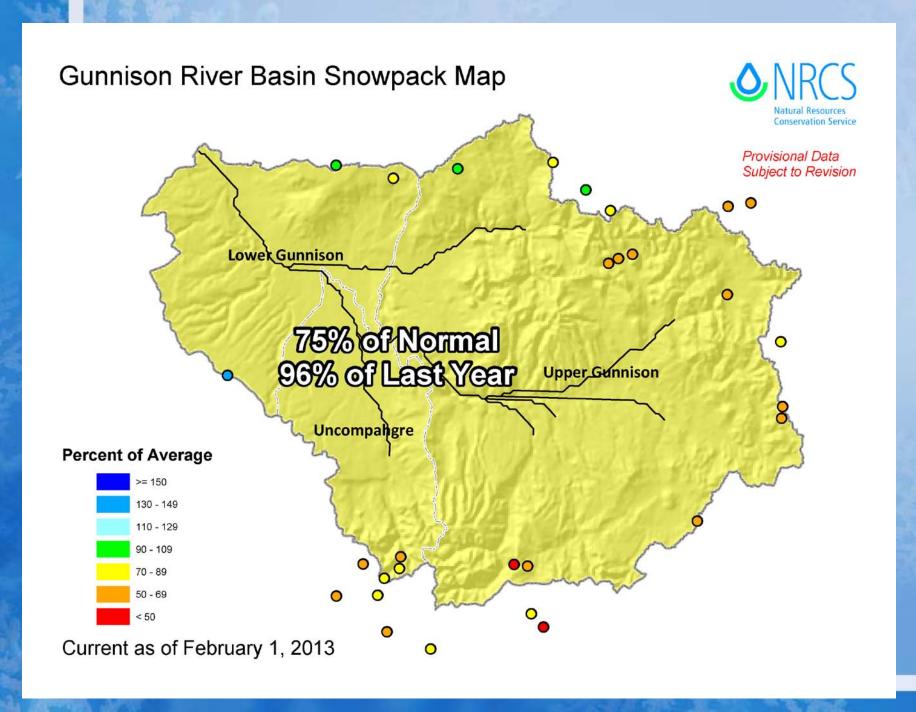




Current as of February 1, 2013

Gunnison River Basin Summary





Gunnison River Basin High/Low Snowpack Summary Based on Provisional SNOTEL data as of Feb 13, 2013 35 Current as Pct of Normal: 76% Current as Pct of Avg: 73% Conservation Service Current as Pct of Last Year: 95% Current as Pct of Peak: 49% Normal as Pct of Peak: 64% Pct of Normal Needed to Reach Peak: 142% Average Peak Date: Apr 10 25 Equivalent (inches) Snow Water 0 5 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01 WY2002 WY2011 WY2012 **WY2013** Maximum Mininum Average Median

Gunnison River Basin High/Low Year-to-Date Precipitation Summary Based on Provisional SNOTEL data as of Feb 13, 2013 50 Current as Pct of Average: 72% Current as Pct of Last Year: 85% Current as Pct of Average Annnual Total: 30% Average as Pct of Average Annual Total: 41% Pct of Avg Needed to Reach Avg Annual Total: 119% 5

40

35

Year-to-Date Precipitation (inches)

10

Oct 01

Nov 01

Dec 01

Average

Jan 01

WY2002

Feb 01

WY2011

Mar 01

WY2012

Apr 01

WY2013

May 01

Jun 01

Median

Jul 01

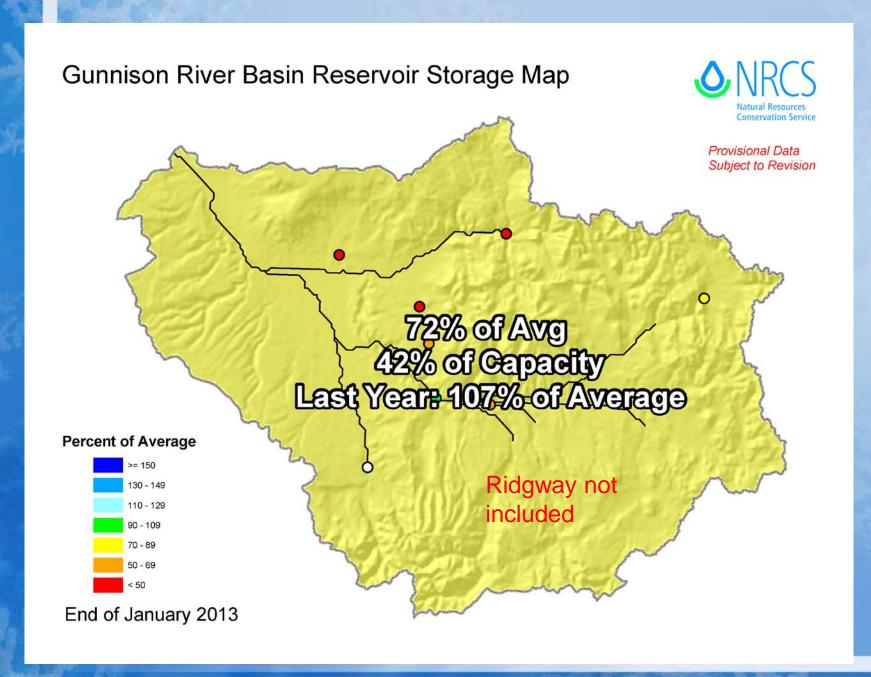
Maximum

Aug 01

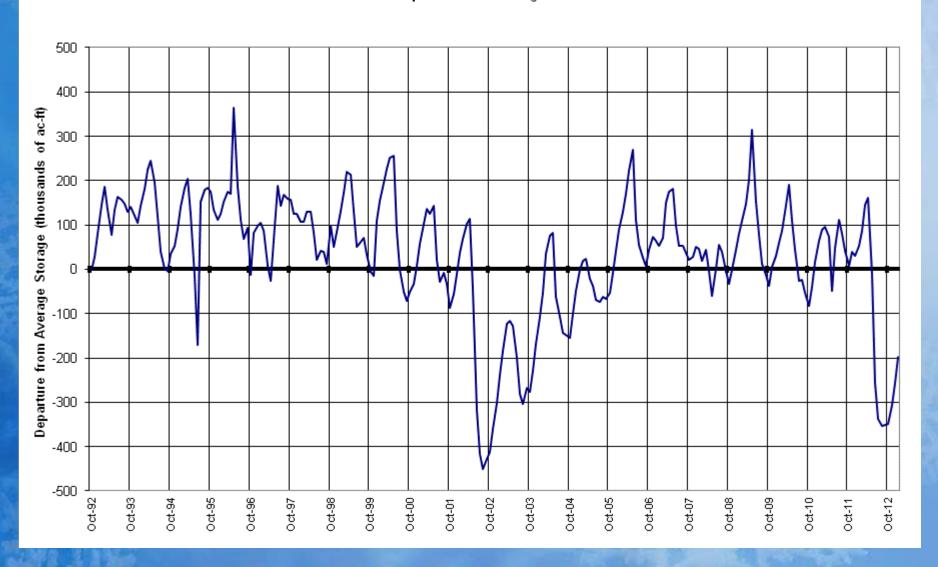
Mininum

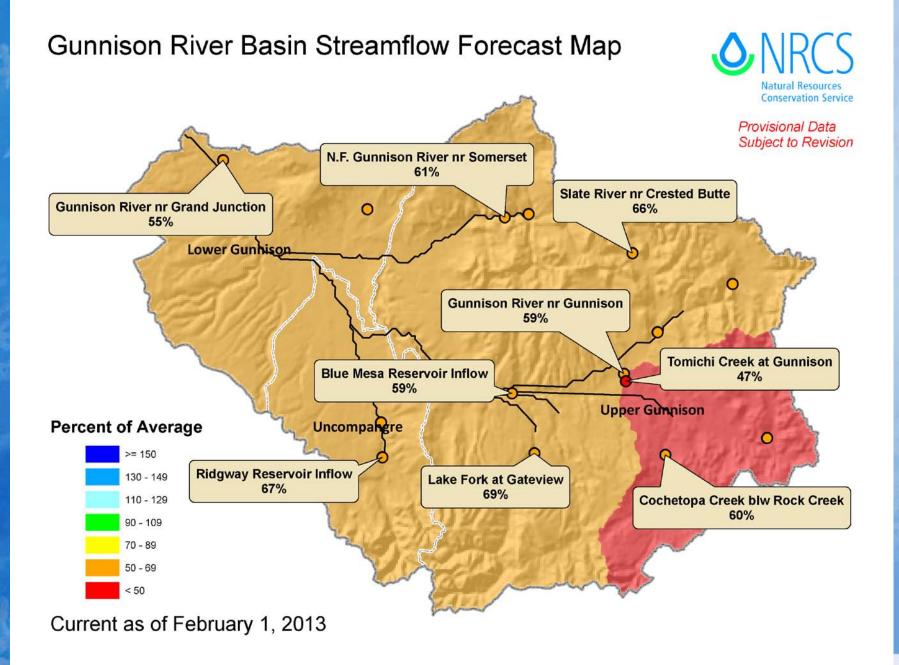
Sep 01

Gunnison River Basin High/Low Monthly Precipitation Summary Based on Provisional SNOTEL data as of Feb 13, 2013 40 Conservation Service 35 30 25 **Jan PREC** Precipitation (Inches) 90% of Average **Feb PREC** 69% of Average 10 5 0 Average WY2013 WY2012 WY2011 WY2002 ■ Oct ■ Nov ■ Dec ■ Jan ■ Feb ■ Mar ■ Apr ■ May ■ Jun ■ Jul ■ Aug ■ Sep

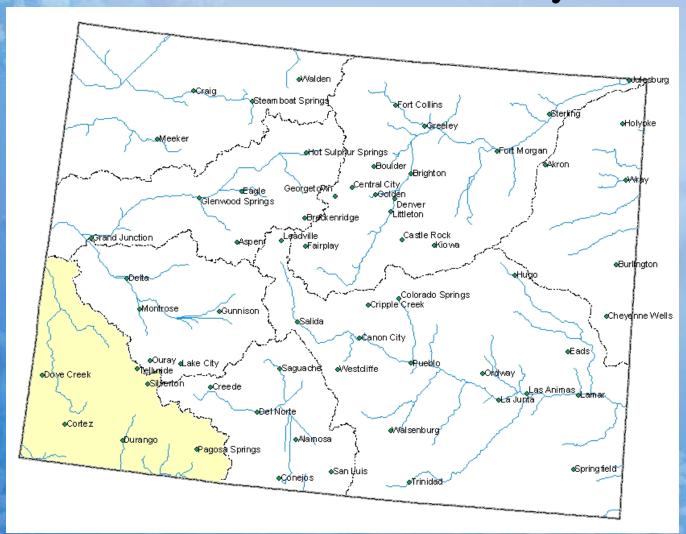


GUNNISON RIVER BASIN Reservoir Storage Departure from Average



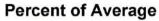


San Miguel, Dolores, Animas & San Juan River Basins Summary

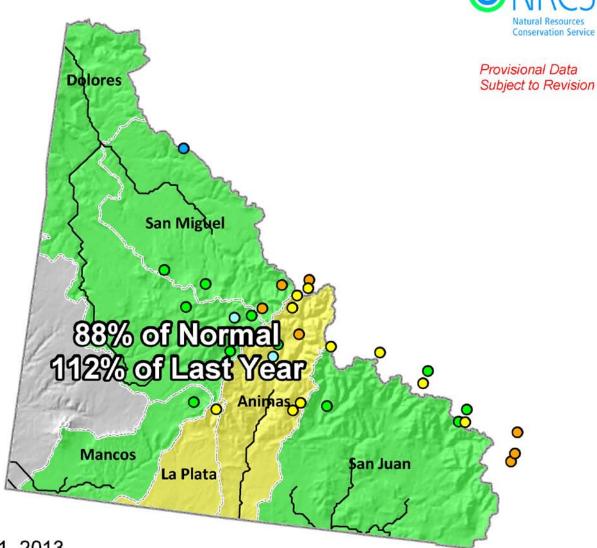


San Miguel, Dolores, Animas and San Juan River Basins

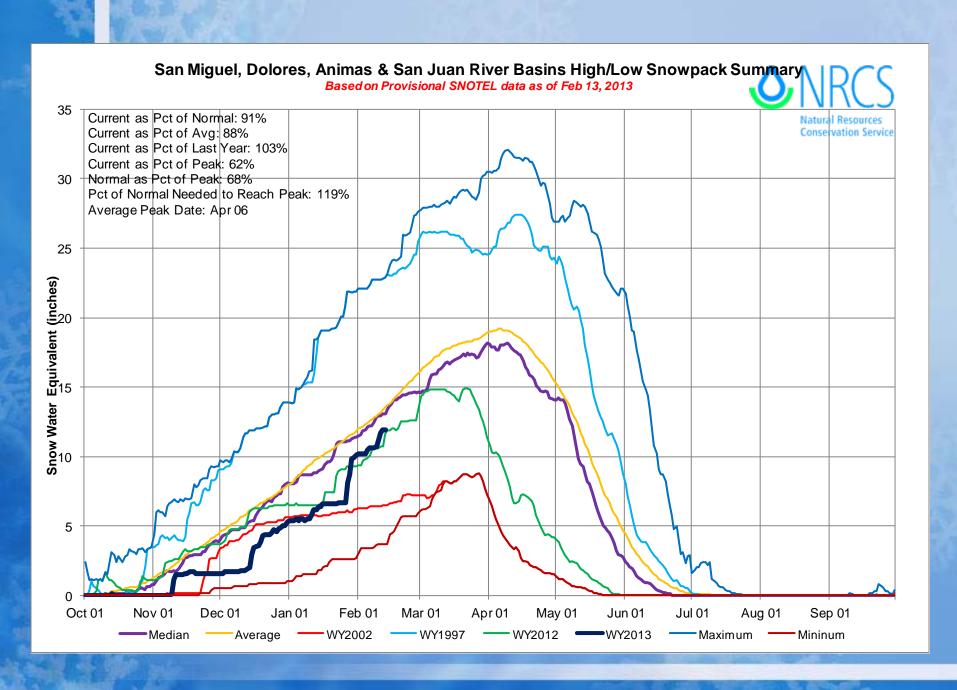
Snowpack Map



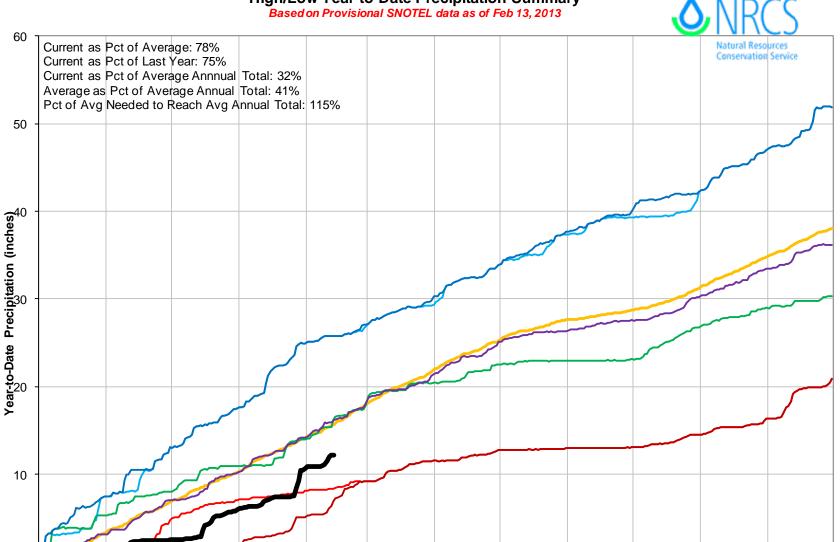




Current as of February 1, 2013



San Miguel, Dolores, Animas & San Juan River Basins High/Low Year-to-Date Precipitation Summary



Oct 01

Nov 01

Average

Dec 01

Jan 01

WY2002

Feb 01

WY1997

Mar 01

WY2012

Apr 01

WY2013

May 01

Jul 01

Maximum

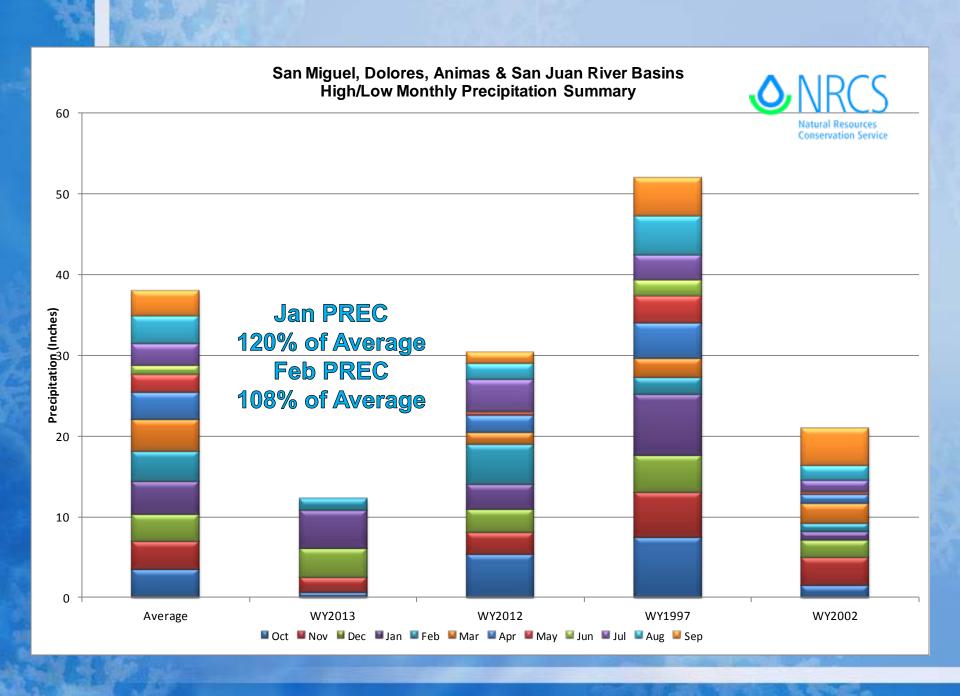
Aug 01

Mininum

Jun 01

Median

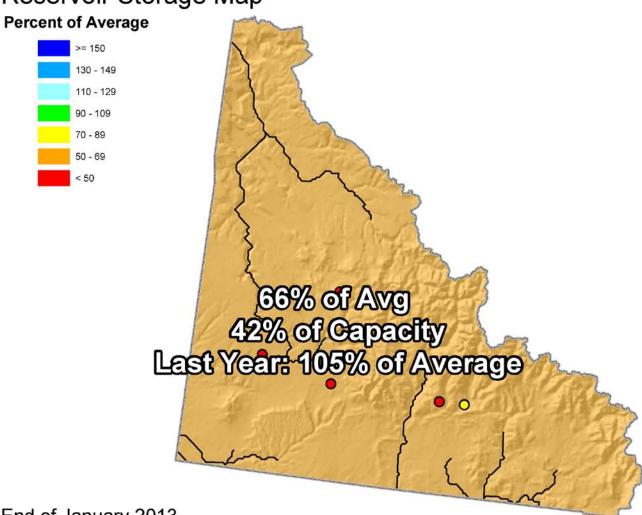
Sep 01



San Miguel, Dolores, Animas and San Juan River Basins Reservoir Storage Map



Provisional Data Subject to Revision



End of January 2013

SAN MIGUEL, DOLORES, ANIMAS AND SAN JUAN RIVER BASINS Reservoir Storage Departure from Average

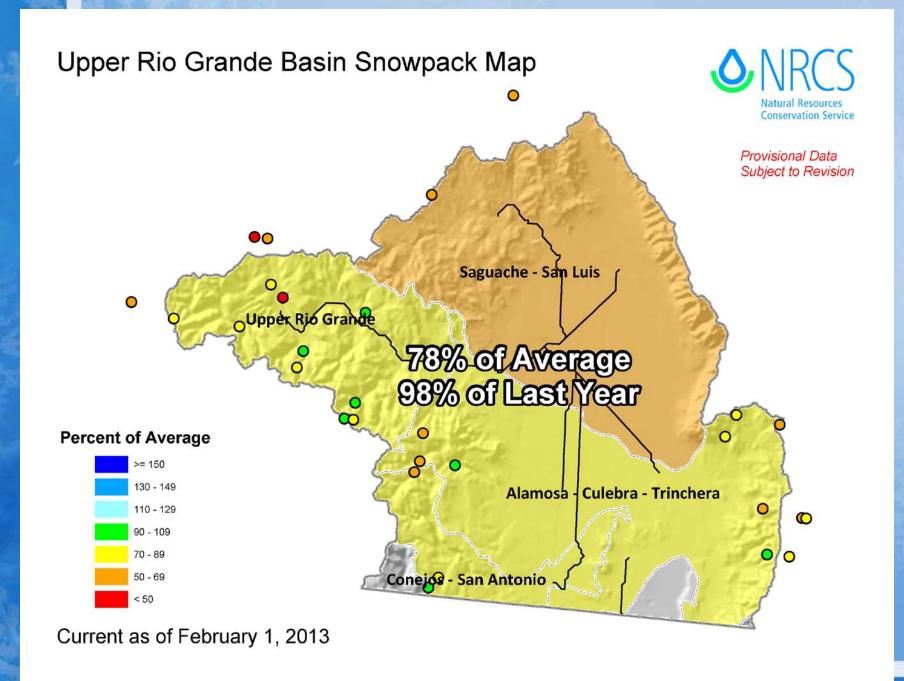


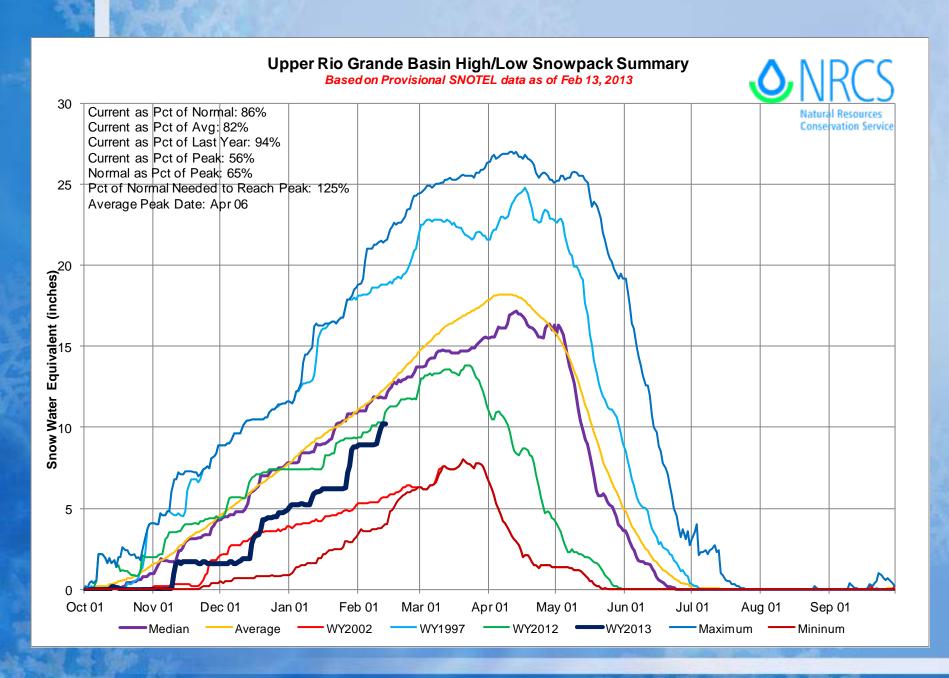
San Miguel, Dolores, Animas and San Juan River Basins Streamflow Forecast Map **Percent of Average** >= 150 Provisional Data 130 - 149 **Dolores** Subject to Revision 110 - 129 90 - 109 70 - 89 50 - 69< 50 San Miguel River nr Placerville San Miguel³ 69% McPhee Reservoir Inflow 68% **Mancos River nr Mancos** 68% Vallecito Reservoir Inflow 79% **Dolores River at Dolores** Animas O O 71% La Plata San Juan River nr Carracus Mancos 74% **Animas River at Durango** 70% San Juan

Current as of February 1, 2013

Upper Rio Grande Basin Summary







Upper Rio Grande Basin High/Low Year-to-Date Precipitation Summary Based on Provisional SNOTEL data as of Feb 13, 2013 50 Current as Pct of Average: 75% Conservation Service Current as Pct of Last Year: 72% Current as Pct of Average Annnual Total: 30% Average as Pct of Average Annual Total: 40% Pct of Avg Needed to Reach Avg Annual Total: 116% 40 35 Year-to-Date Precipitation (inches) 10 5 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01

Average

WY2002

WY1997

WY2012

WY2013

Median

Maximum

Mininum

Upper Rio Grande Basin High/Low Monthly Precipitation Summary Based on Provisional SNOTEL data as of Feb 13, 2013 Conservation Service Jan PREC 107% of Average Feb PREC 100% of Average

WY2012

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

WY1997

WY2002

45

40

35

30

Precipitation (Inches)

15

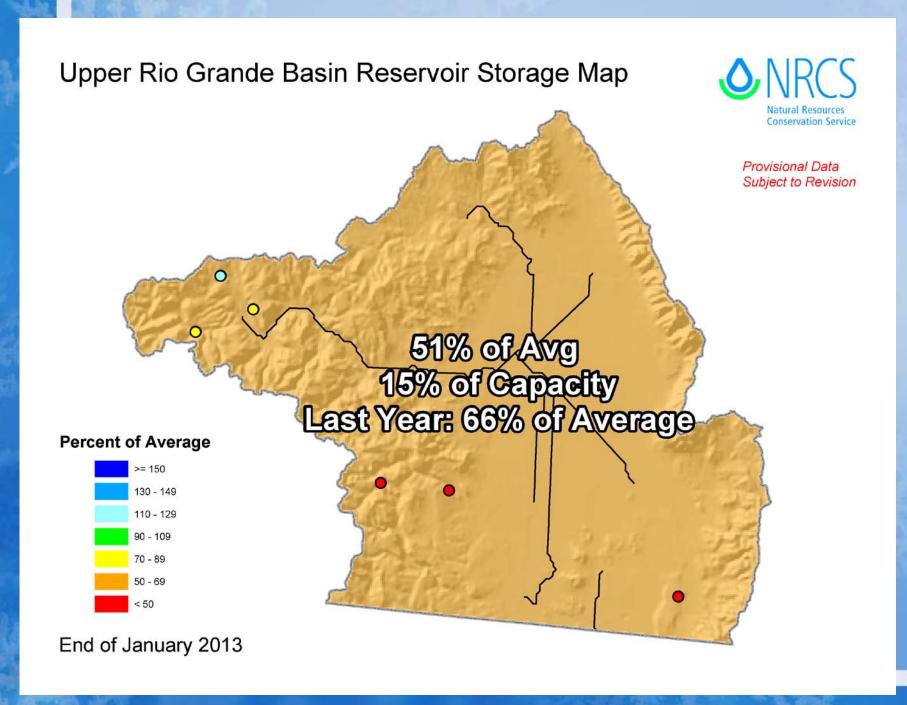
10

5

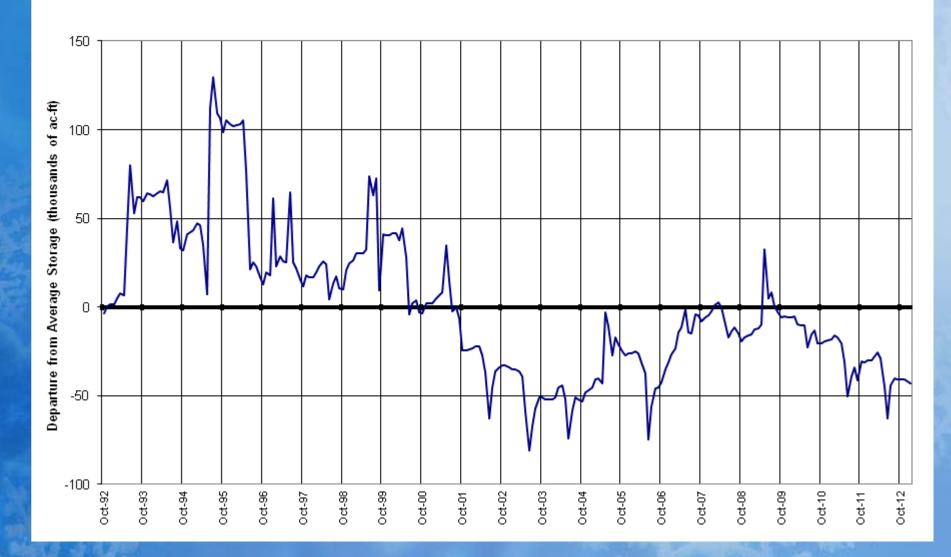
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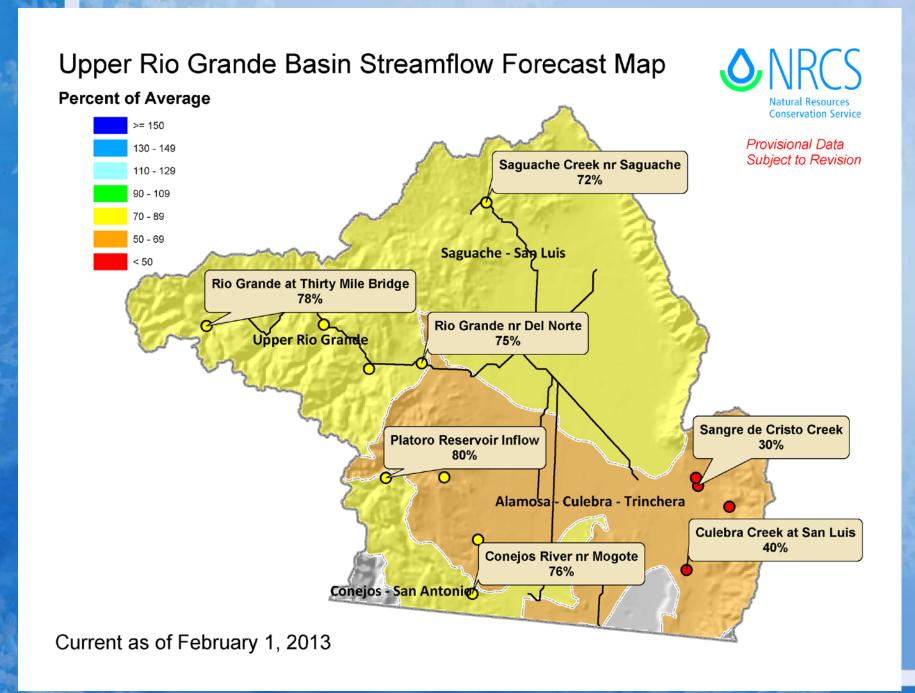
Average

WY2013



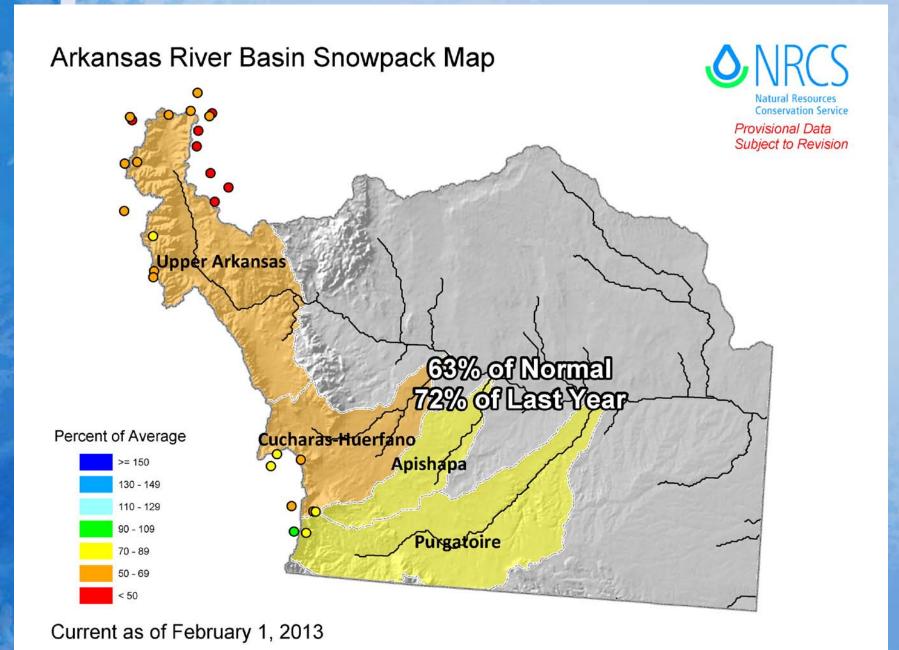
UPPER RIO GRANDE BASIN Reservoir Storage Departure from Average





Arkansas River Basin Summary





Arkansas River Basin High/Low Snowpack Summary Based on Provisional SNOTEL data as of Feb 13, 2013 Current as Pct of Normal: 61% Current as Pct of Avg: 61% Conservation Service Current as Pct of Last Year: 68% Current as Pct of Peak: 42% Normal as Pct of Peak: 69% Pct of Normal Needed to Reach Peak: 189% Average Peak Date: Apr 10 Snow Water Equivalent (inches) 5 Oct 01 Nov 01 Dec 01 Jan 01 Feb 01 Mar 01 Apr 01 May 01 Jun 01 Jul 01 Aug 01 Sep 01

WY2002

WY1997

WY2012

WY2013

- Maximum

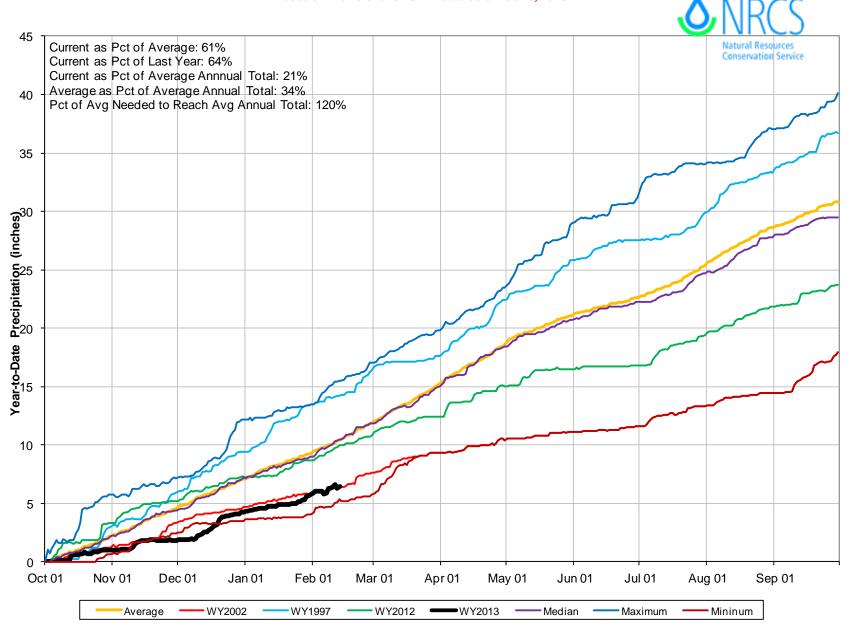
Mininum

Median

Average

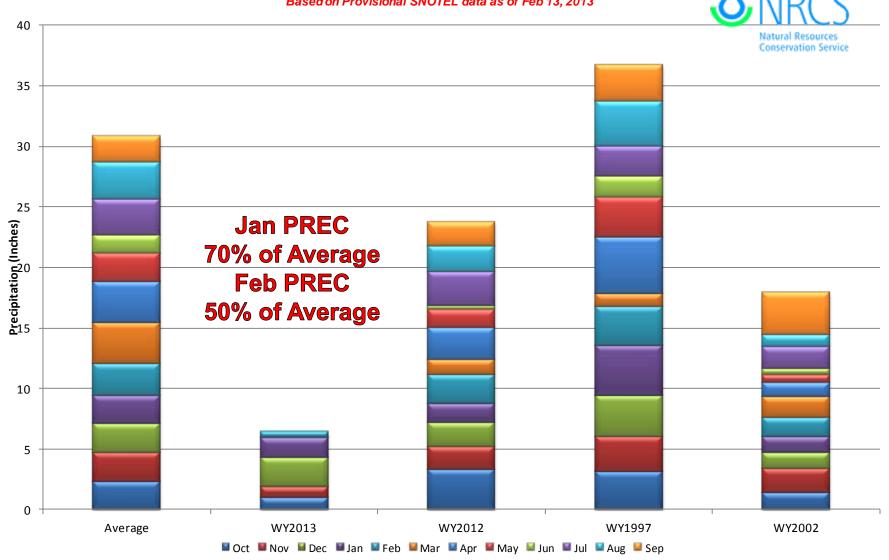
Arkansas River Basin High/Low Year-to-Date Precipitation Summary

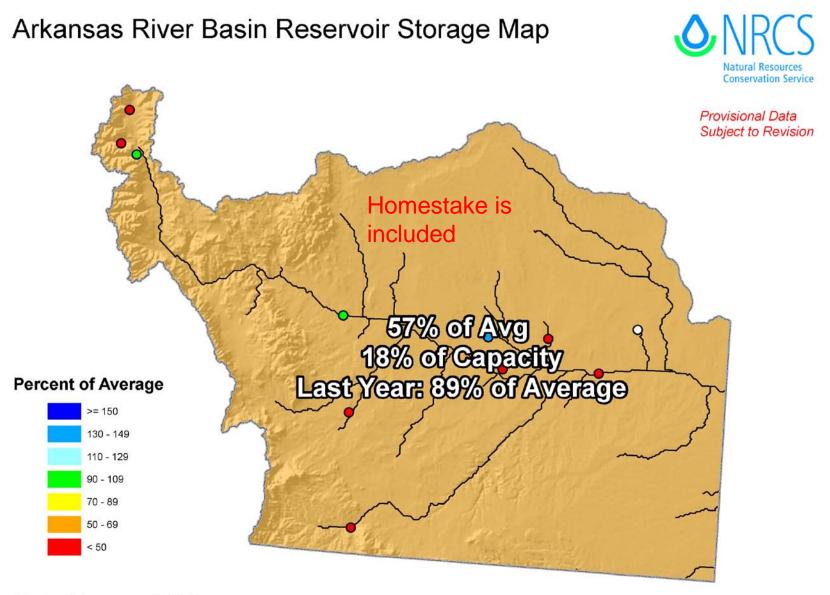
Based on Provisional SNOTEL data as of Feb 13, 2013



Arkansas River Basin High/Low Monthly Precipitation Summary

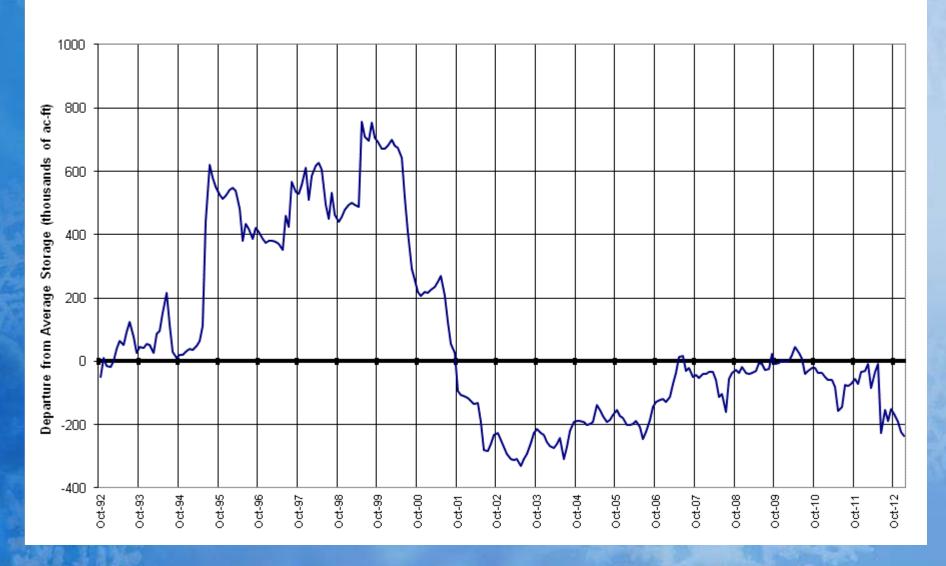
Based on Provisional SNOTEL data as of Feb 13, 2013

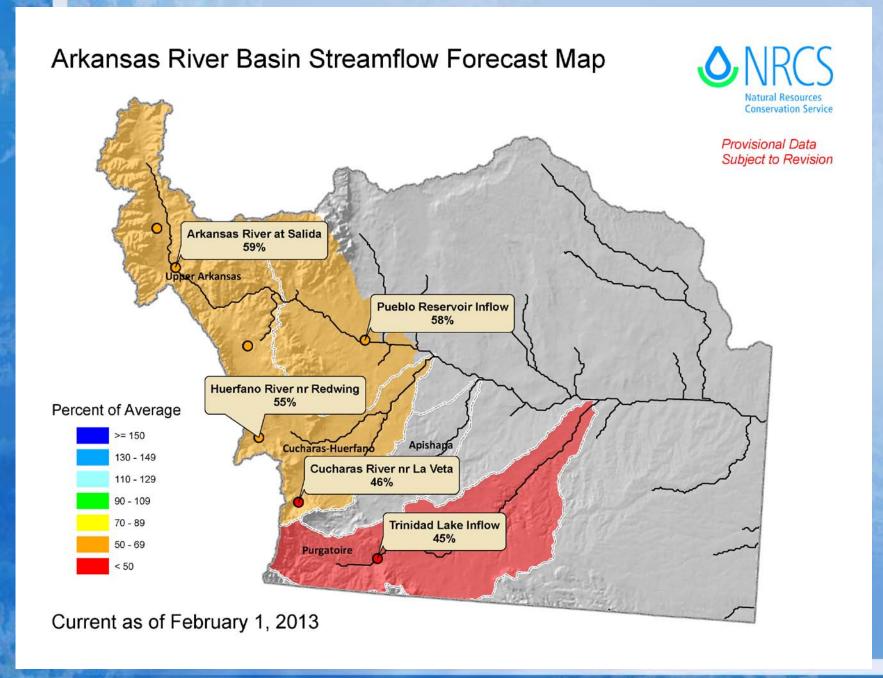




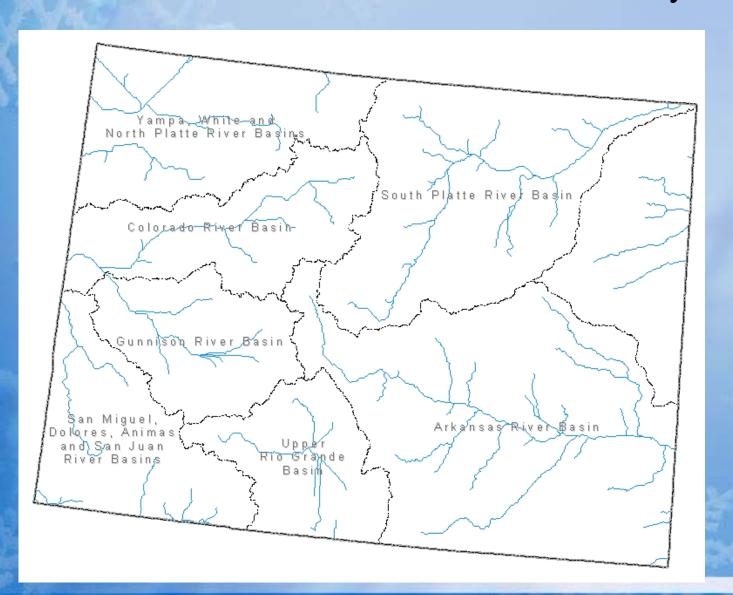
End of January 2013

ARKANSAS RIVER BASIN Reservoir Storage Departure from Average

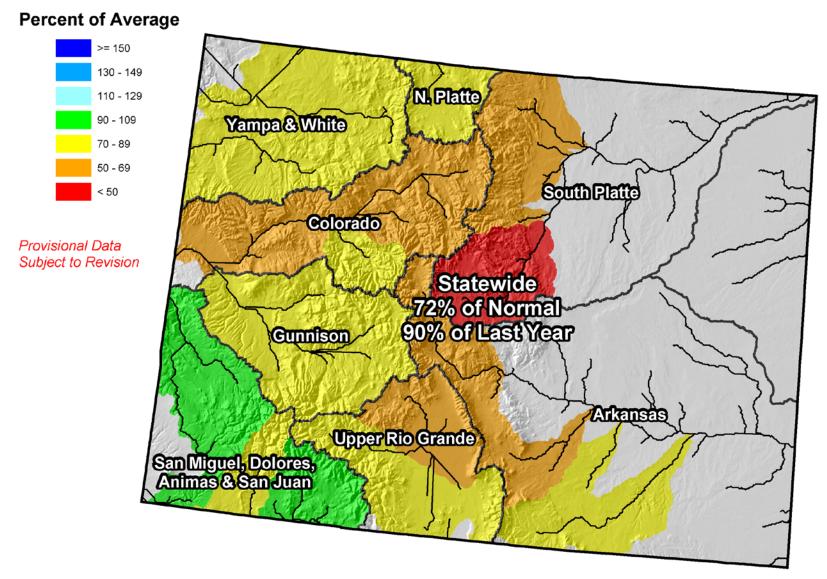




Colorado Statewide Summary

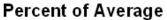


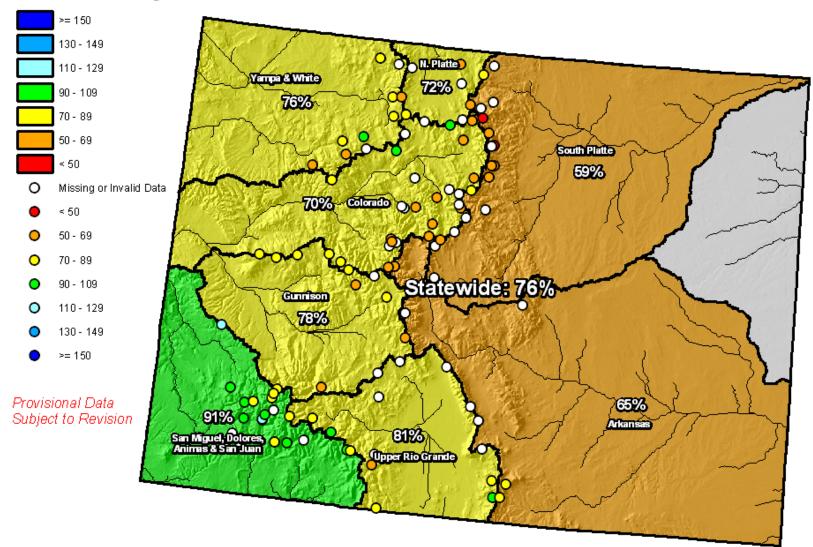
Colorado Snowpack Map



Current as of February 1, 2013

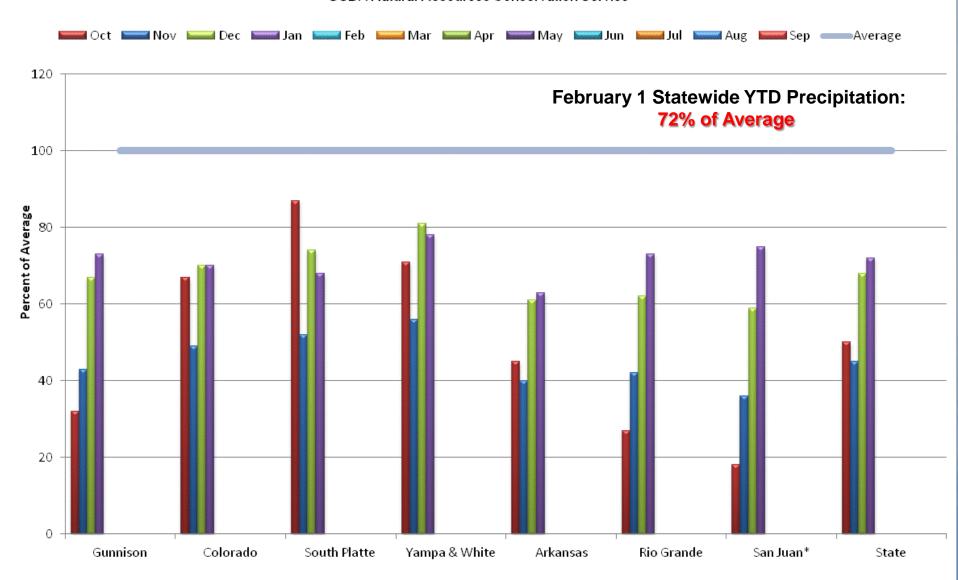
Colorado SNOTEL Snowpack Update Map with Site Data





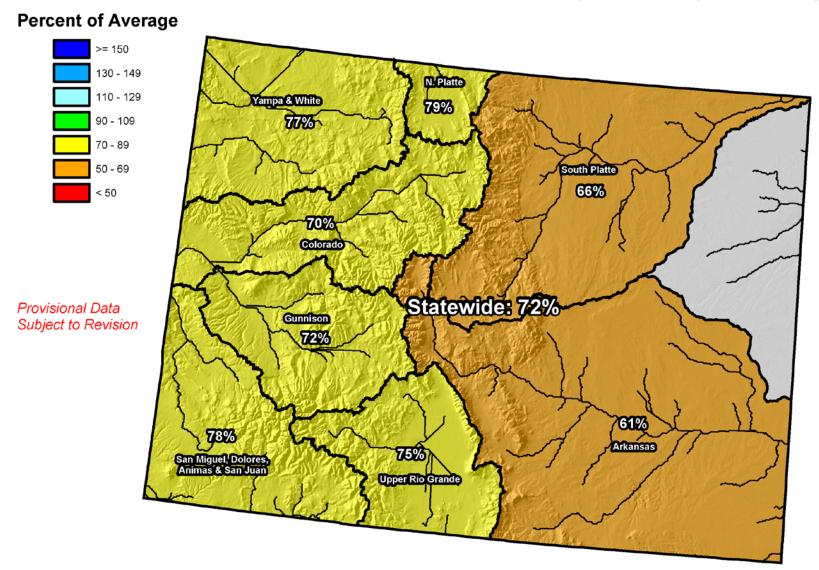
Colorado Year-to-Date Precipitation Summary for WY2013

USDA Natural Resources Conservation Service



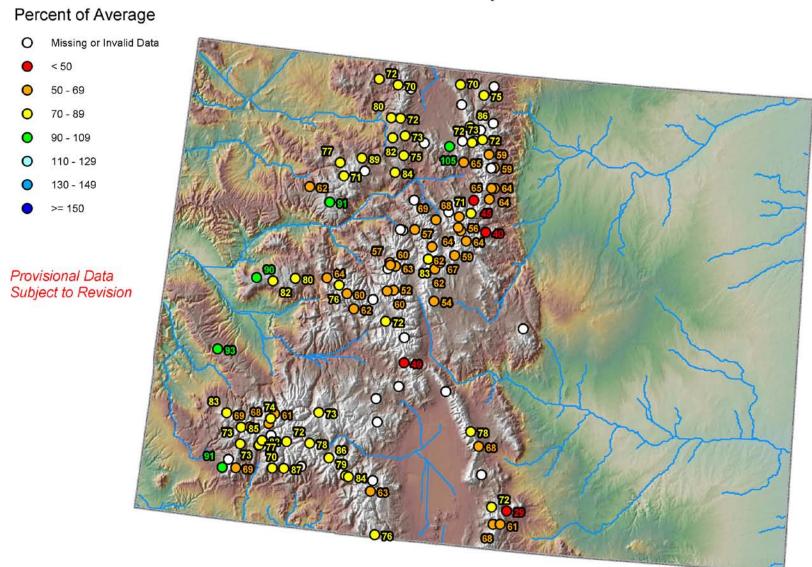
*Includes Animas, Dolores, San Miguel Basins

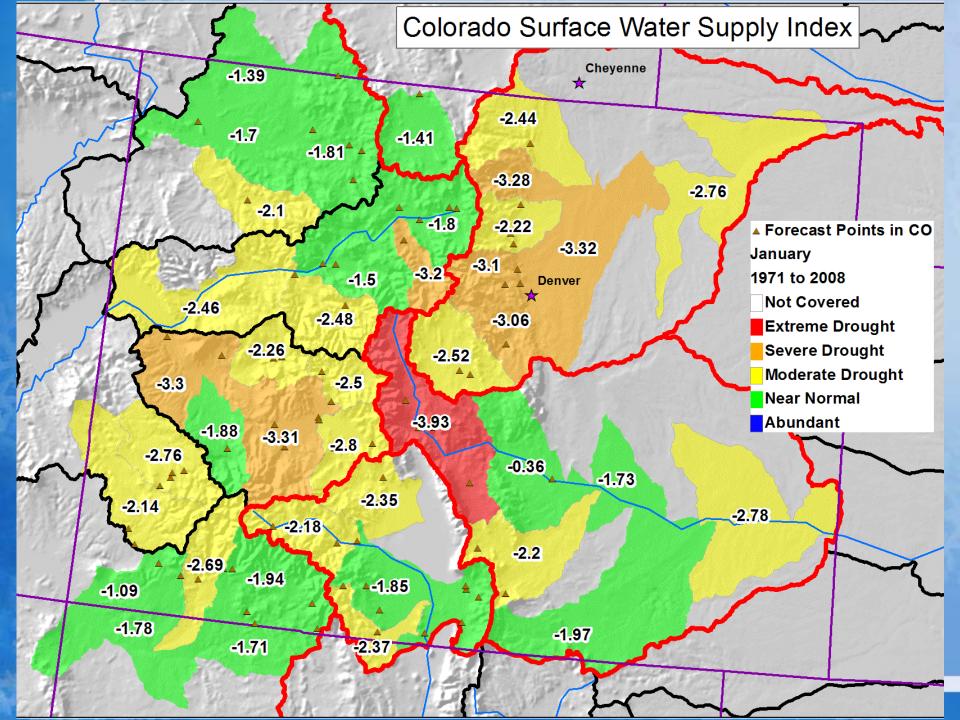
Colorado SNOTEL Water Year-to-Date Precipitation Update Map



Current as of Feb 12, 2013

Colorado SNOTEL Year-to-Date Precipitation

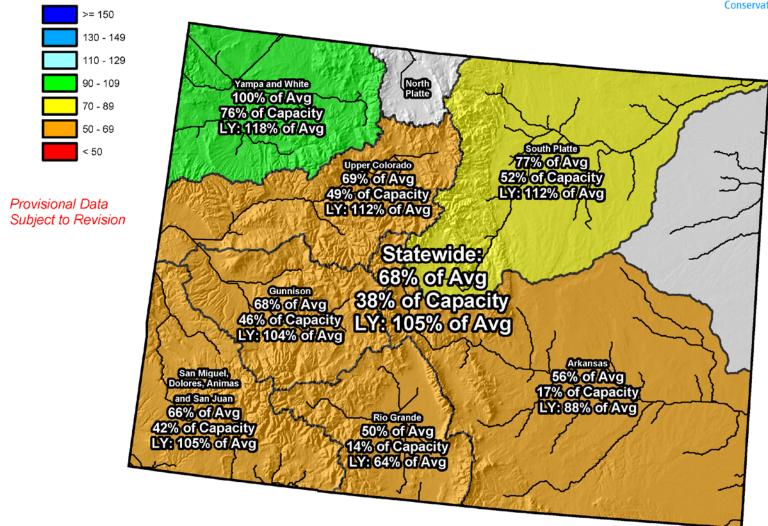




Colorado Reservoir Storage Map

Natural Resources Conservation Service

Percent of Average

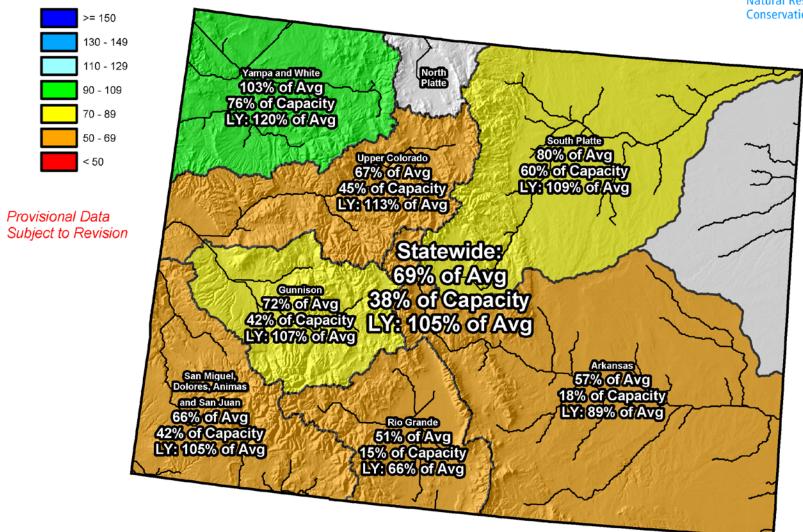


End of December 2012

Colorado Reservoir Storage Map

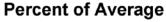


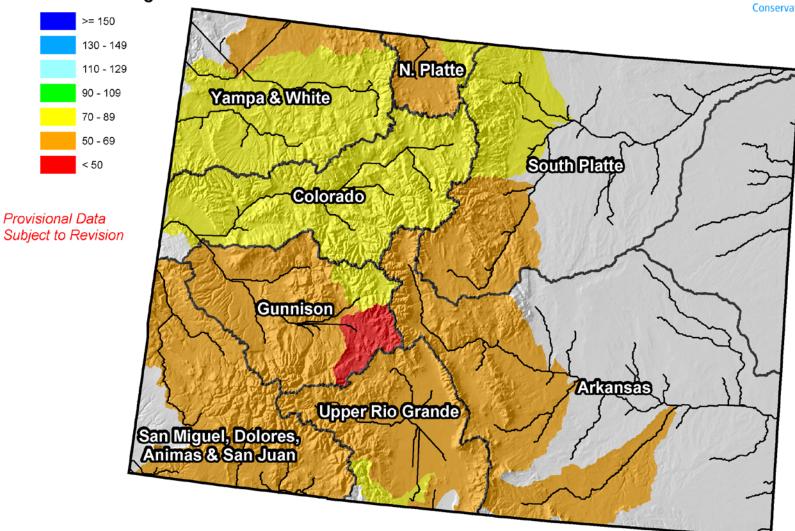
Percent of Average



Colorado Streamflow Forecast Map



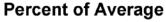


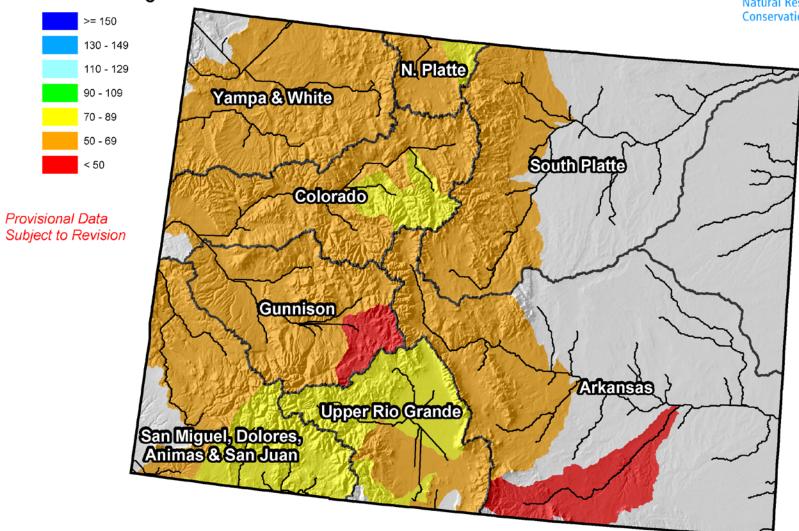


Current as of January 1, 2013

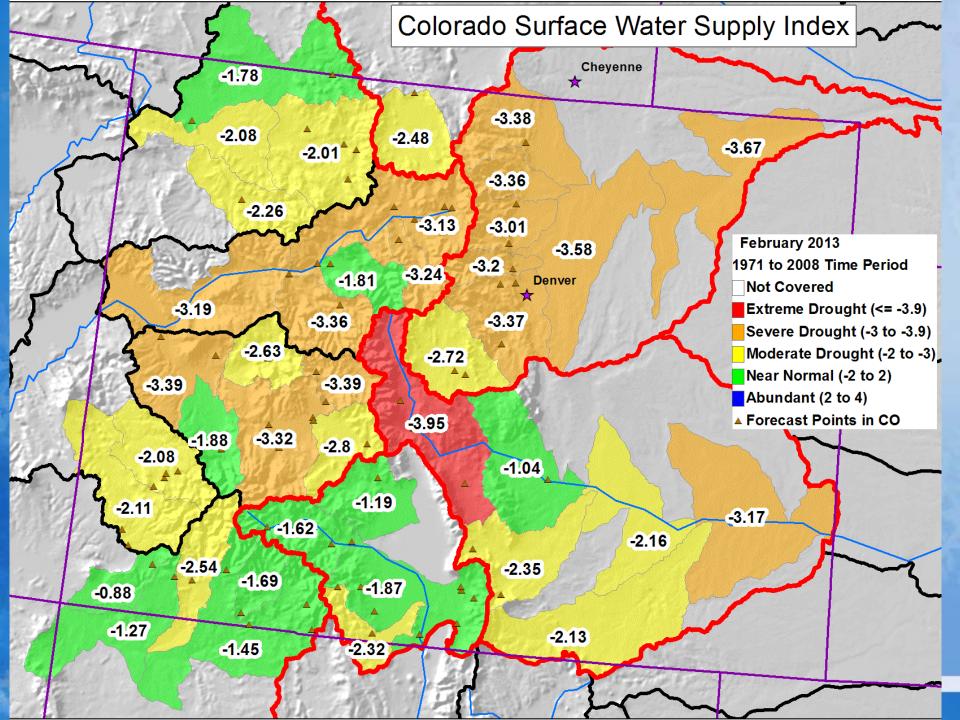
Colorado Streamflow Forecast Map

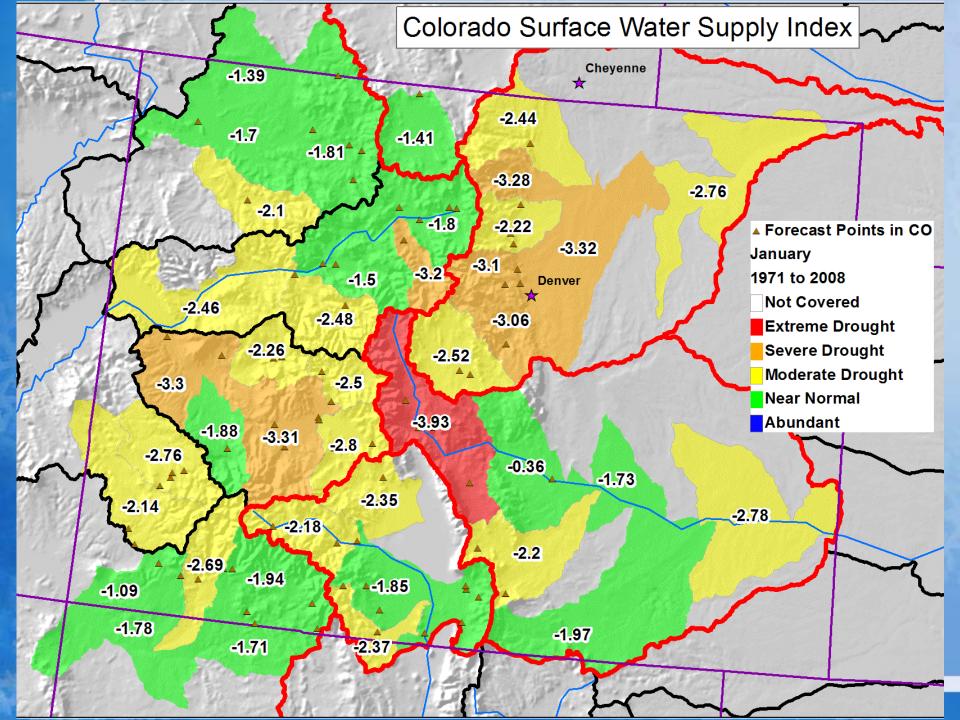


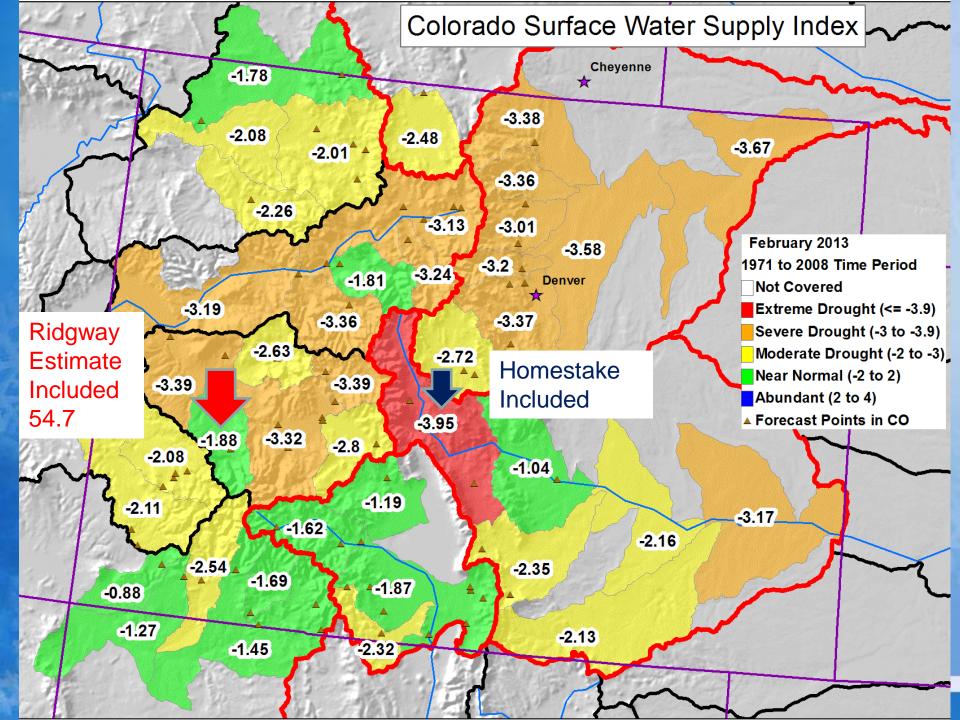




Current as of February 1, 2013







Notes on the February SWSI

- •SWSI inputs switch in January from reservoir storage and observed streamflow to reservoir storage and streamflow forecasts.
 - "More of a future component"
- •Many of the HUC's in the Near Normal category are negative and on the boundary of the next lower classification.
- •The Arkansas Headwaters HUC that is negative 3.95 is reporting reservoir storage at the lowest end of the historical probability distribution (Homestake).
- •Feb did include an estimate for Ridgway Reservoir at 54.7 as of the last reading on January 15th.

WY2013 Summary

- •OCT: Began WY with below normal mountain precipitation and SWE.
- •NOV: Overall Nov ended up being drier, compared to normal, than Oct.
- •DEC: SNOW! Finally. Storms in mid to late Dec boosted snowpack but it was not enough to reach normal conditions.
- •JAN: Very little snow or prec. Southern basins have the highest PREC percentages so far. End of January storm increased snowpack mostly in the Southwest
- •FEB: No significant precipitation so far so expect the SWSI values will become more negative. The more negative values will result in a less colorful map because of the large number of HUC's at or near a change in severity classification.