CBRFC
February 2012
Water Supply Webinar

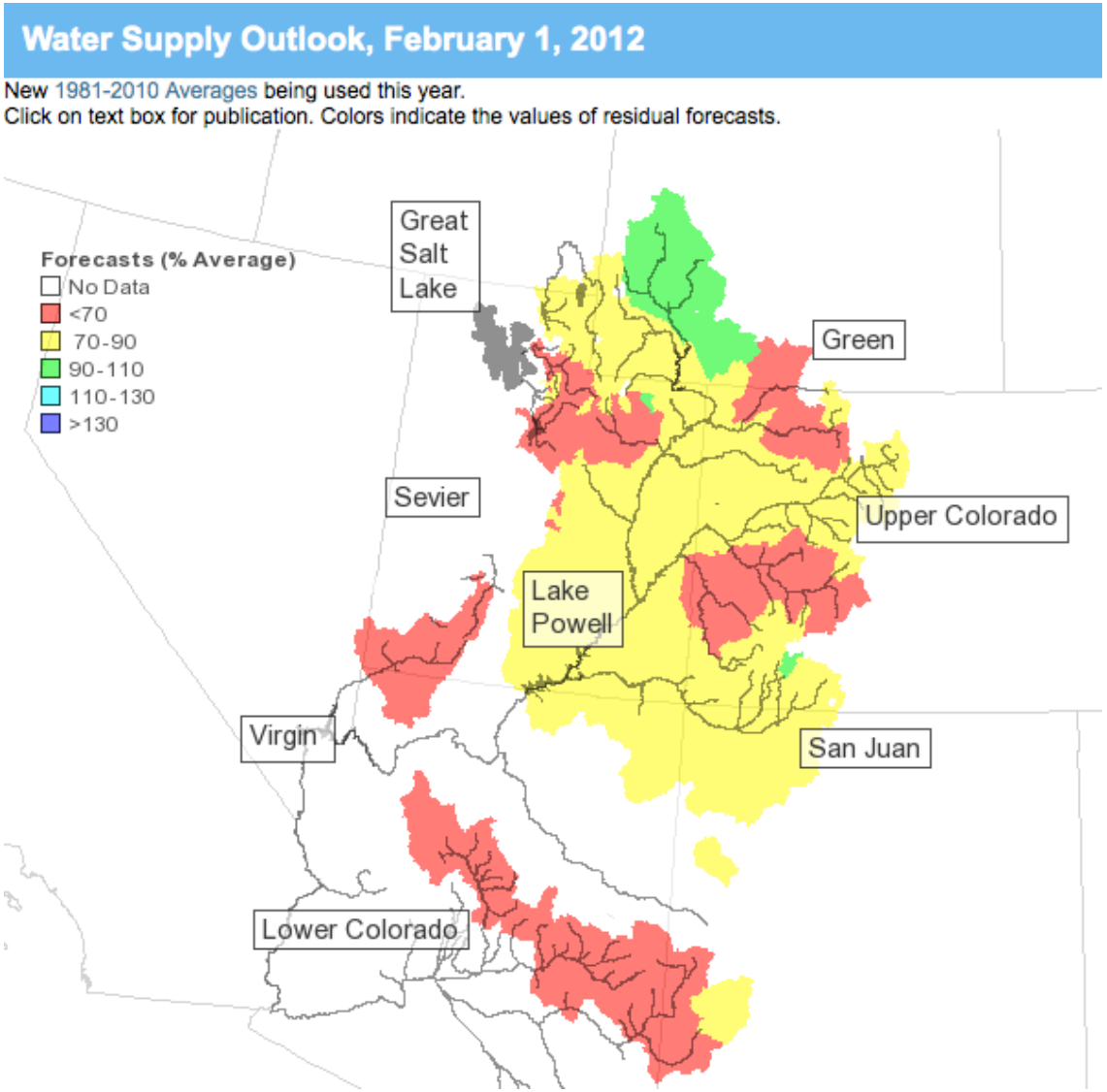
1pm, February 6, 2012

Kevin Werner

These slides: www.cbrfc.noaa.gov/present/present.php

Outline

- New Averages
- January Weather Review
- Snow States
- Water Supply Forecasts



Web Reference: www.cbrfc.noaa.gov/wsup/pub2/map/html/cbrfc.1.2011.html

COLORADO BASIN RIVER FORECAST CENTER

NATIONAL WEATHER SERVICE / NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

New Averages for 2012 Water Year

Beginning January 1, 2012, we are using the 1981-2010 period for averages, forecast equations, and model calibration.

Frequently Asked Questions

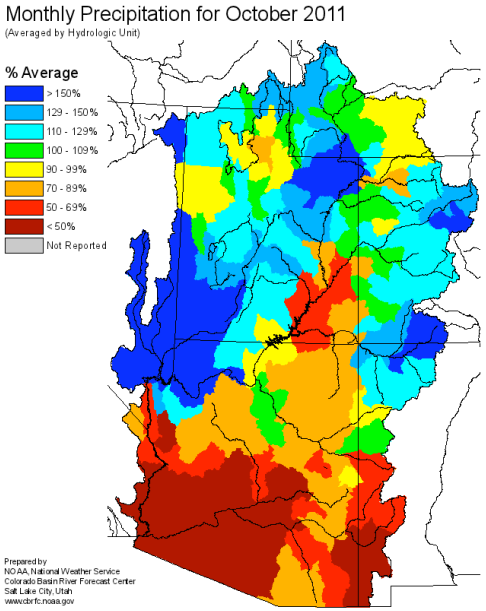
1. Why Do we update averages every 10 years using the most recent 30 year period for average computation?
Answer: We follow the NOAA and World Meteorological Organization (WMO) convention. NOAA/NCDC developed an explanation of this here

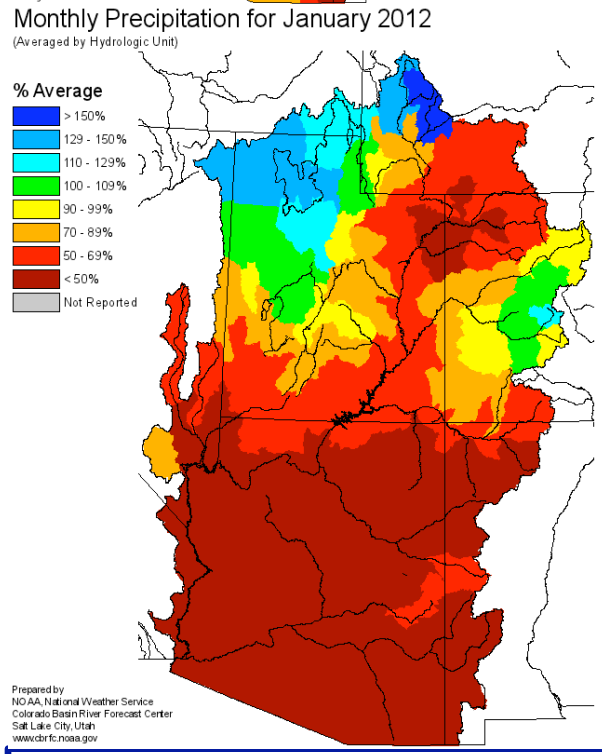
2. How does the 1981-2010 period compare with the 1971-2000 period and previous 30 year periods?
Answer: Streamflow volumes in the new 30 year period is generally between 5% and 20% lower than in the previous period. The largest decreses are observed in the upper Green River and the Bear River. For the entire upper Colorado above Lake Powell, the difference 11%. The new 30 year period has the lowest average volume of any of the 30 year periods in the instrumental record. More details are available here

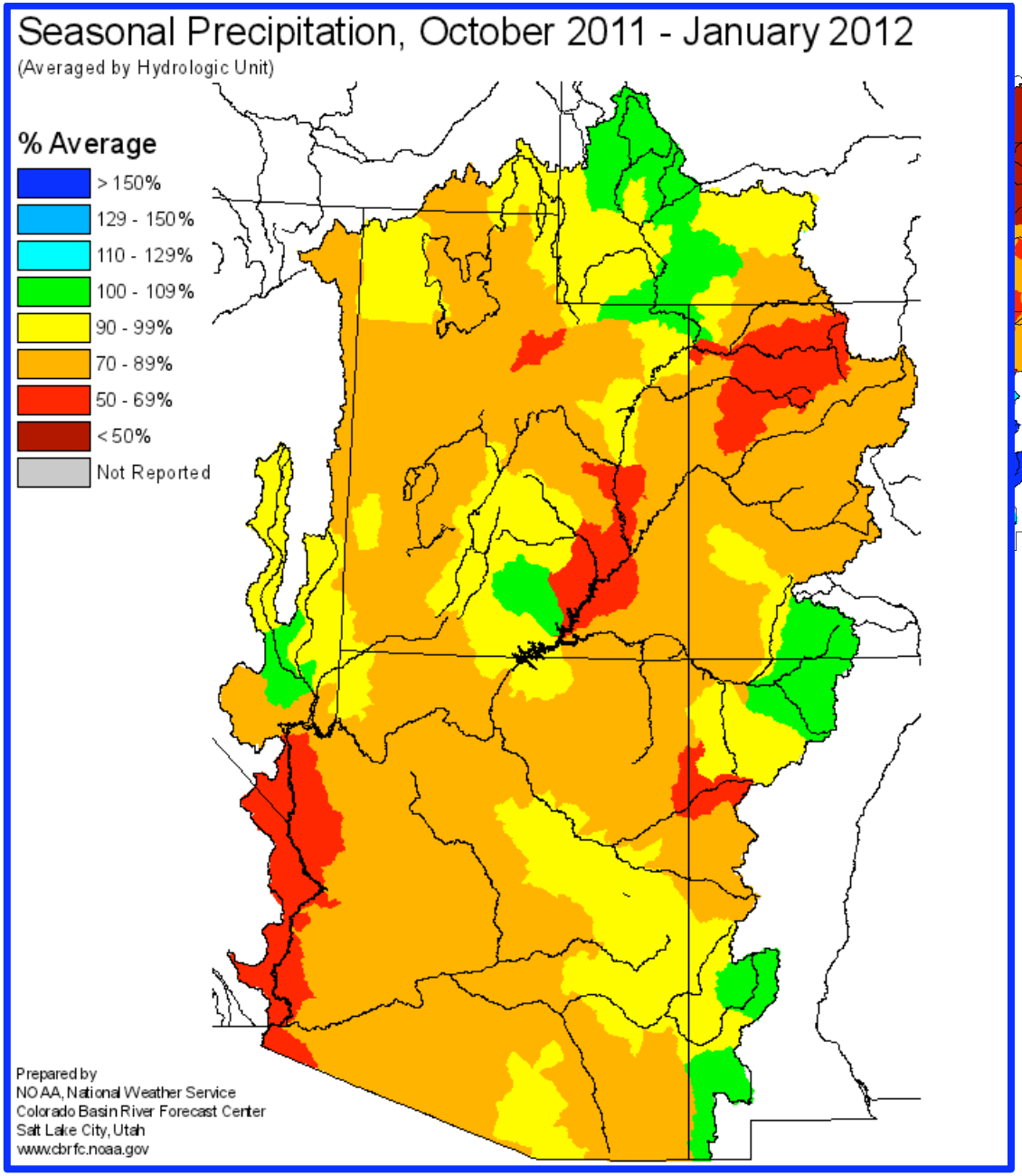
3. How does using the new period effect CBRFC forecasts and data on this webpage?
Answer: Long-lead water supply and peak flow forecasts generally use a combination of current conditions for snowpack and streamflow, a weather prediction, and the climatological distribution of precipitation and temperature. Thus long lead forecasts using the new average period will generally be lower than forecasts that used the previous 30 year period. The amount of the difference depends on the difference between the means and the duration of climatology assumed in the forecast period. For example, January 1 water supply forecasts require a climatological assumption for the months of January through July whereas April 1 water supply forecasts require only April through July. Thus the January 1 forecasts are influenced more greatly by the change in the 30 year period. An example illustrating this effect is available here
The snow time series plots on the CBRFC pages are now using the 1981-2010 period of record for calcualated statistics including the daily mean, median, maximum, and minimum snow water equalivants. CBRFC requires at least 20 years of record to calculate any of these statistics.

4. How is this change being coordinated with other forecast groups?
Answer: NOAA/NCDC has published new means for the meteorological 30 year means. The NRCS and other RFCs plan to begin using the 1981-2010 average period in 2013.

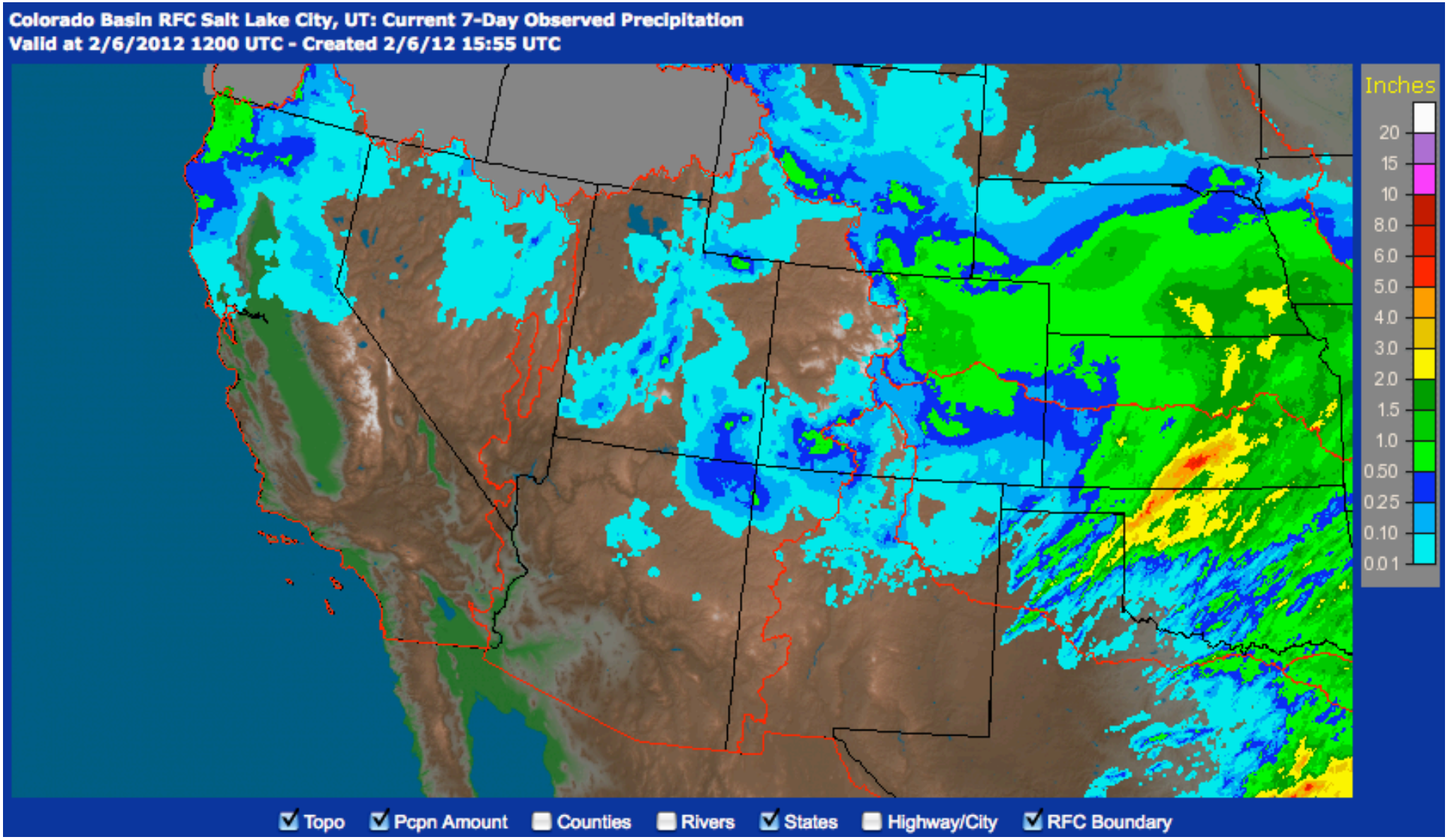
5. Where can I get more information?
Answer: CBRFC staff is here to help. Please feel free to contact us.



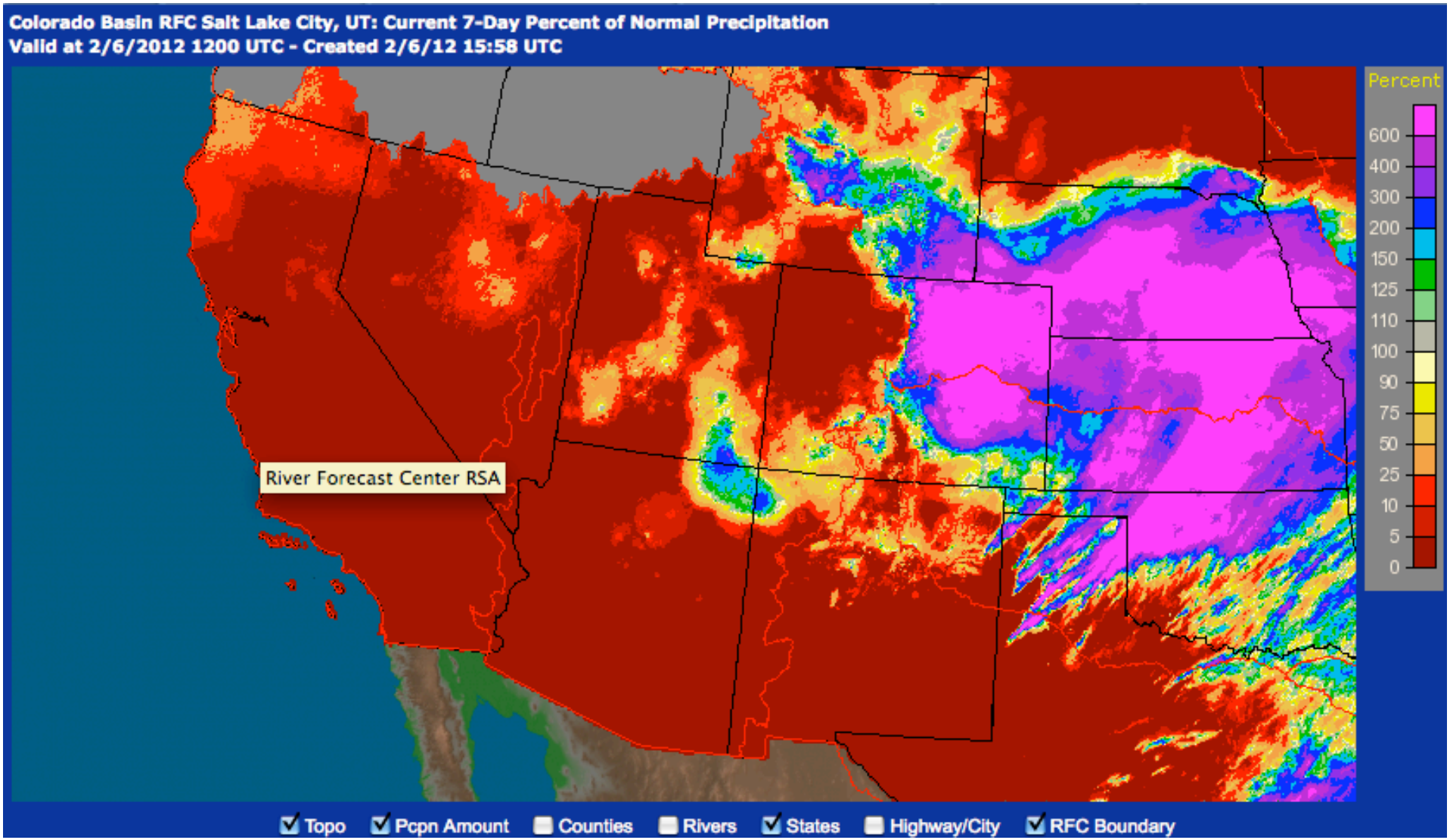




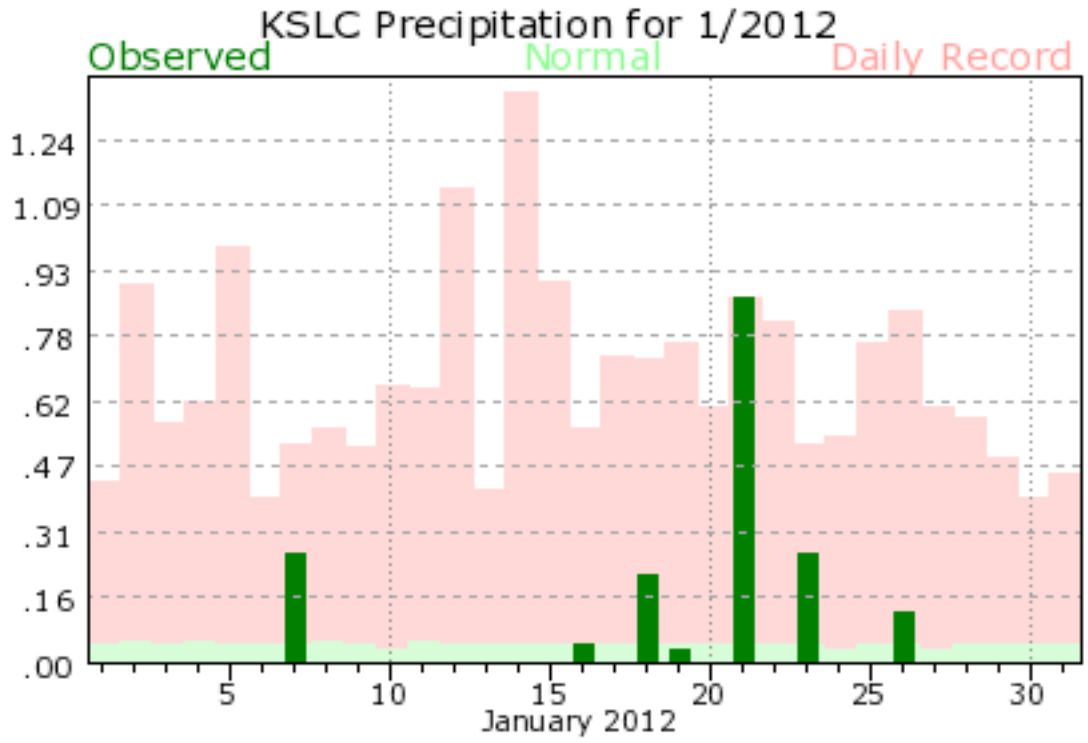
Web Reference: http://www.cbrfc.noaa.gov

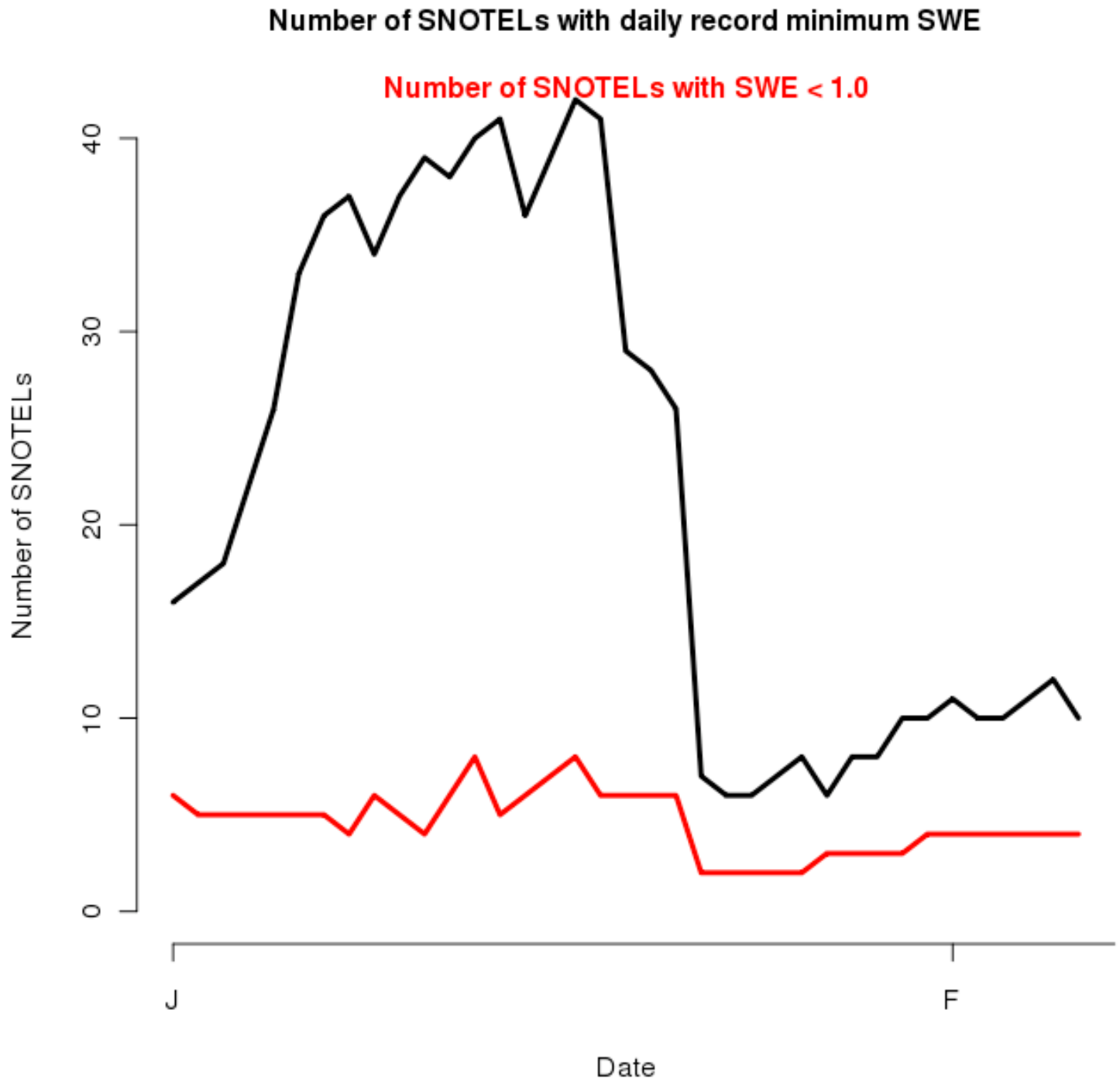


Web Reference: water.weather.gov/precip

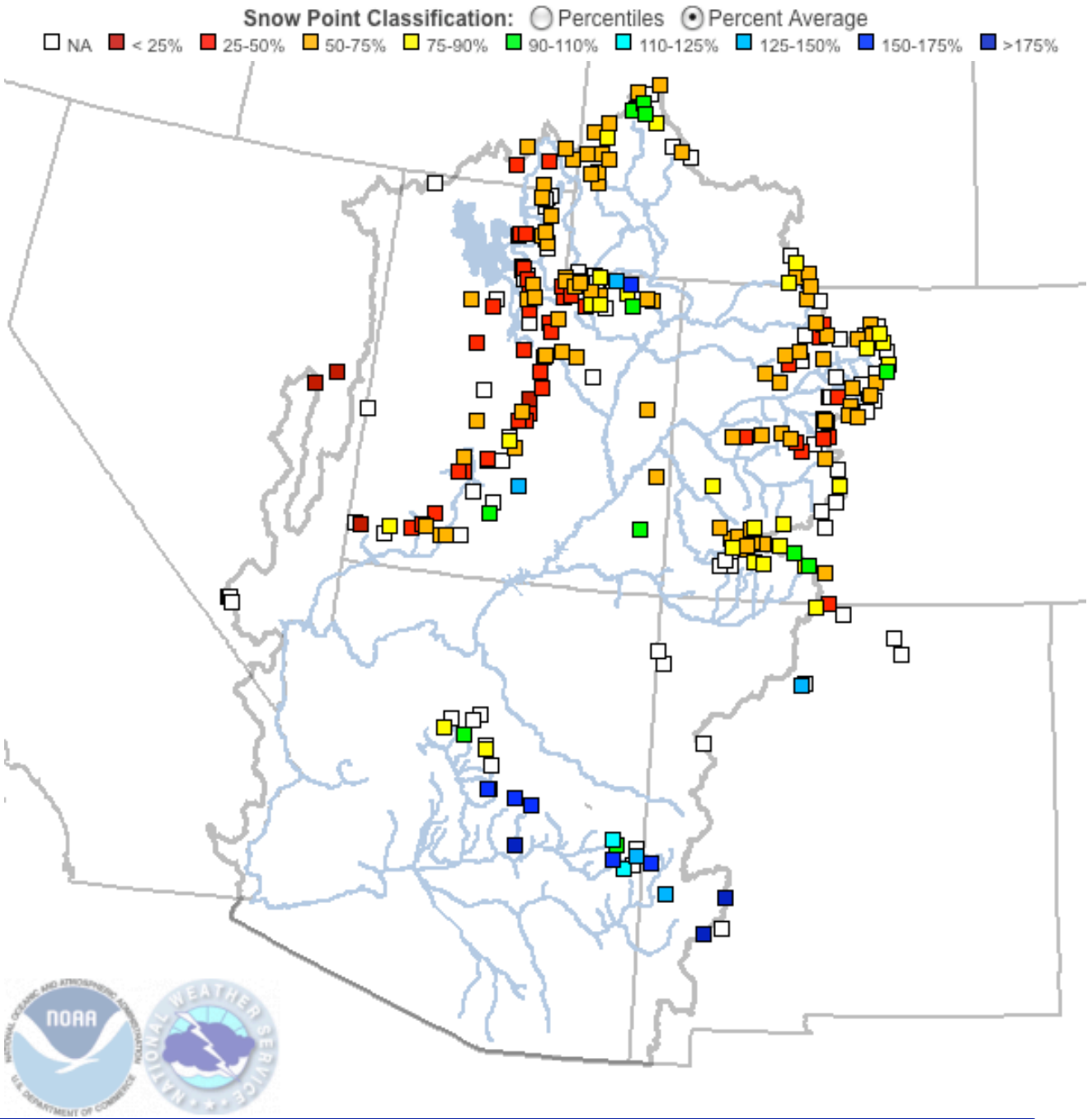

Colorado Basin RFC Salt Lake City, UT: Current 7-Day Percent of Normal Precipitation
Valid at 2/6/2012 1200 UTC - Created 2/6/12 15:58 UTC
Percent
600
400
300
200
150
125
110
100
90
75
50
25
10
5
0
River Forecast Center RSA
Topo
Pcpn Amount
Counties
Rivers
States
Highway/City
RFC Boundary

January 2011 Preciptiation




Number of SNOTELs with daily record minimum SWE
Number of SNOTELs with SWE < 1.0
Number of SNOTELs
0
10
20
30
40
J
F
Date

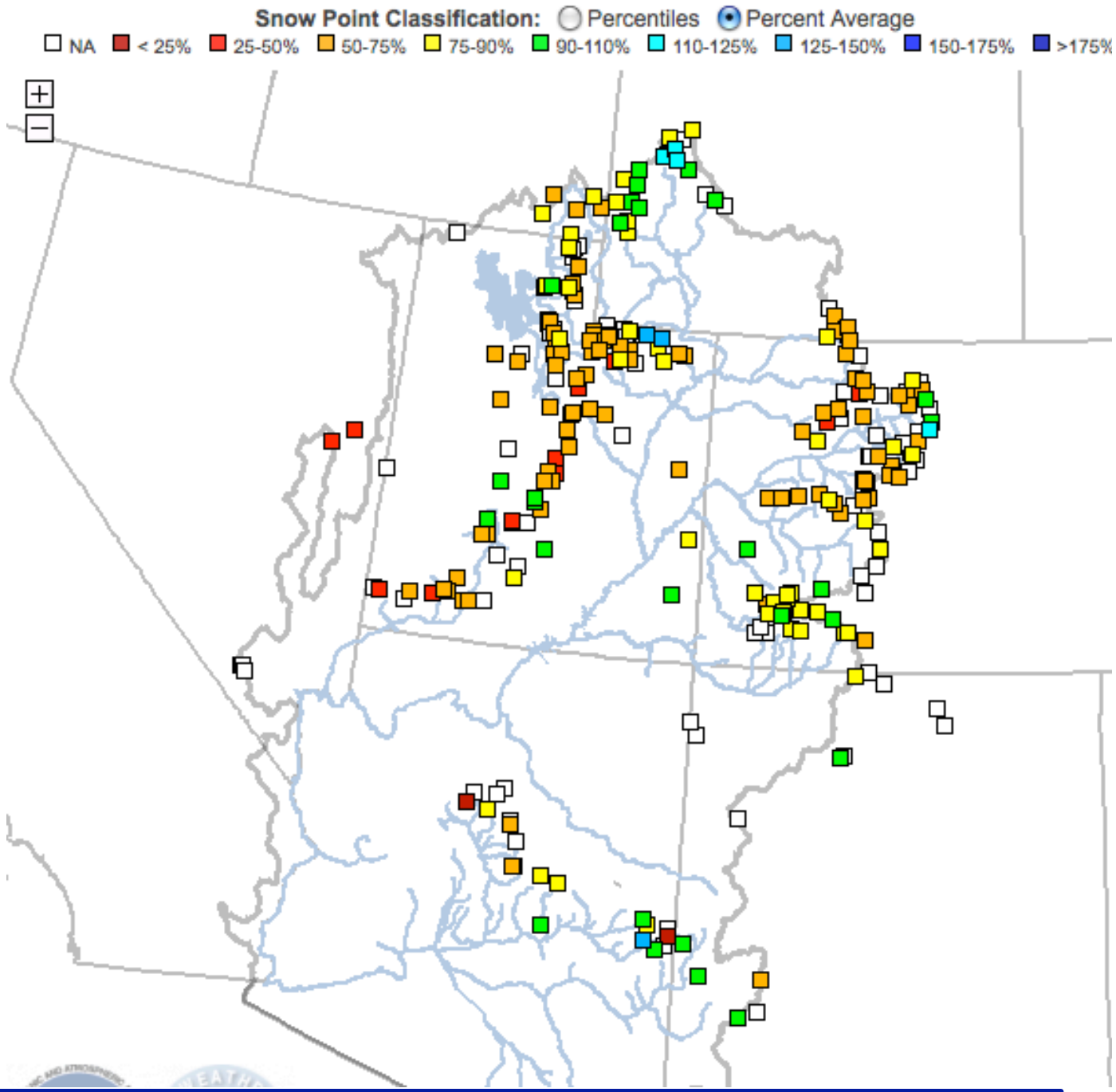
Snow



January 5, 2012

Web Reference: http://www.cbrfc.noaa.gov/gmap/gmapm.php?scon=checked

Snow



February 6, 2012

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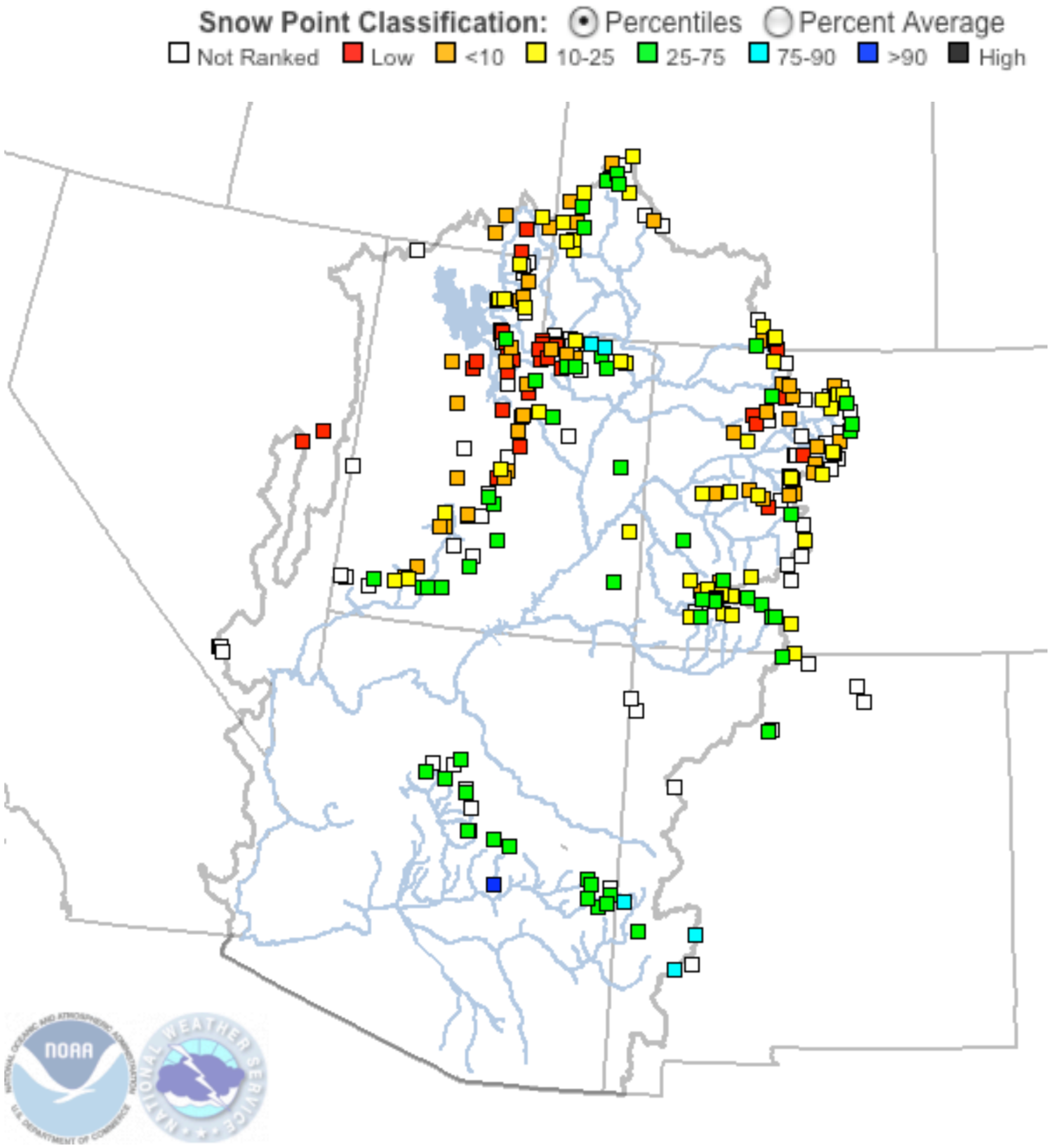
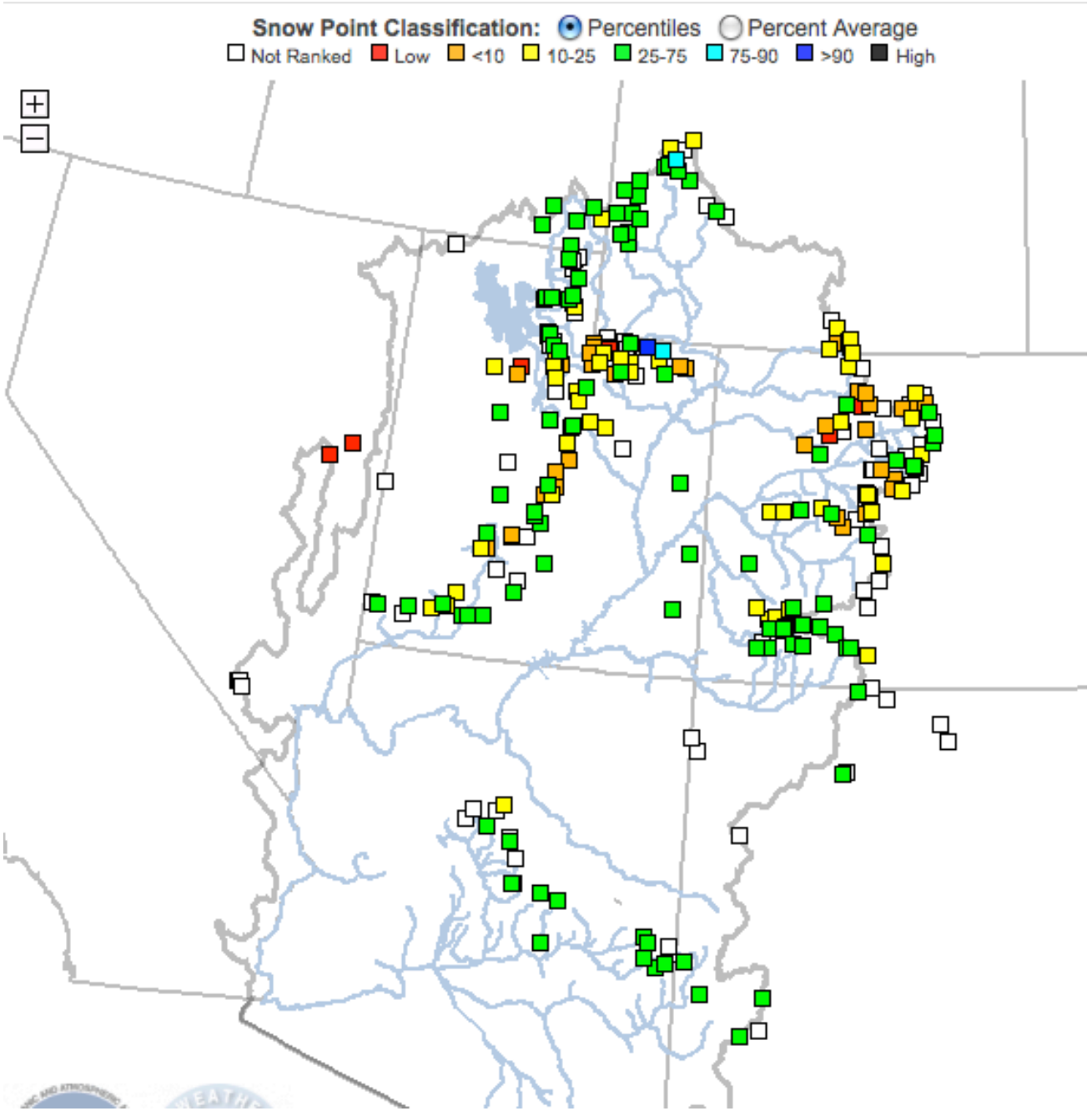
Snow



January 5, 2012

Web Reference: http://www.cbrfc.noaa.gov/gmap/gmapm.php?scon=checked

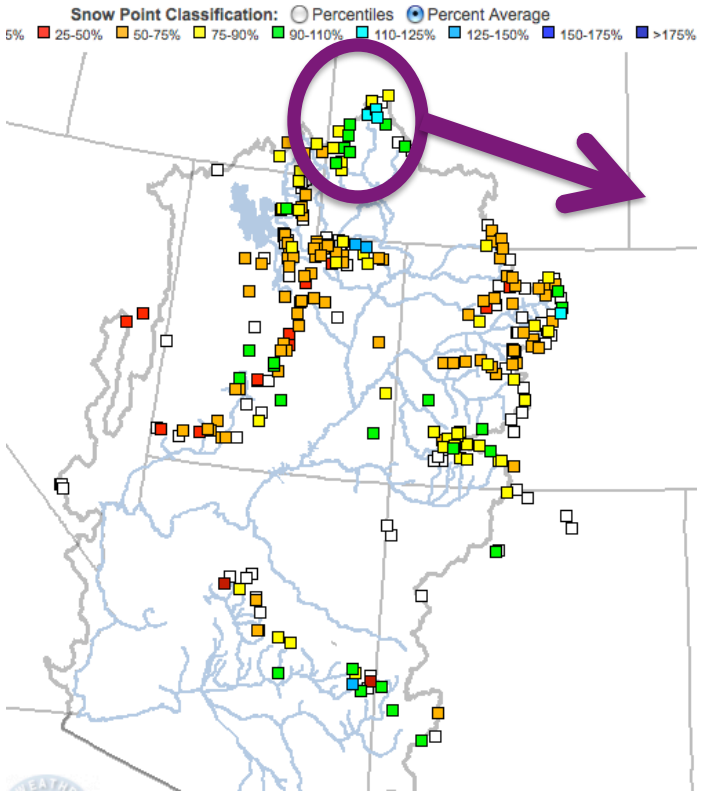
Snow

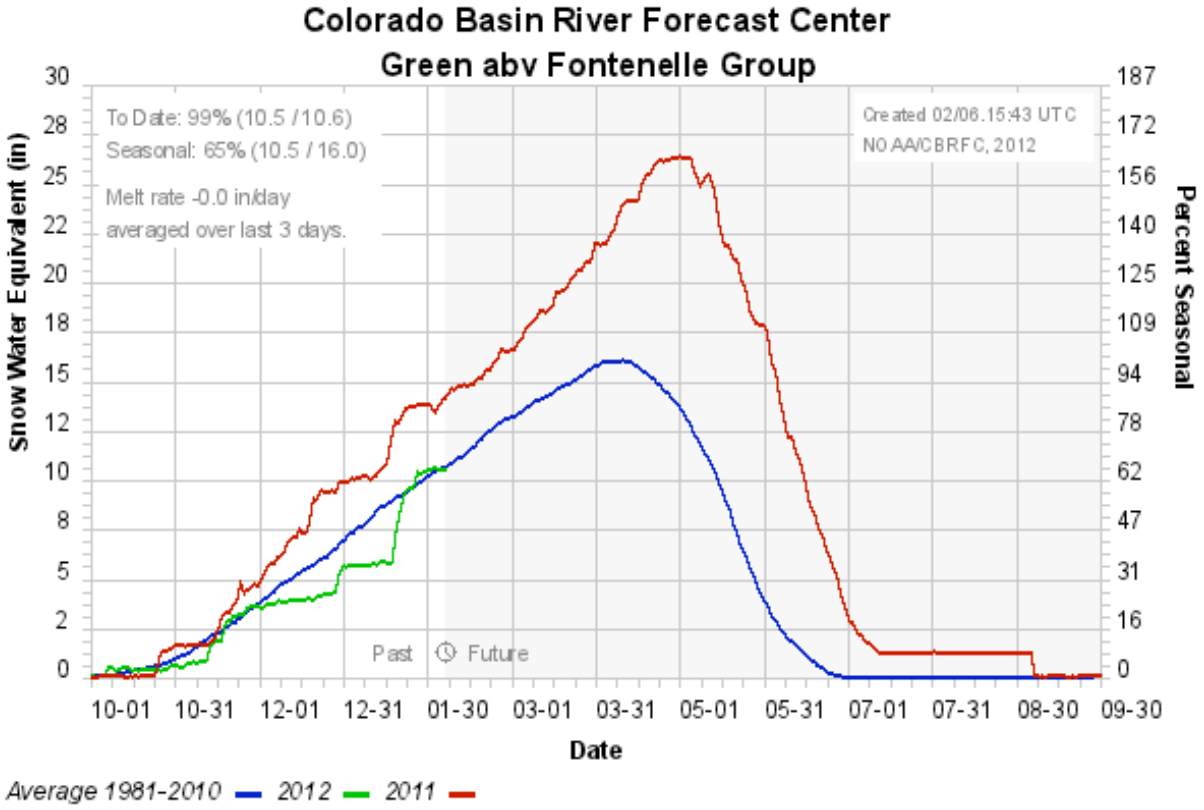


February 6, 2012

Web Reference: http://www.cbrfc.noaa.gov/gmap/gmapm.php?scon=checked

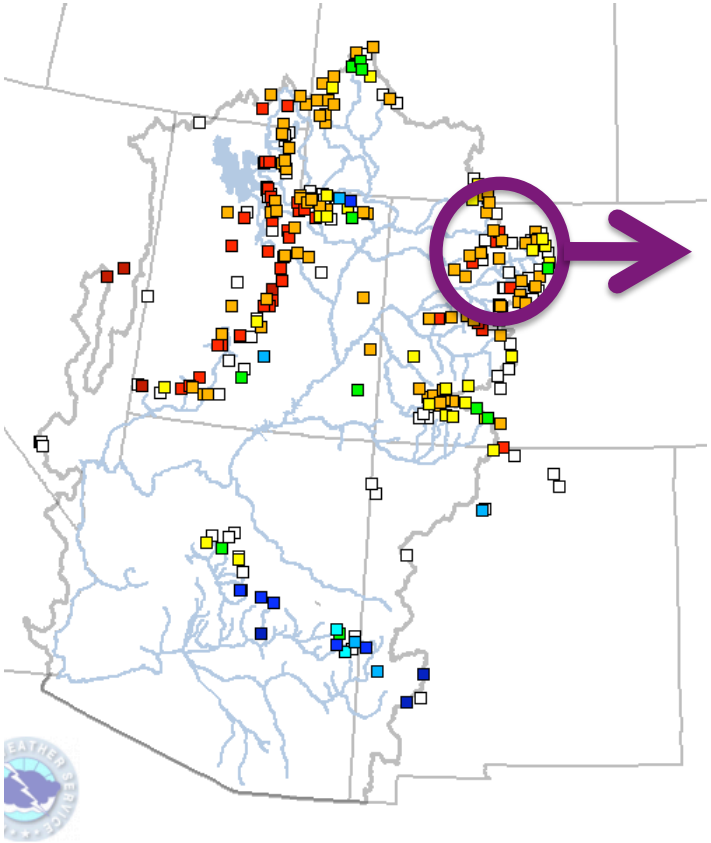
Snow: Upper Green Basin (Fontelle)

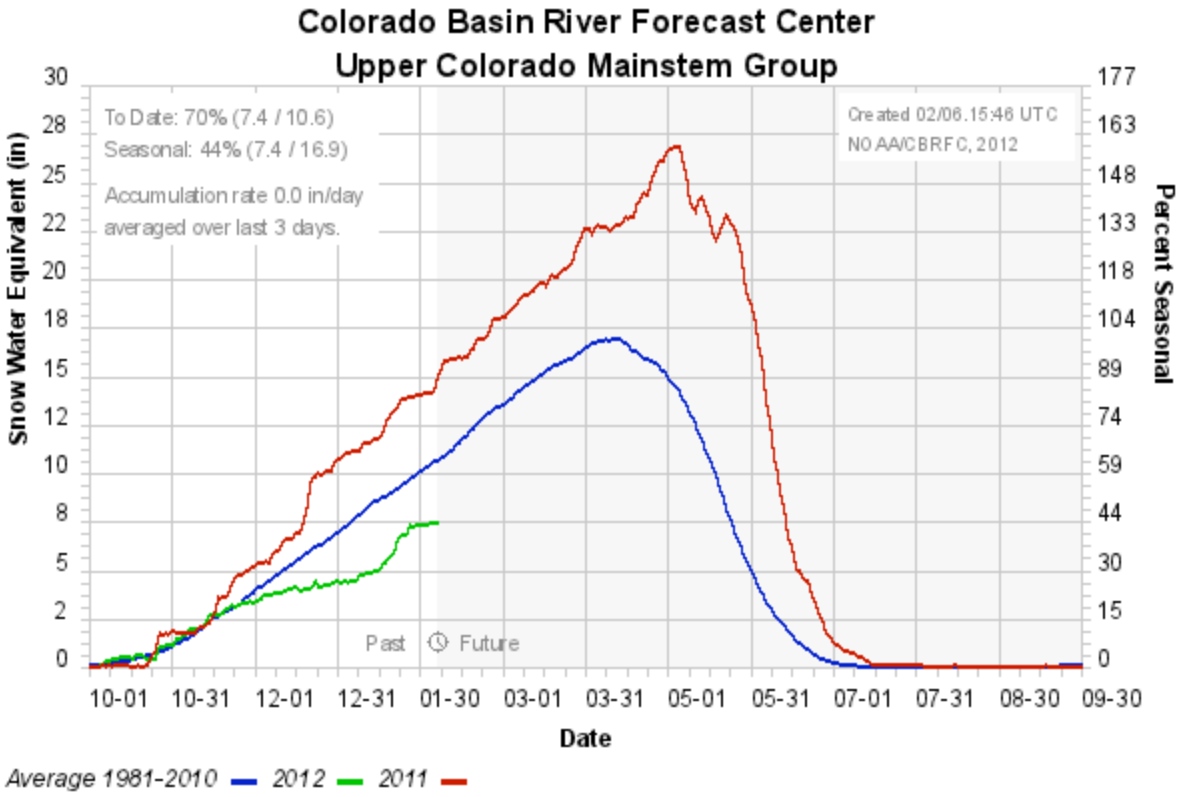




Web Reference: http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open

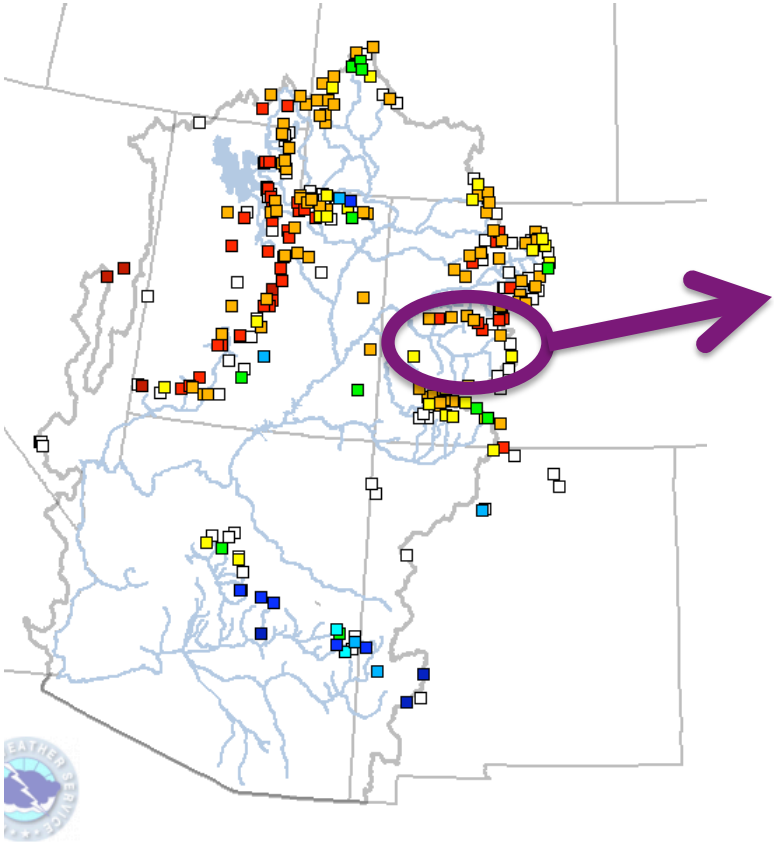
Snow:
Colorado Mainstem (above Cameo)

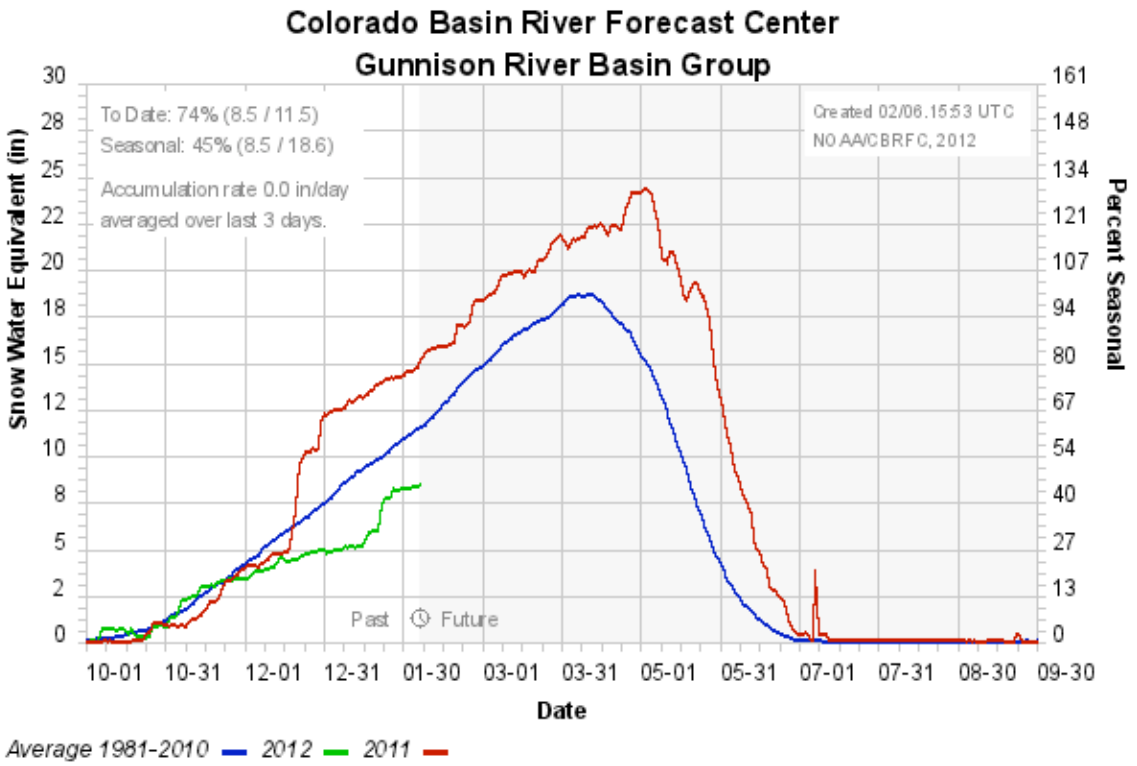




Web Reference: http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open

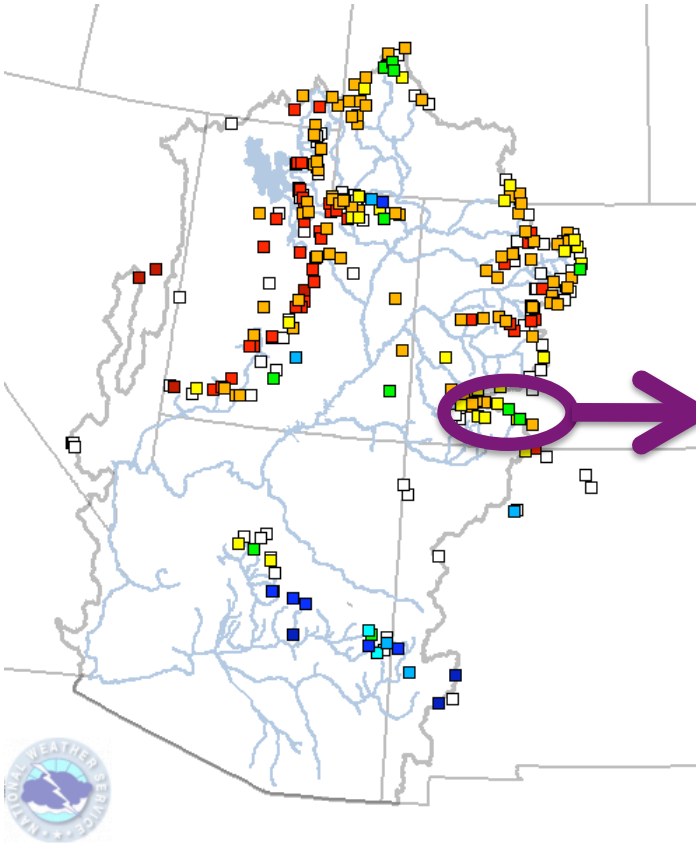
Snow:
Gunnison Basin

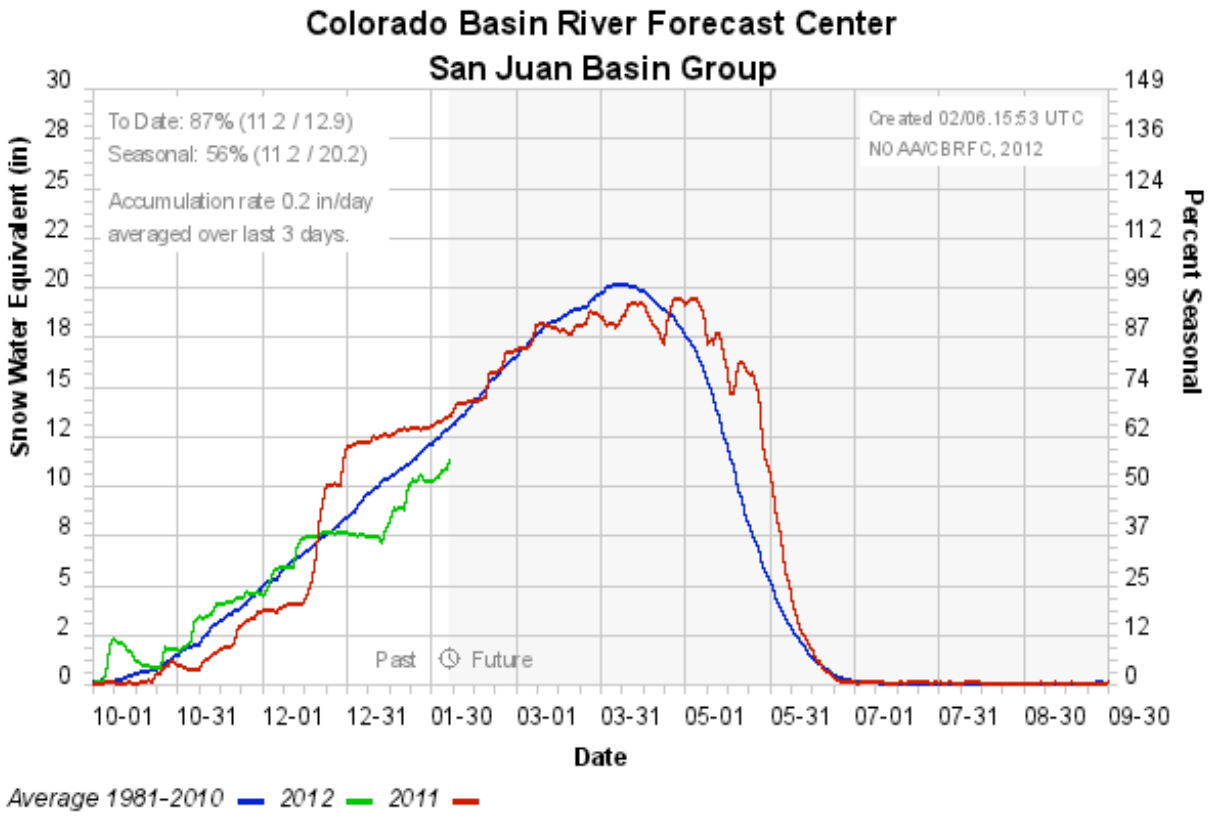




Web Reference: http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open

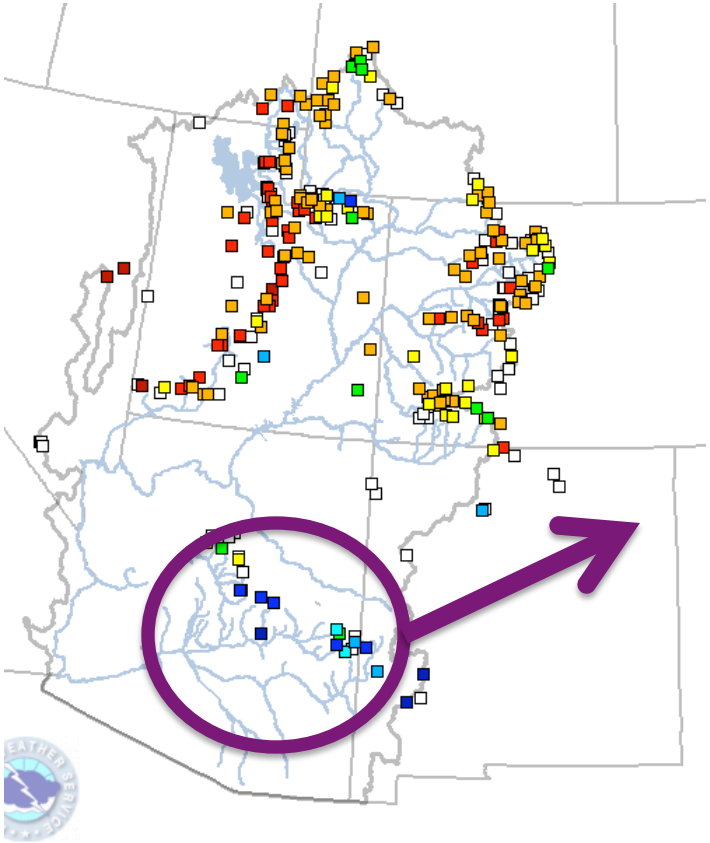
Snow:
San Juan Basin

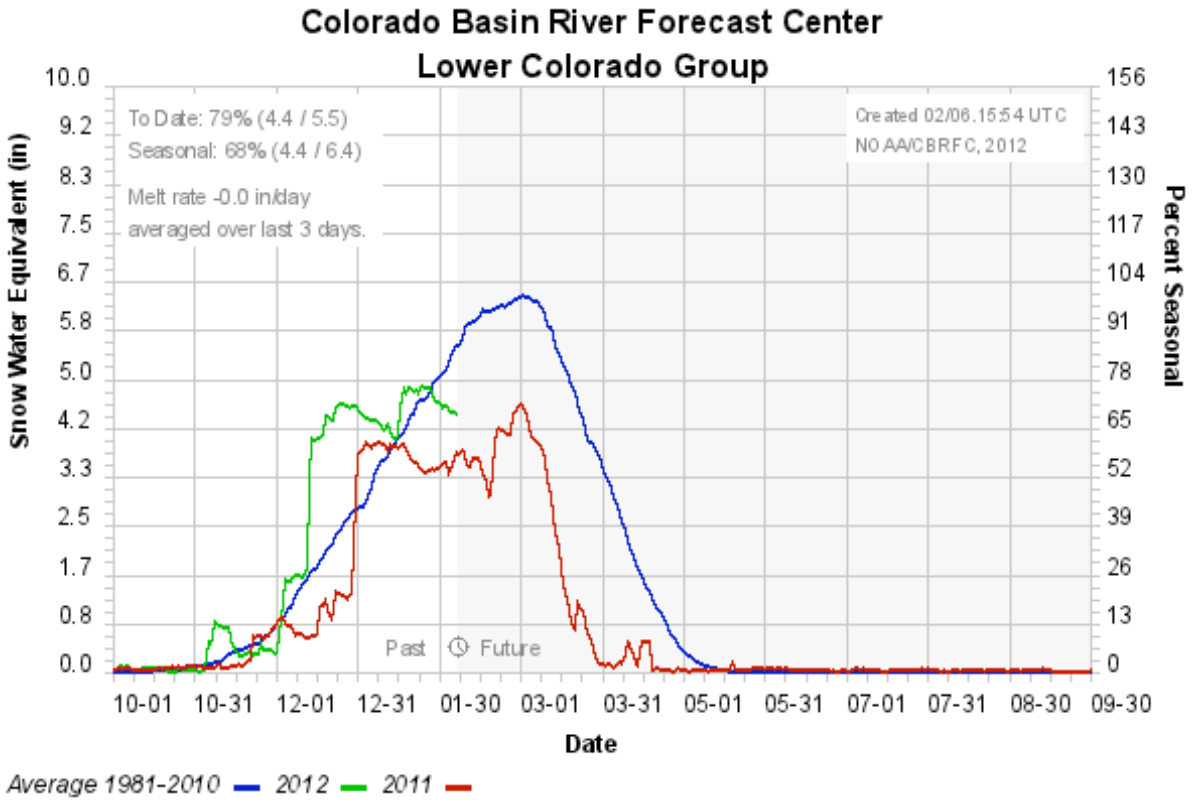




Web Reference: http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open

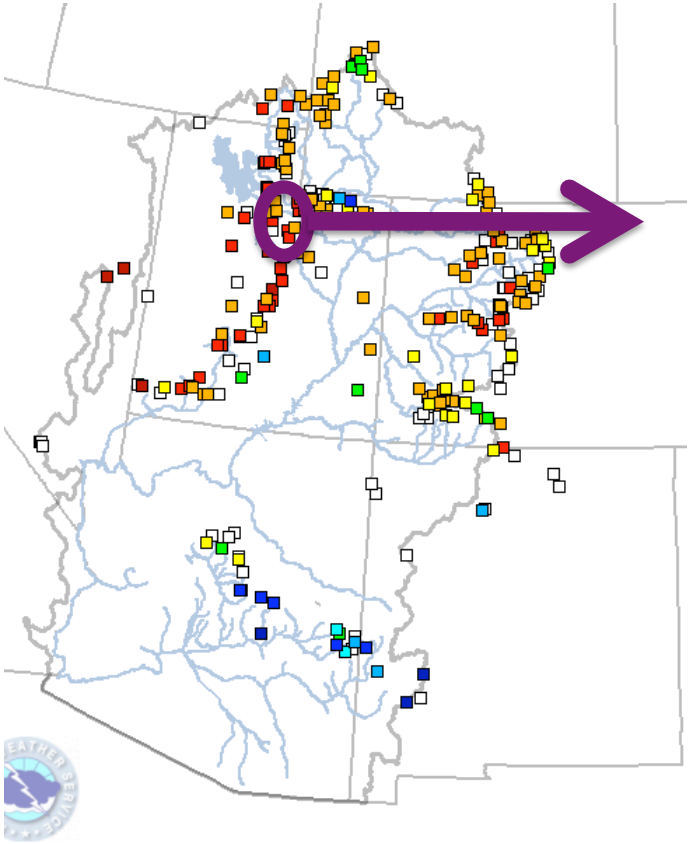
Snow:
Lower Colorado

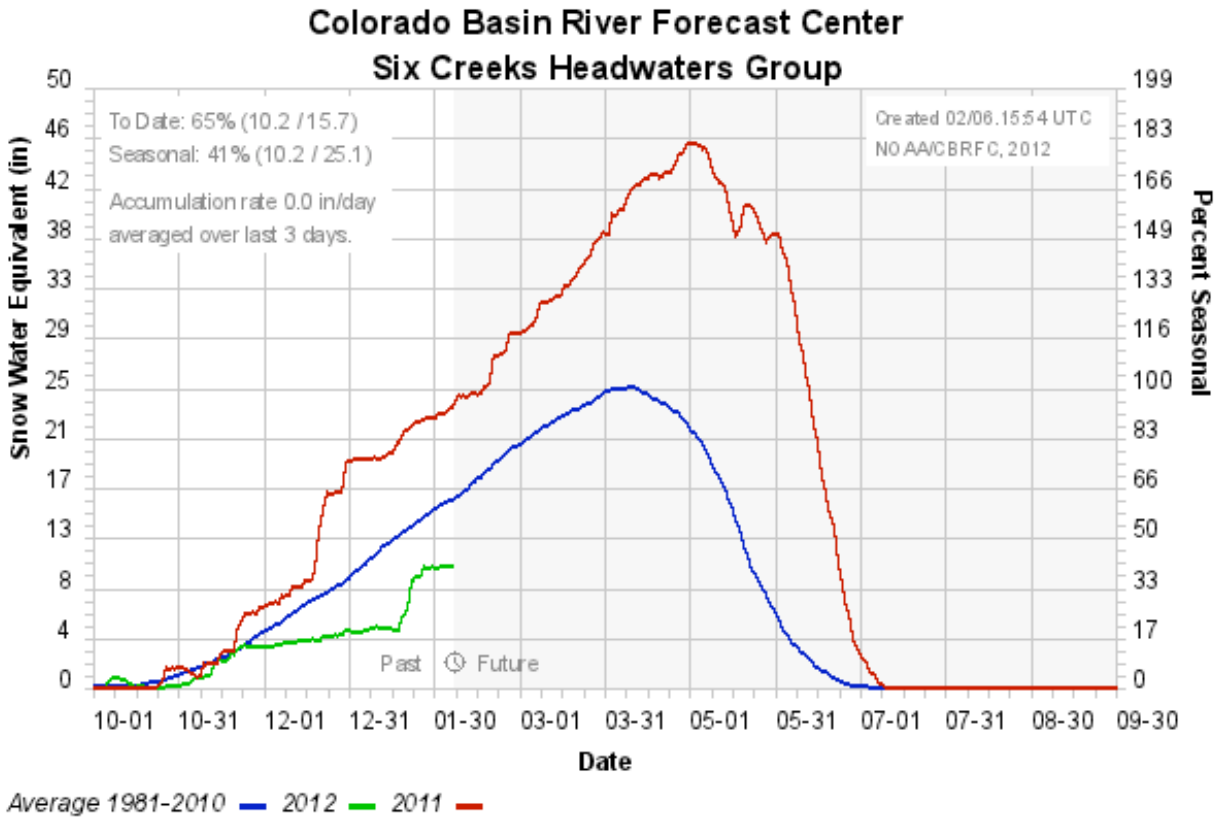




Web Reference: http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open

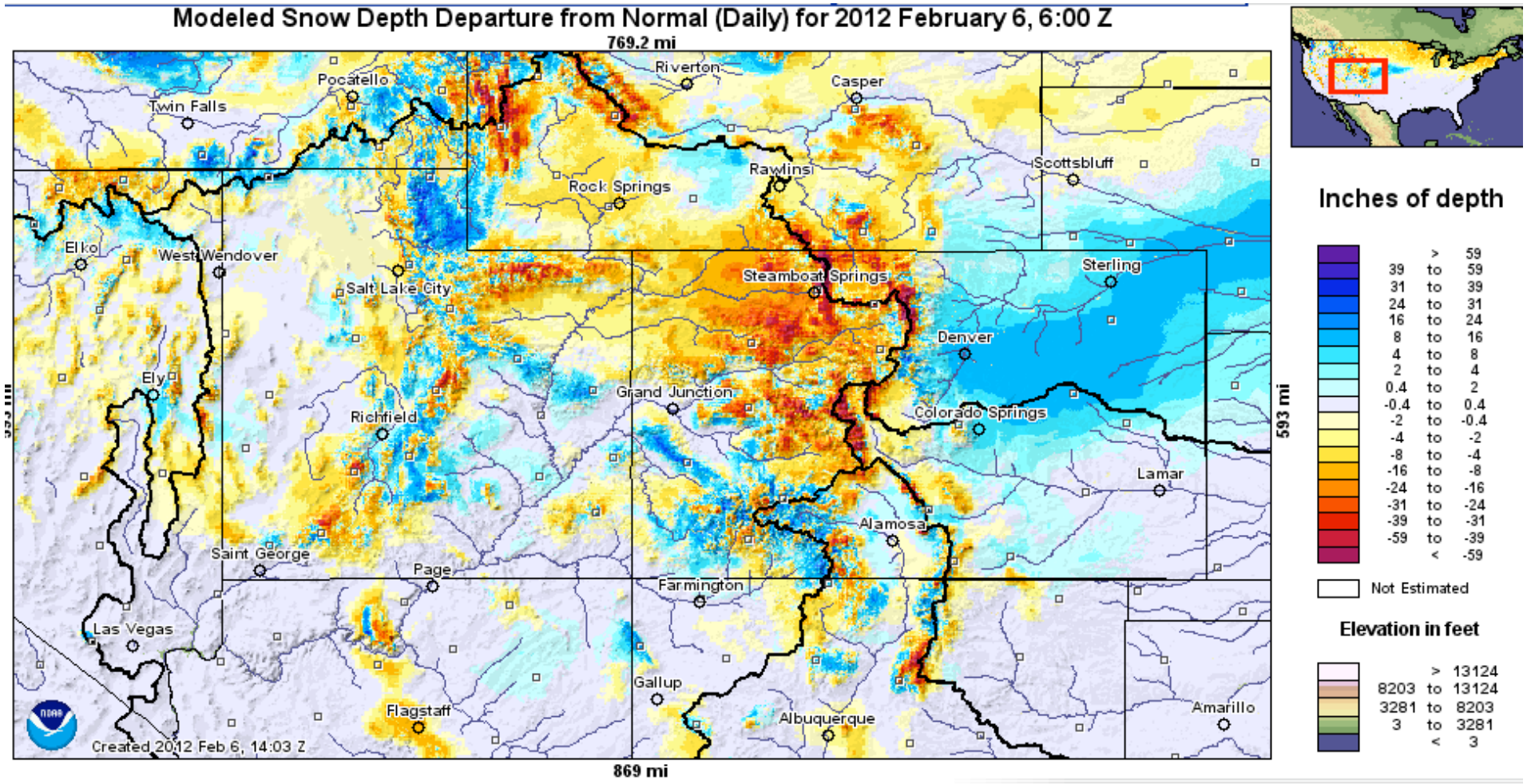
Snow:
Six Creeks in Salt Lake County





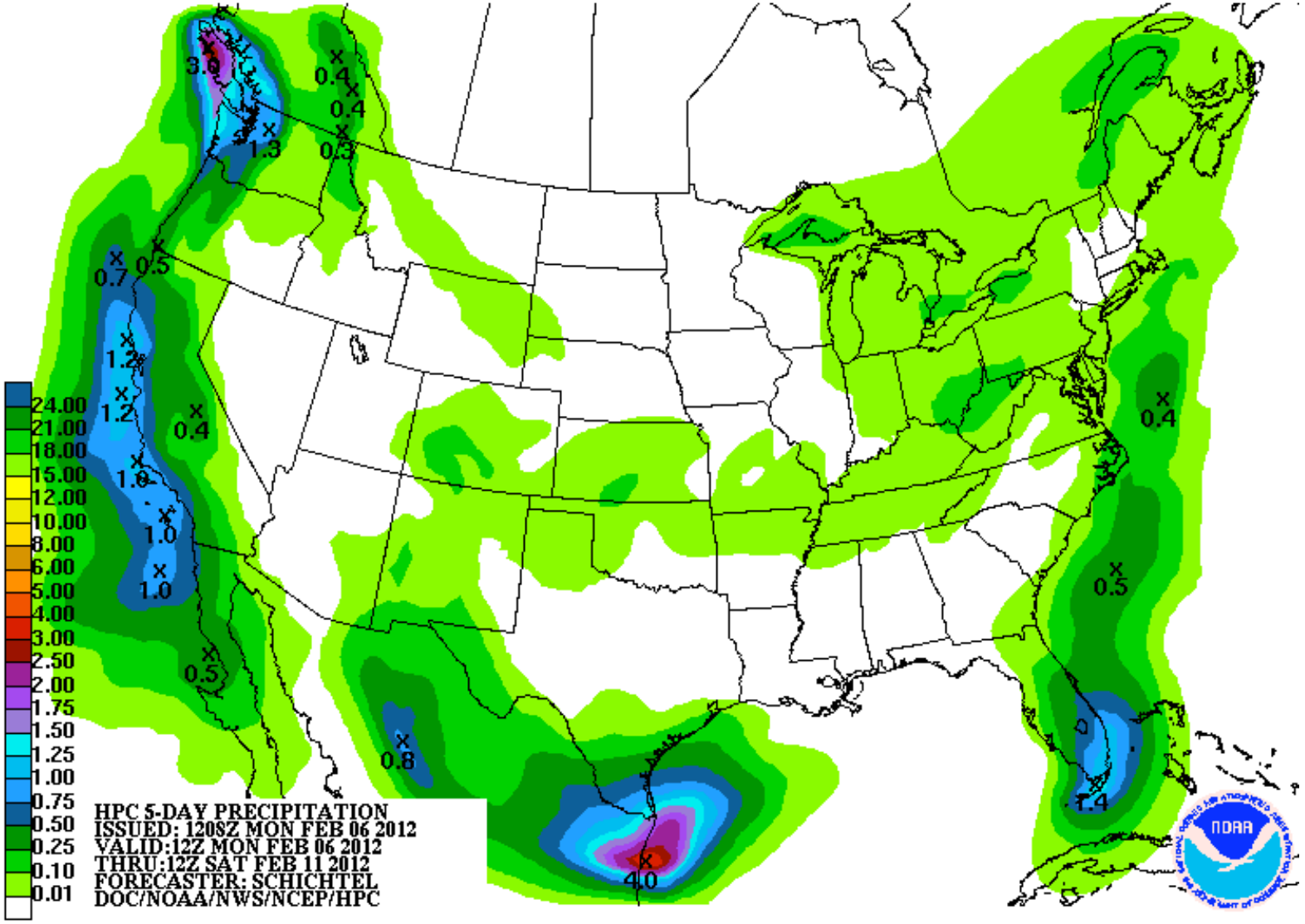
Web Reference: http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open

Snow Maps



Web Reference: http://www.nohrsc.nws.gov

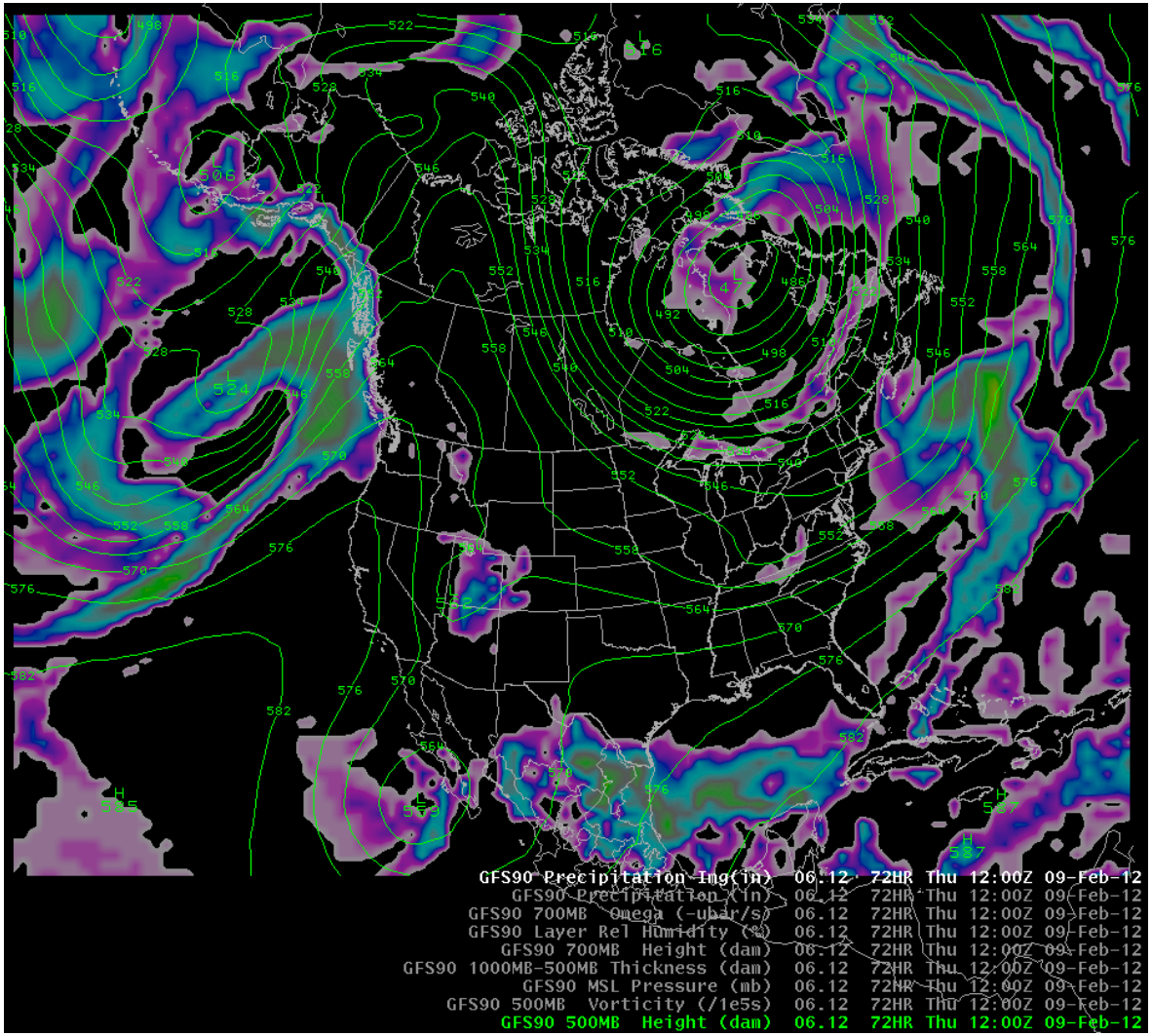
Forecast Precipitation



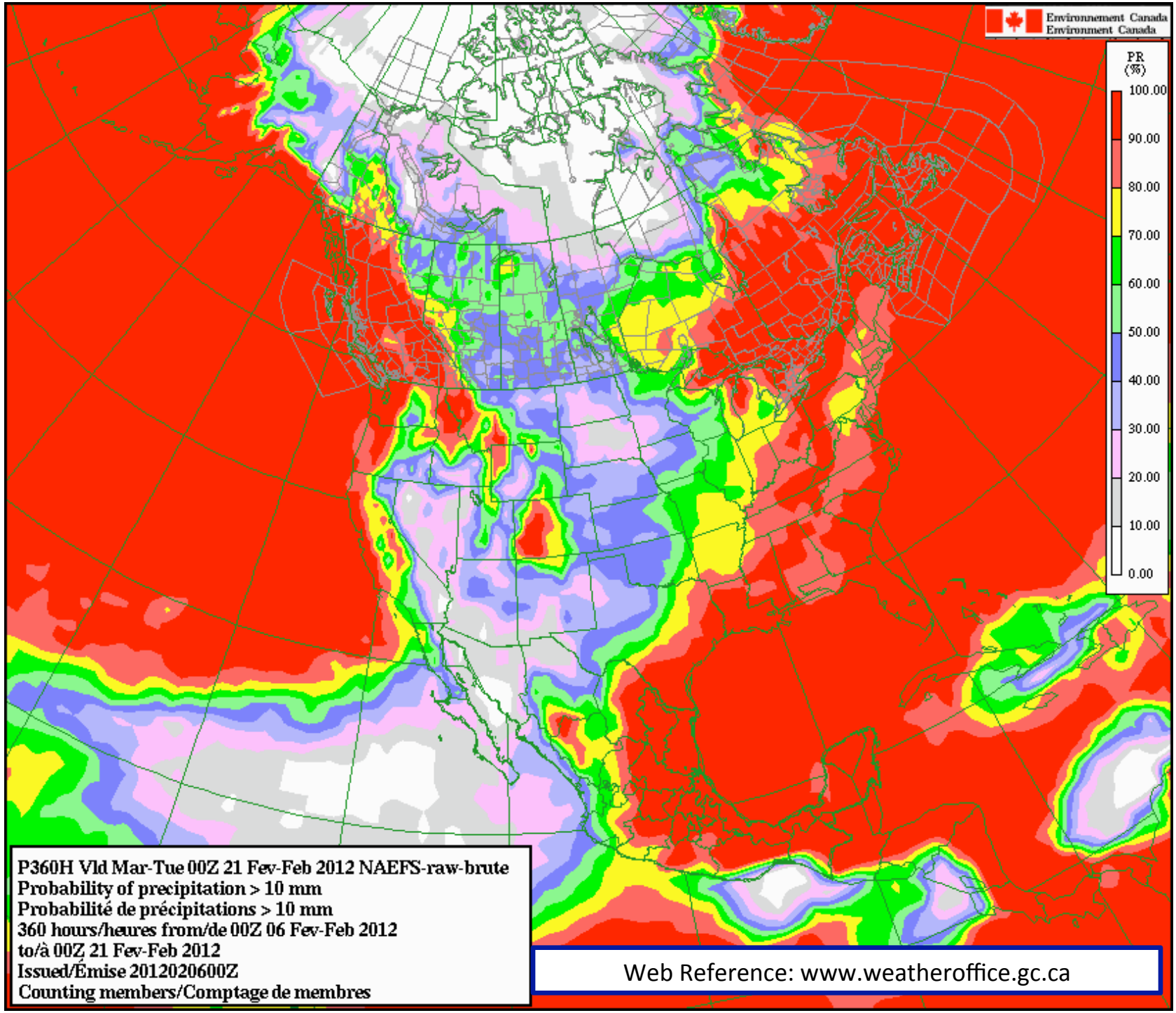
Web Reference: www.hpc.noaa.gov

Forecast Precipitation

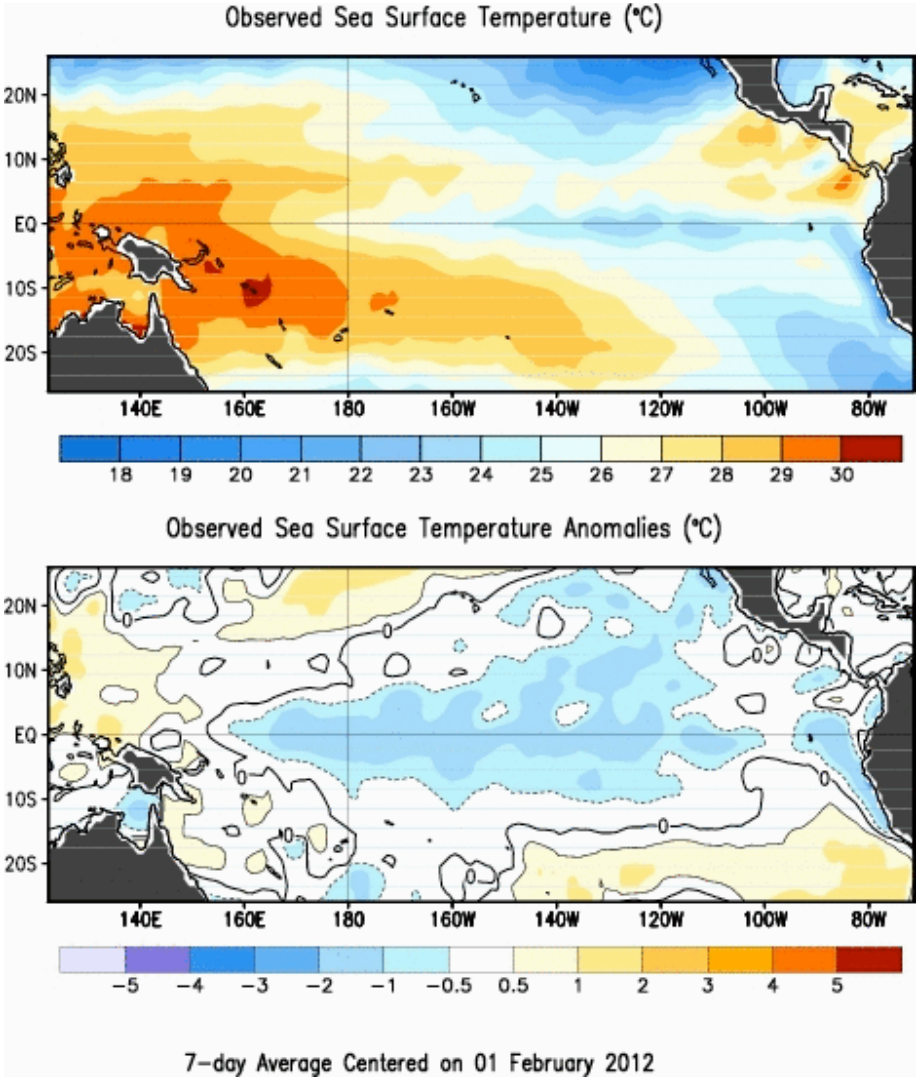
- Long wave ridge continues to prevail over western United States
- Two very small storms:
  - Thursday
  - Early next week
  - Negligible precipitation expected from both

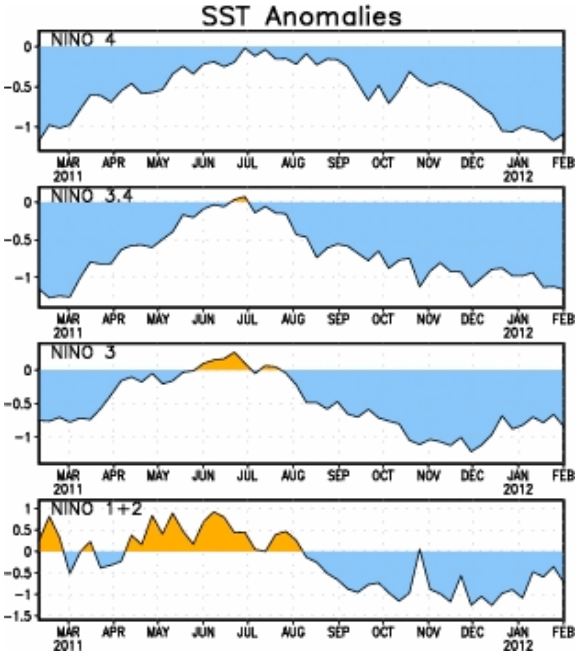


Web Reference: www.hpc.noaa.gov

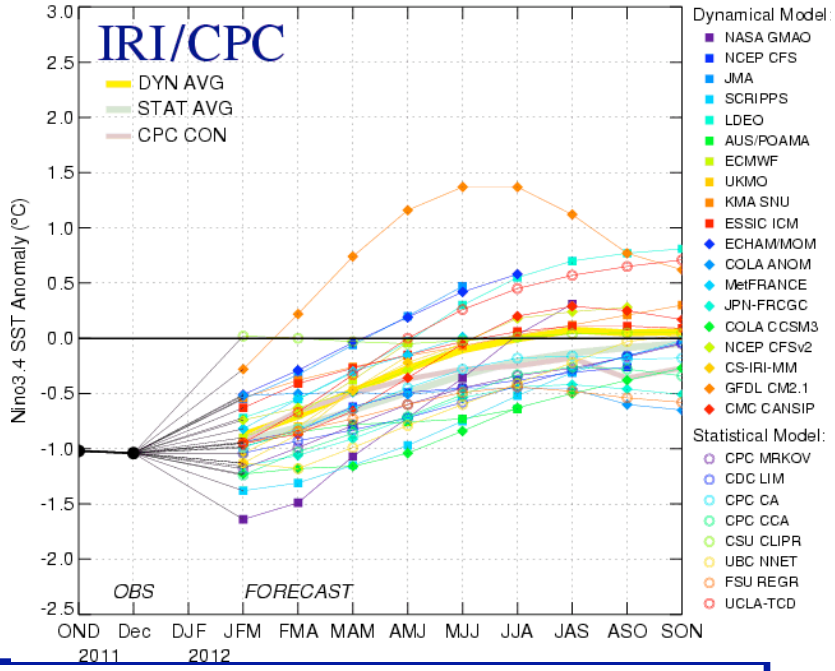

Environnement Canada
Environment Canada
PR
(%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
P360H Vld Mar-Tue 00Z 21 Fev-Feb 2012 NAEFS-raw-brute
Probability of precipitation > 10 mm
Probabilité de précipitations > 10 mm
360 hours/heures from/de 00Z 06 Fev-Feb 2012
to/à 00Z 21 Fev-Feb 2012
Issued/Émise 2012020600Z
Counting members/Comptage de membres
Web Reference: www.weatheroffice.gc.ca

La Nina Update

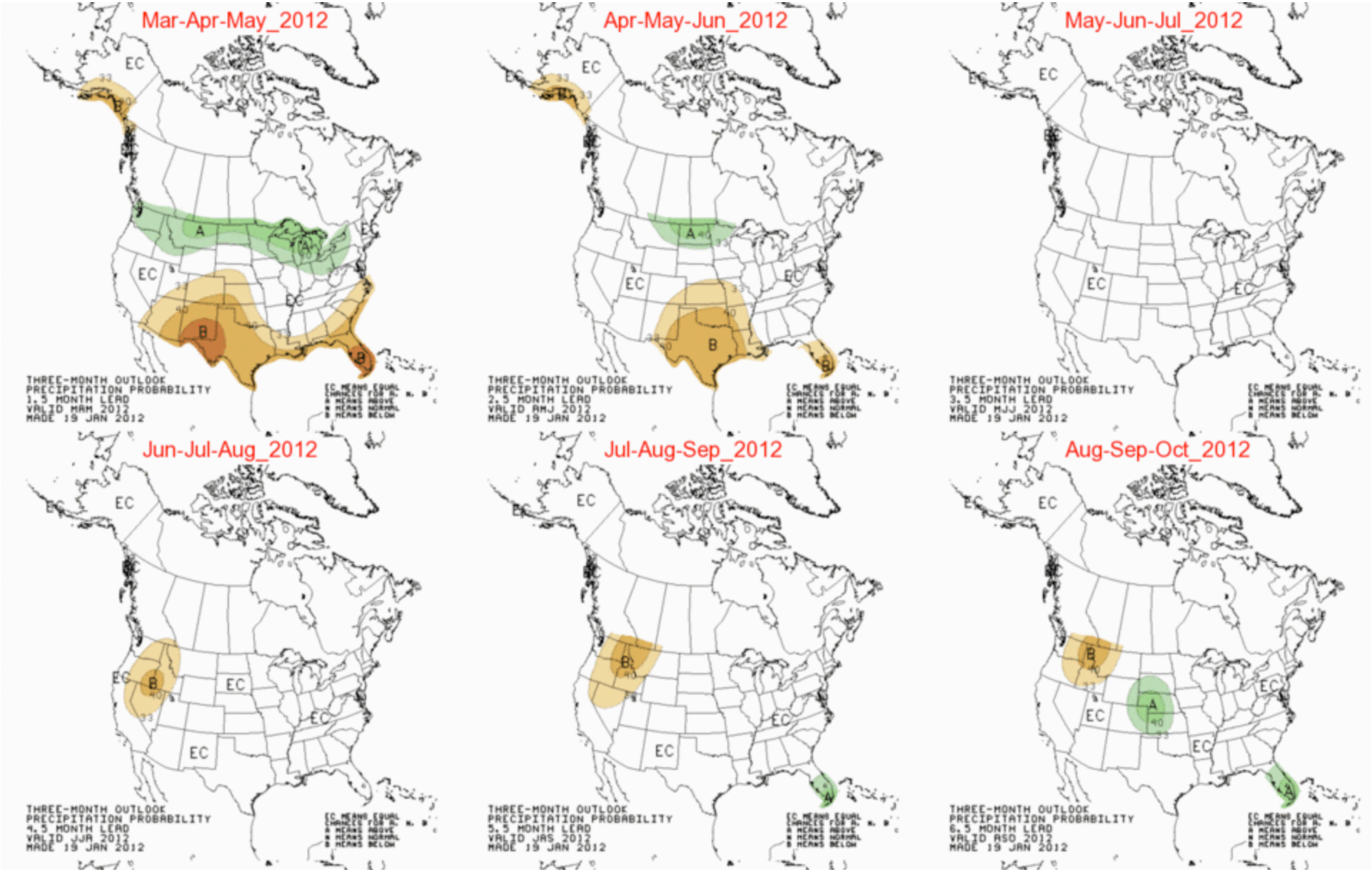




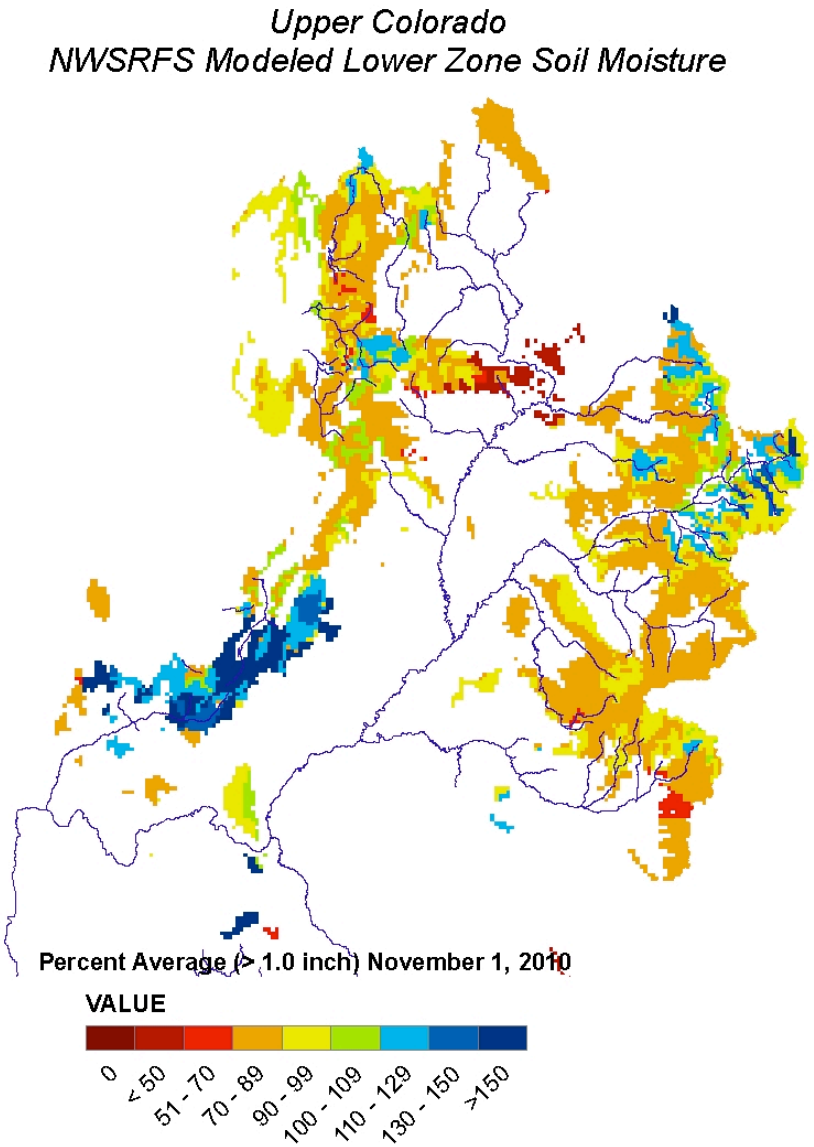
Mid-Jan 2012 Plume of Model ENSO Predictions

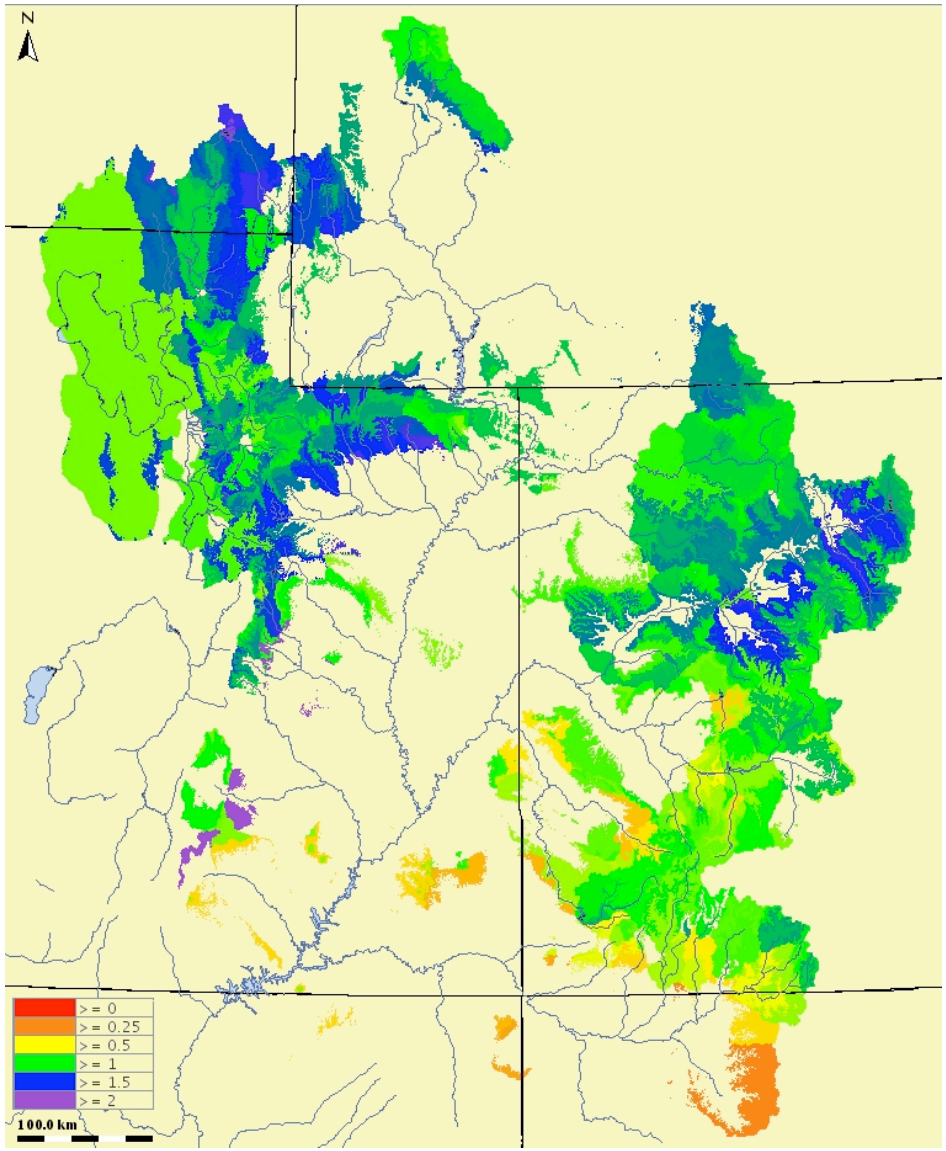


Web Reference: http://www.cpc.noaa.gov and iri.columbia.edu/climate/ENSO


Mar-Apr-May_2012
THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
1.5 MONTH LEAD
VALID MAM 2012
MADE 19 JAN 2012
Apr-May-Jun_2012
THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
2.5 MONTH LEAD
VALID AMJ 2012
MADE 19 JAN 2012
May-Jun-Jul_2012
THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
3.5 MONTH LEAD
VALID MJJ 2012
MADE 19 JAN 2012
Jun-Jul-Aug_2012
THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
4.5 MONTH LEAD
VALID JJA 2012
MADE 19 JAN 2012
Jul-Aug-Sep_2012
THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
5.5 MONTH LEAD
VALID JAS 2012
MADE 19 JAN 2012
Aug-Sep-Oct_2012
THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
6.5 MONTH LEAD
VALID ASO 2012
MADE 19 JAN 2012

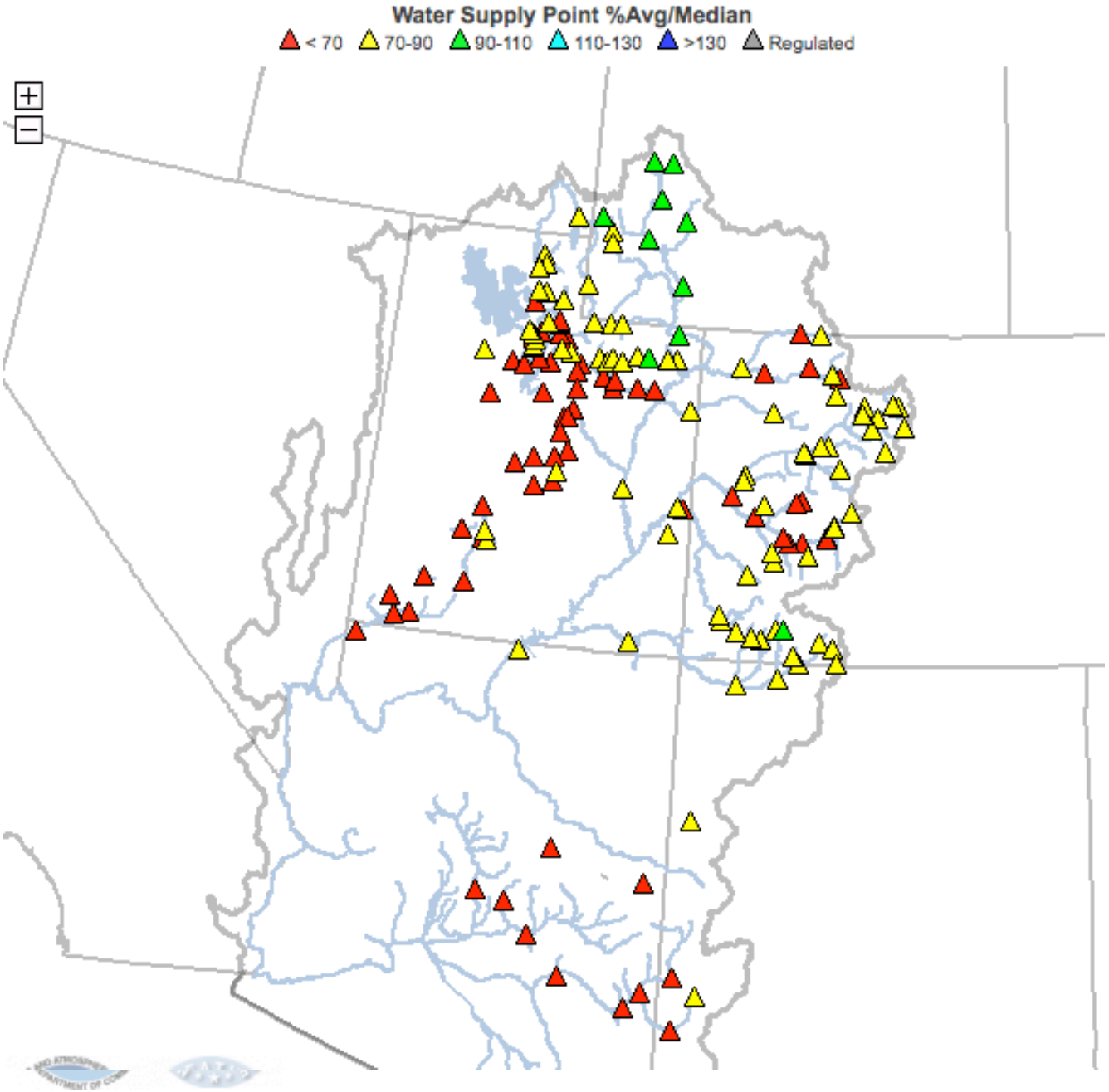
Soil Moisture





February 1, 2012
Water Supply
Forecasts

Highlights:
- Below average/ median forecasts nearly everywhere
- Major factors:
  - Low snow in upper and Great Basins
  - La Nina and low antecedent conditions in lower basin



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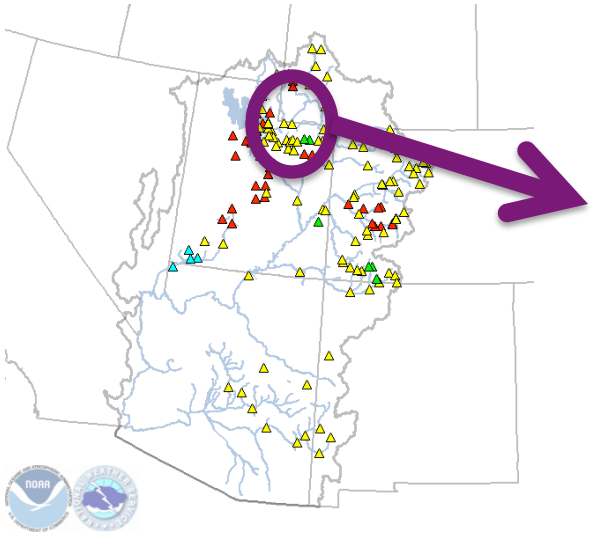


Seasonal Water Supply Forecast ⓘ

Forecast Period: Apr-Jul

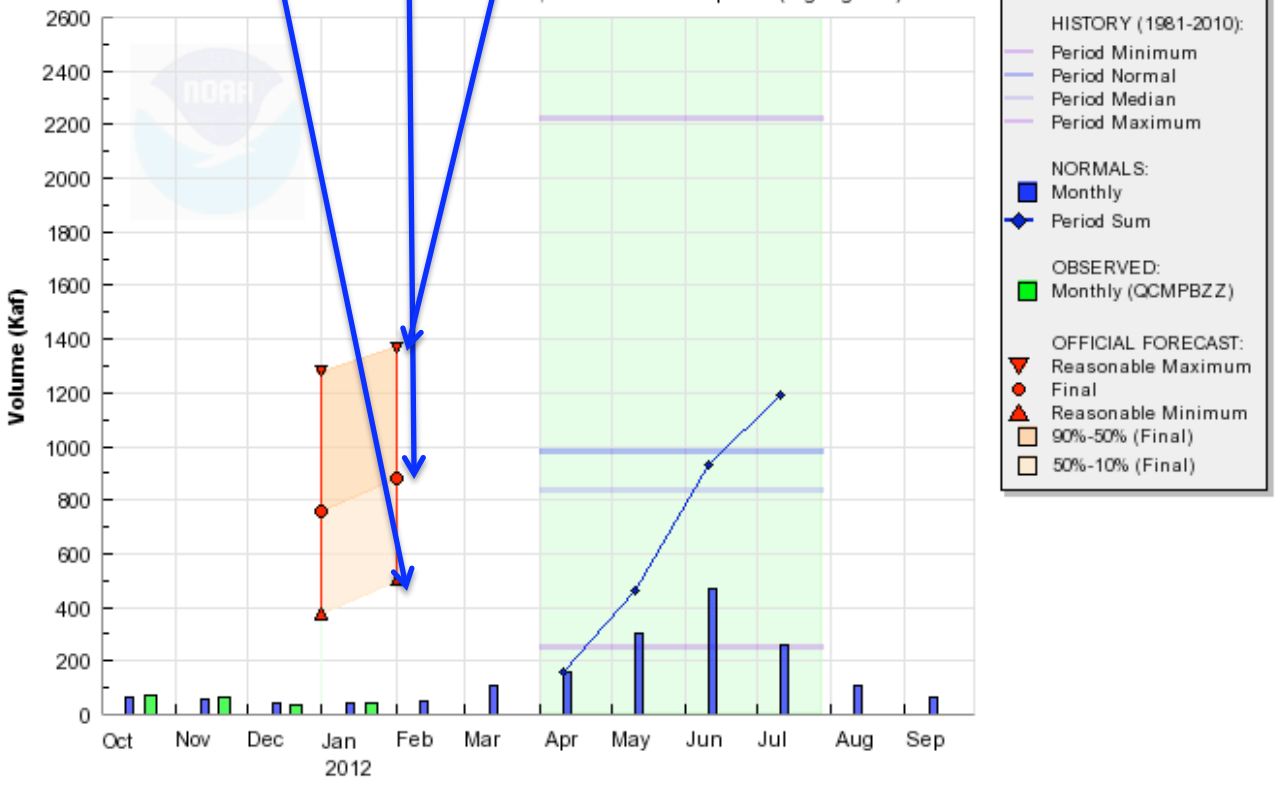
880 kaf	92%	90%
50% Exceedence (Official Forecast)	of Historical Median	of Historical Mean
500 kaf 90% Exceedence	**1370 kaf** 10% Exceedence	**47th of 72** Official Historical Flows

Forecast Issued: Feb 1 2012

View Water Supply Forecast Plot

GREEN - FLAMING GORGE RES, FLAMING GORGE DAM, AT (GRNU1)

Water Year 2012, Forecast Period Apr-Jul (highlighted)



CBRFC/NWS/NOAA 02/06/12 16:06:10 UTC

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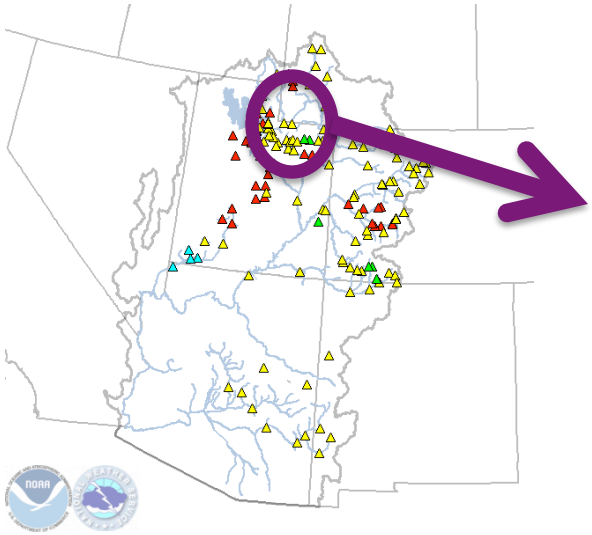
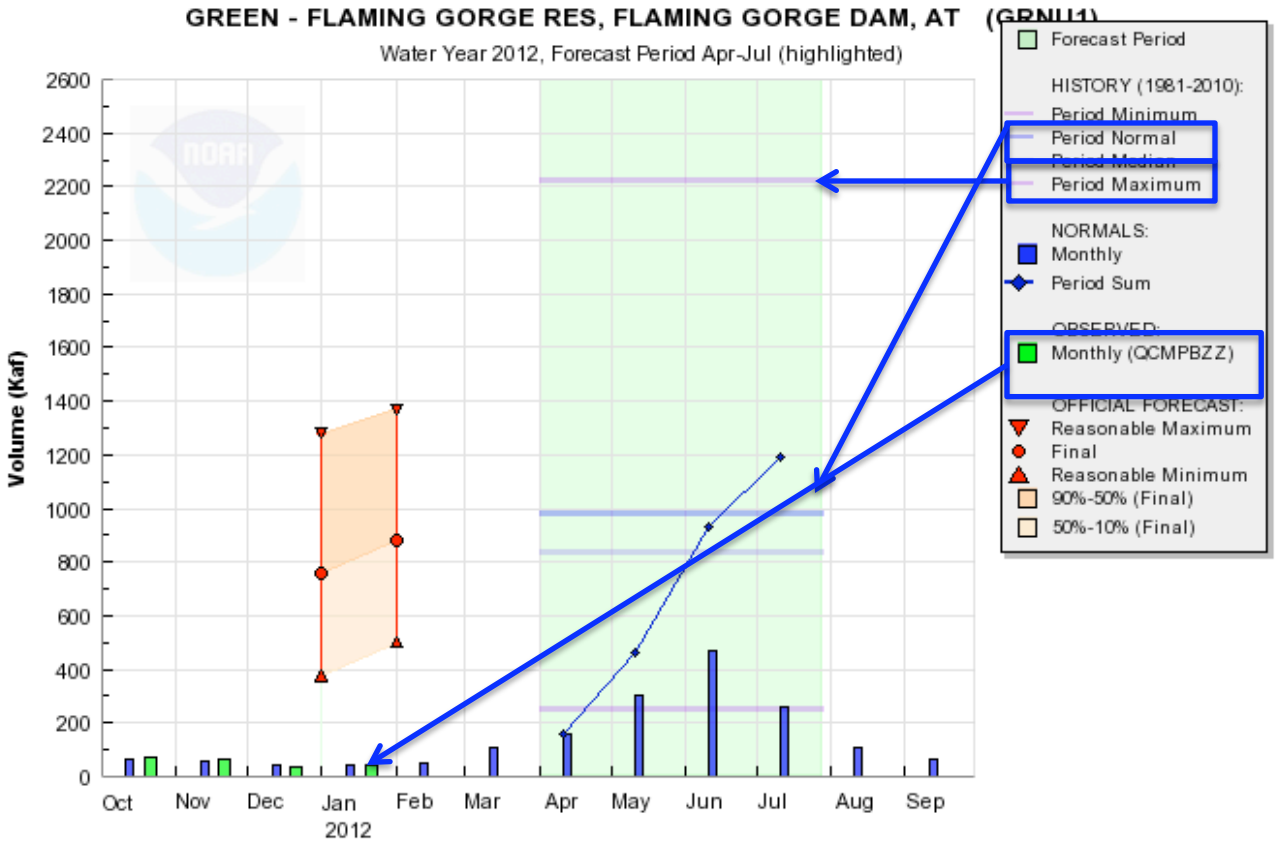


Seasonal Water Supply Forecast ⓘ — **Forecast Period: Apr-Jul**

880 kaf 50% Exceedence (Official Forecast)	**92%** of Historical Median	**90%** of Historical Mean
500 kaf 90% Exceedence	**1370 kaf** 10% Exceedence	**47th of 72** Official Historical Flows

Forecast Issued: Feb 1 2012 — View Water Supply Forecast Plot



CBRFC/NWS/NOAA 02/06/12 16:06:10 UTC

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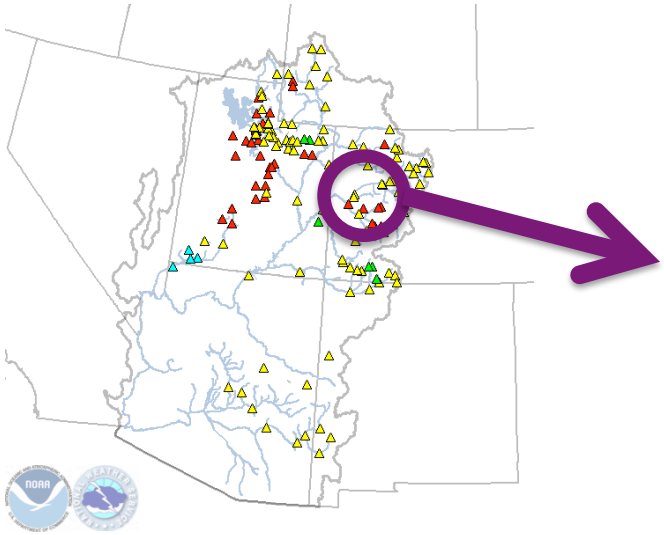
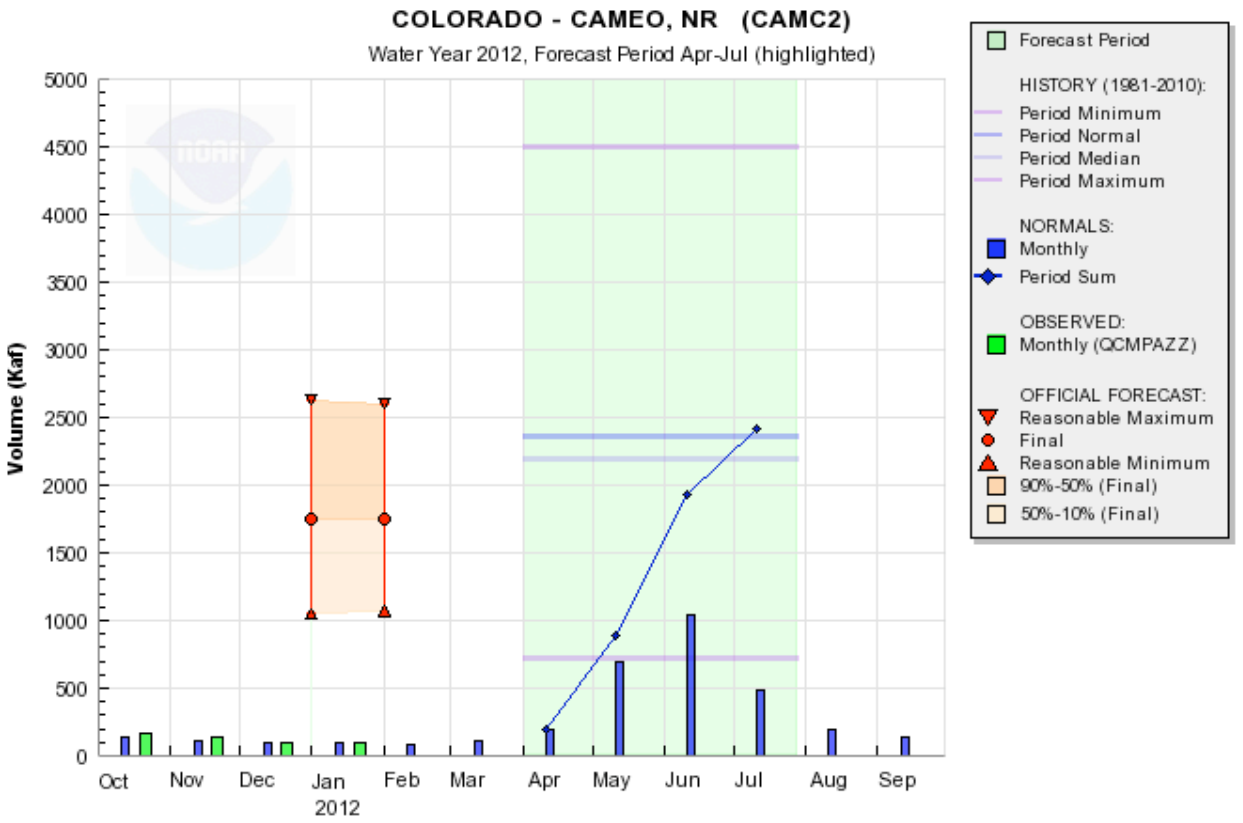


Seasonal Water Supply Forecast ⓘ — **Forecast Period: Apr–Jul**

1750 kaf 50% Exceedence (Official Forecast)	**82%** of Historical Median	**74%** of Historical Mean
1070 kaf 90% Exceedence	**2600 kaf** 10% Exceedence	**61st of 79** Official Historical Flows

Forecast Issued: Feb 1 2012

View Water Supply Forecast Plot



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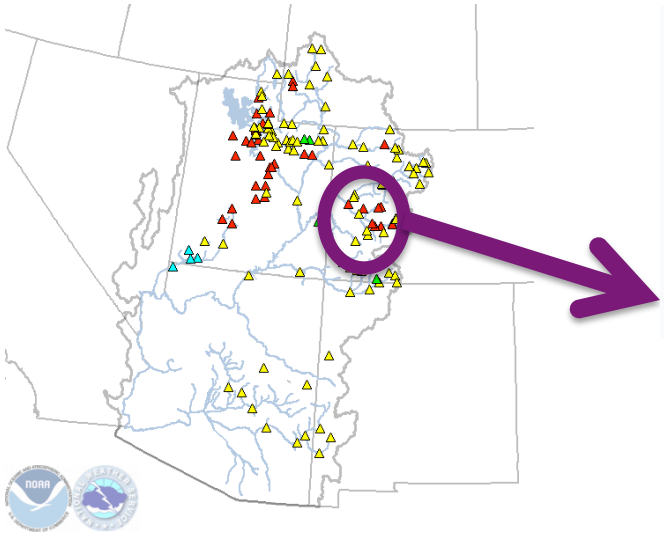
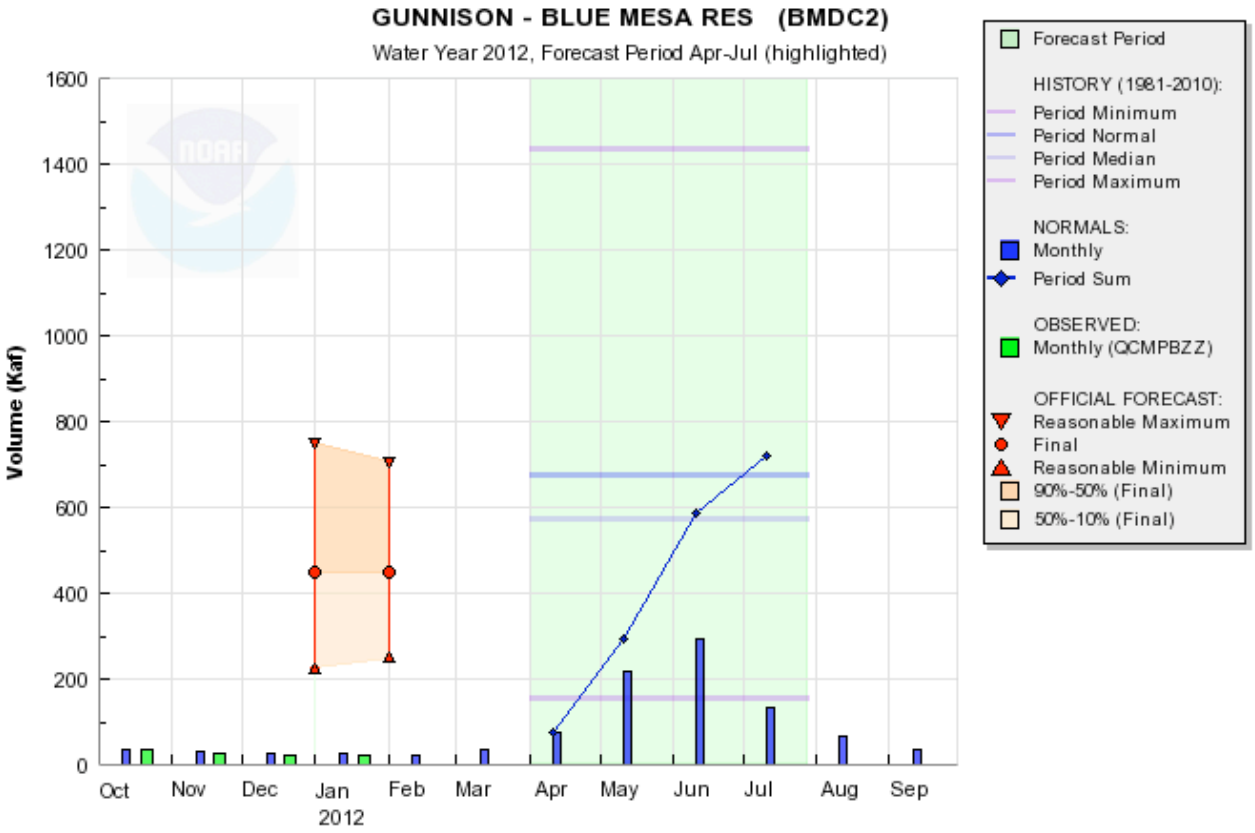


Seasonal Water Supply Forecast ⓘ — **Forecast Period: Apr-Jul**

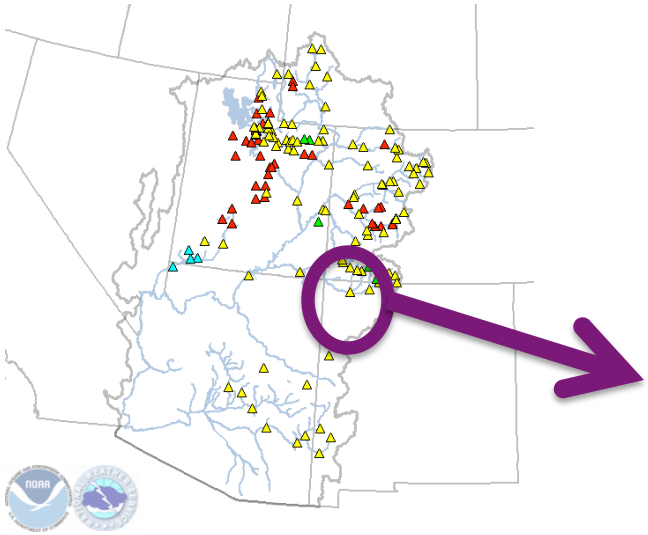
450 kaf 50% Exceedence (Official Forecast)	**77%** of Historical Median	**67%** of Historical Mean
250 kaf 90% Exceedence	**705 kaf** 10% Exceedence	**34th of 42** Official Historical Flows

Forecast Issued: Feb 1 2012 — View Water Supply Forecast Plot



CBRFC/NWS/NOAA 02/06/12 16:12:36 UTC

Web Reference: www.cbrfc.noaa.gov/gmap/gmapm.php?wcon=checked

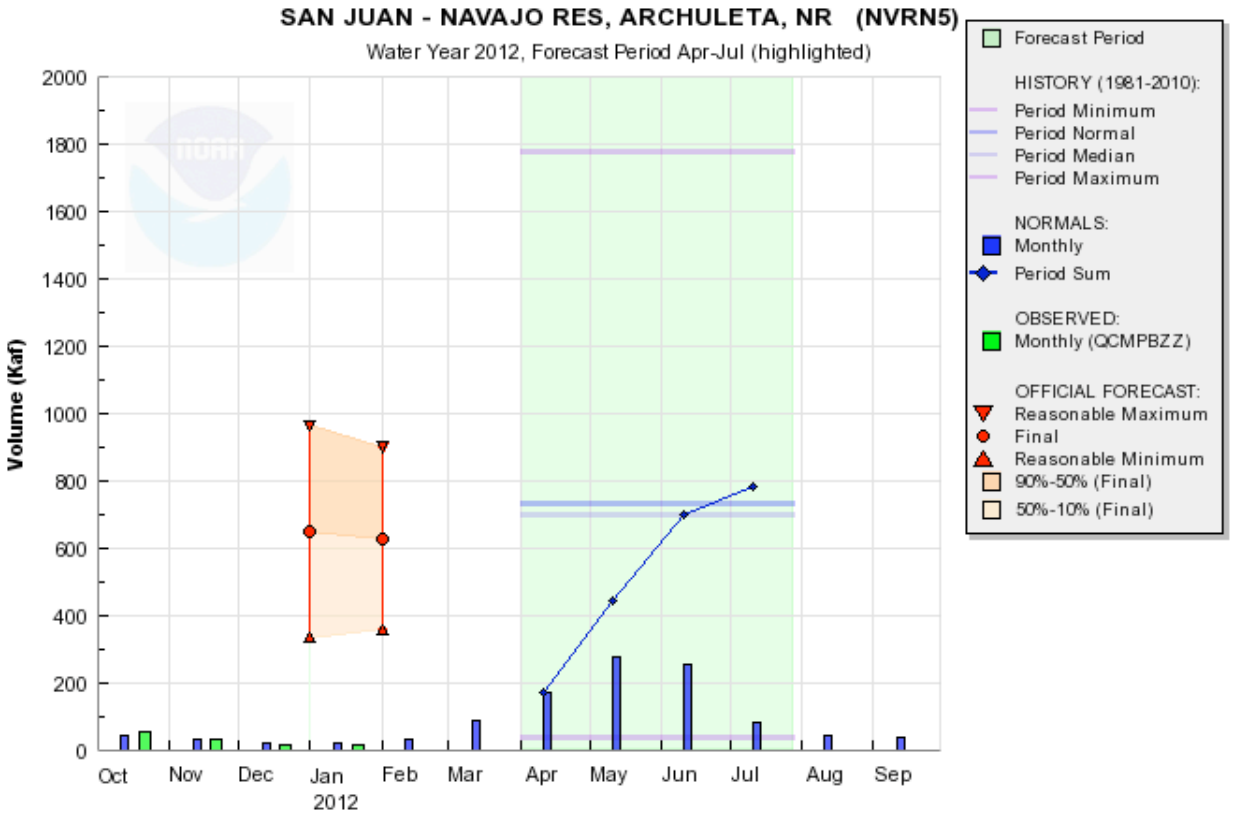


Seasonal Water Supply Forecast ⓘ — **Forecast Period: Apr–Jul**

630 kaf	104%	86%
50% Exceedence (Official Forecast)	of Historical Median	of Historical Mean
360 kaf	**900 kaf**	**39th of 65**
90% Exceedence	10% Exceedence	Official Historical Flows

Forecast Issued: Feb 1 2012

View Water Supply Forecast Plot



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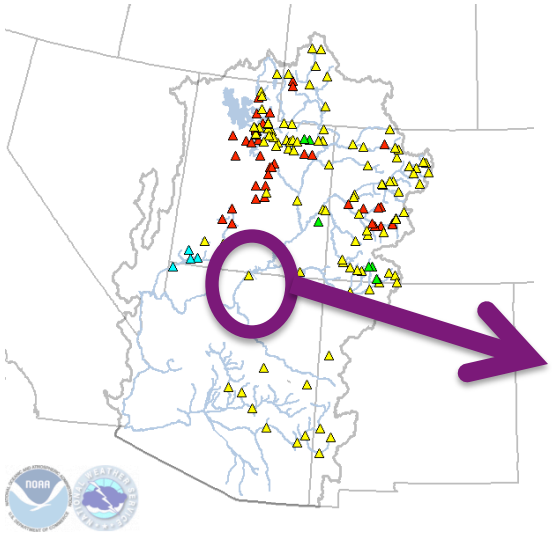
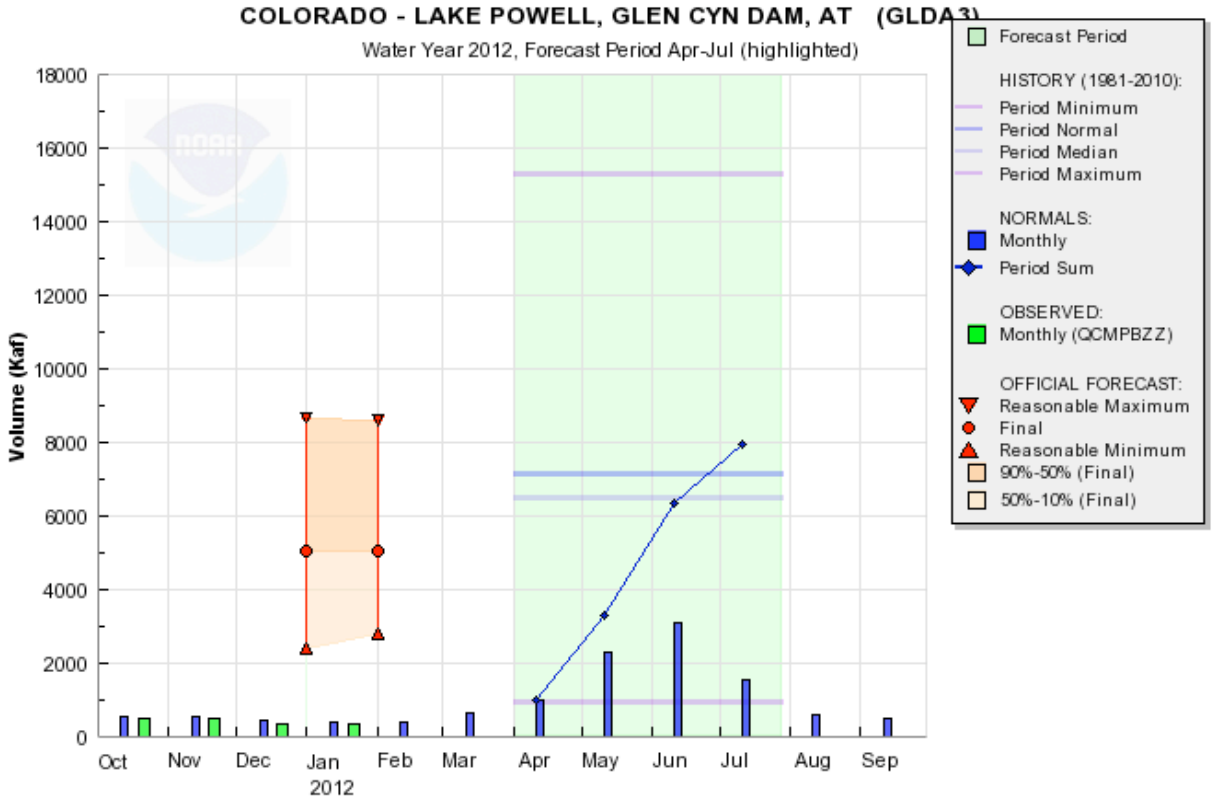


Seasonal Water Supply Forecast ⓘ — **Forecast Period: Apr–Jul**

5050 kaf 50% Exceedence (Official Forecast)	**66%** of Historical Median	**71%** of Historical Mean
2800 kaf 90% Exceedence	**8600 kaf** 10% Exceedence	**81st of 103** Official Historical Flows

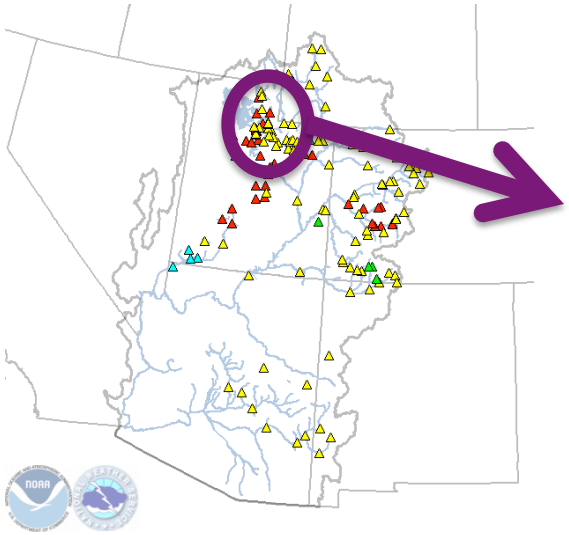
Forecast Issued: Feb 1 2012

View Water Supply Forecast Plot



CBRFC/NWS/NOAA 02/06/12 16:18:54 UTC

Web Reference: www.cbrfc.noaa.gov/gmap/gmapm.php?wcon=checked

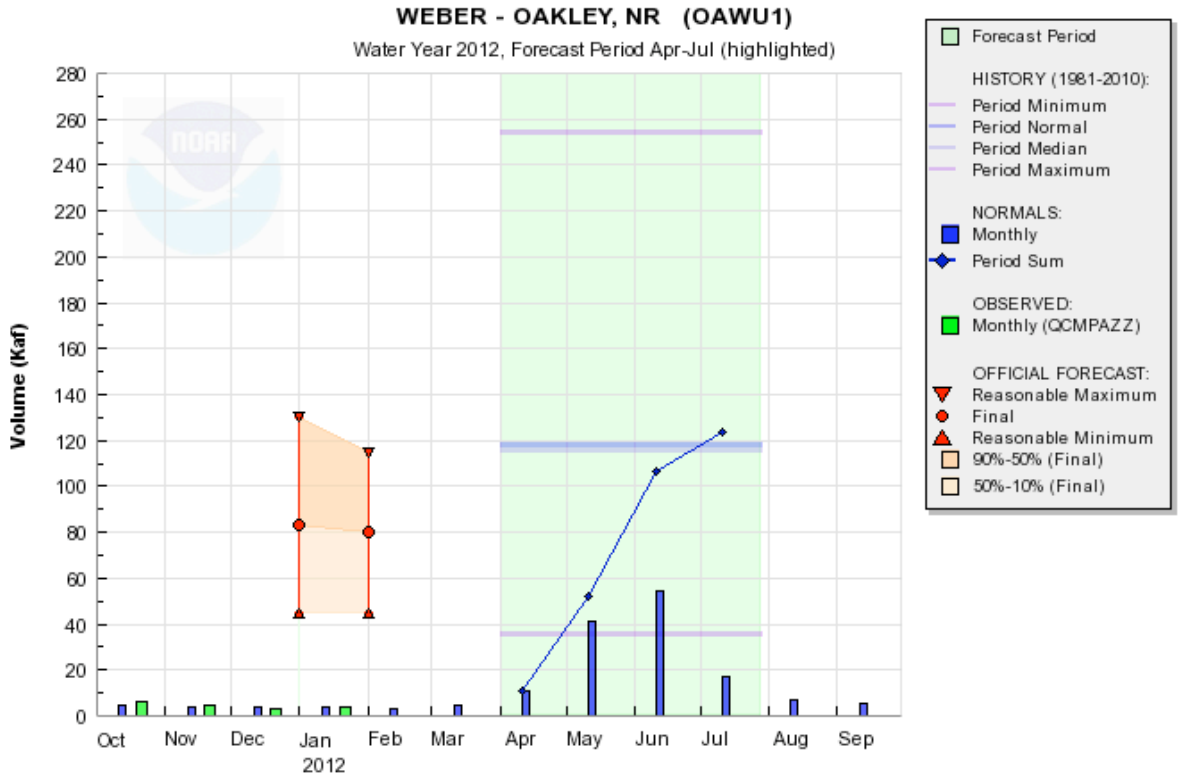


Seasonal Water Supply Forecast ⓘ — **Forecast Period: Apr-Jul**

80 kaf 50% Exceedence (Official Forecast)		**67%** of Historical Median	**68%** of Historical Mean
45 kaf 90% Exceedence	**115 kaf** 10% Exceedence	**91st of 108** Official Historical Flows	

Forecast Issued: Feb 1 2012

View Water Supply Forecast Plot



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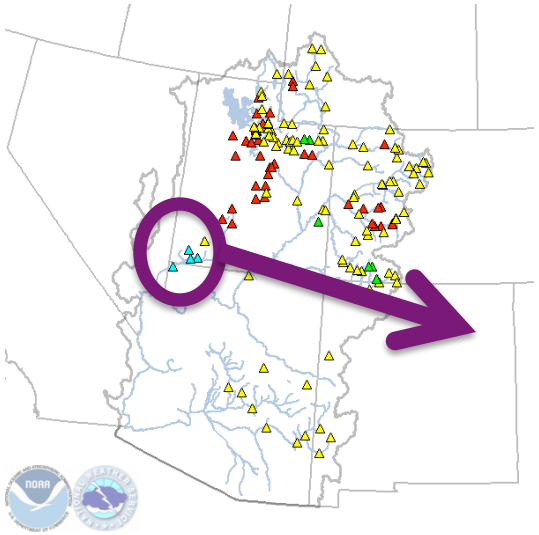
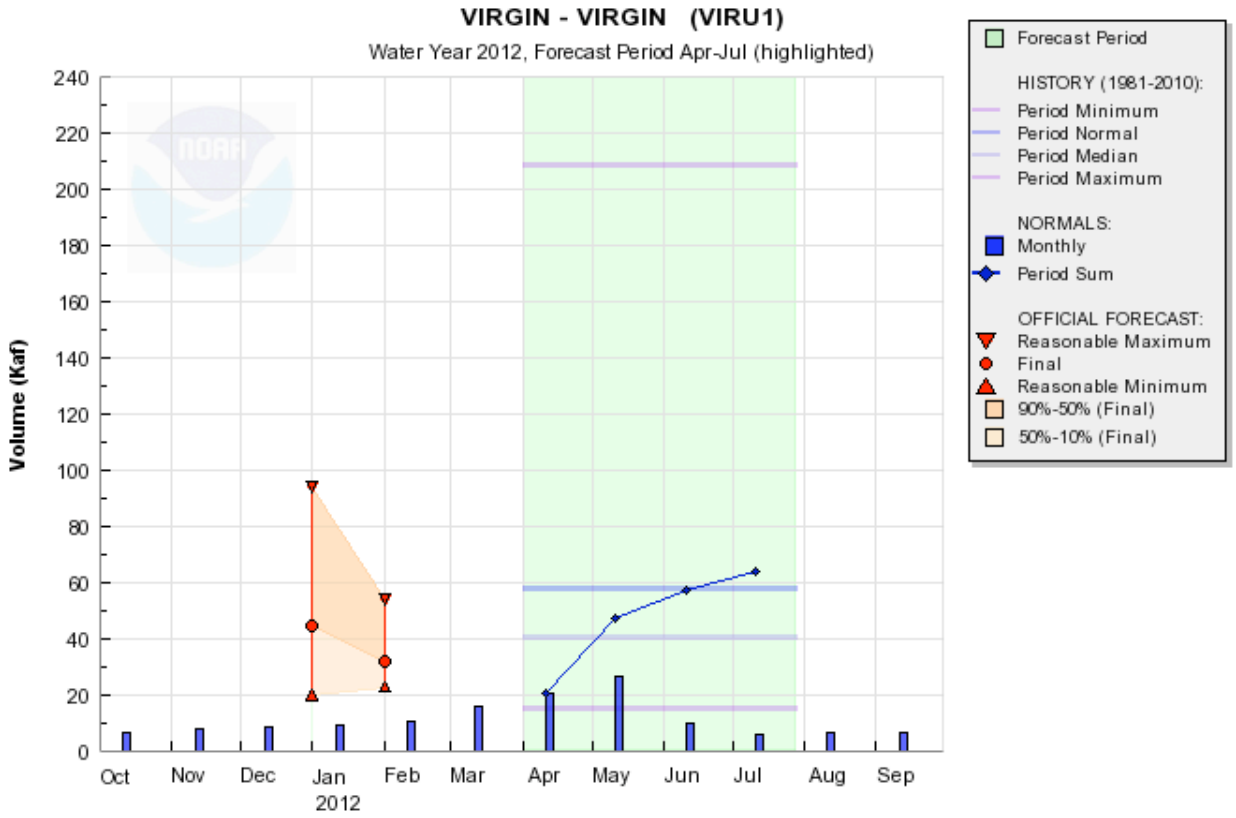


Seasonal Water Supply Forecast ⓘ — **Forecast Period: Apr–Jul**

32 kaf 50% Exceedence (Official Forecast)	**67%** of Historical Median	**55%** of Historical Mean
23 kaf 90% Exceedence	**54 kaf** 10% Exceedence	**78th of 103** Official Historical Flows

Forecast Issued: Feb 1 2012

View Water Supply Forecast Plot



No data before 2011-10-01

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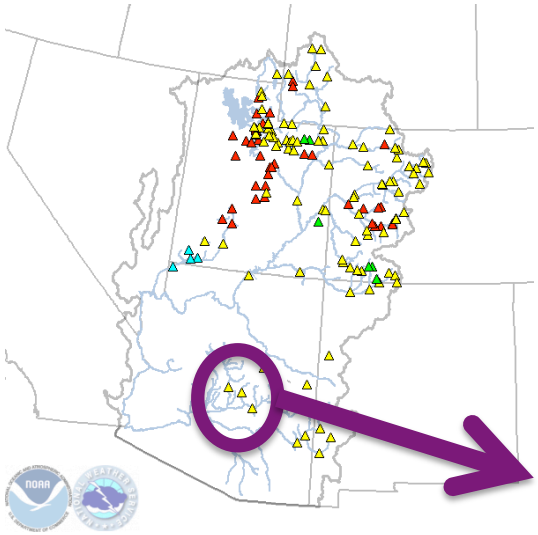
Web Reference: www.cbrfc.noaa.gov/gmap/gmapm.php?wcon=checked



Seasonal Water Supply Forecast ⓘ

Forecast Period: Feb-May

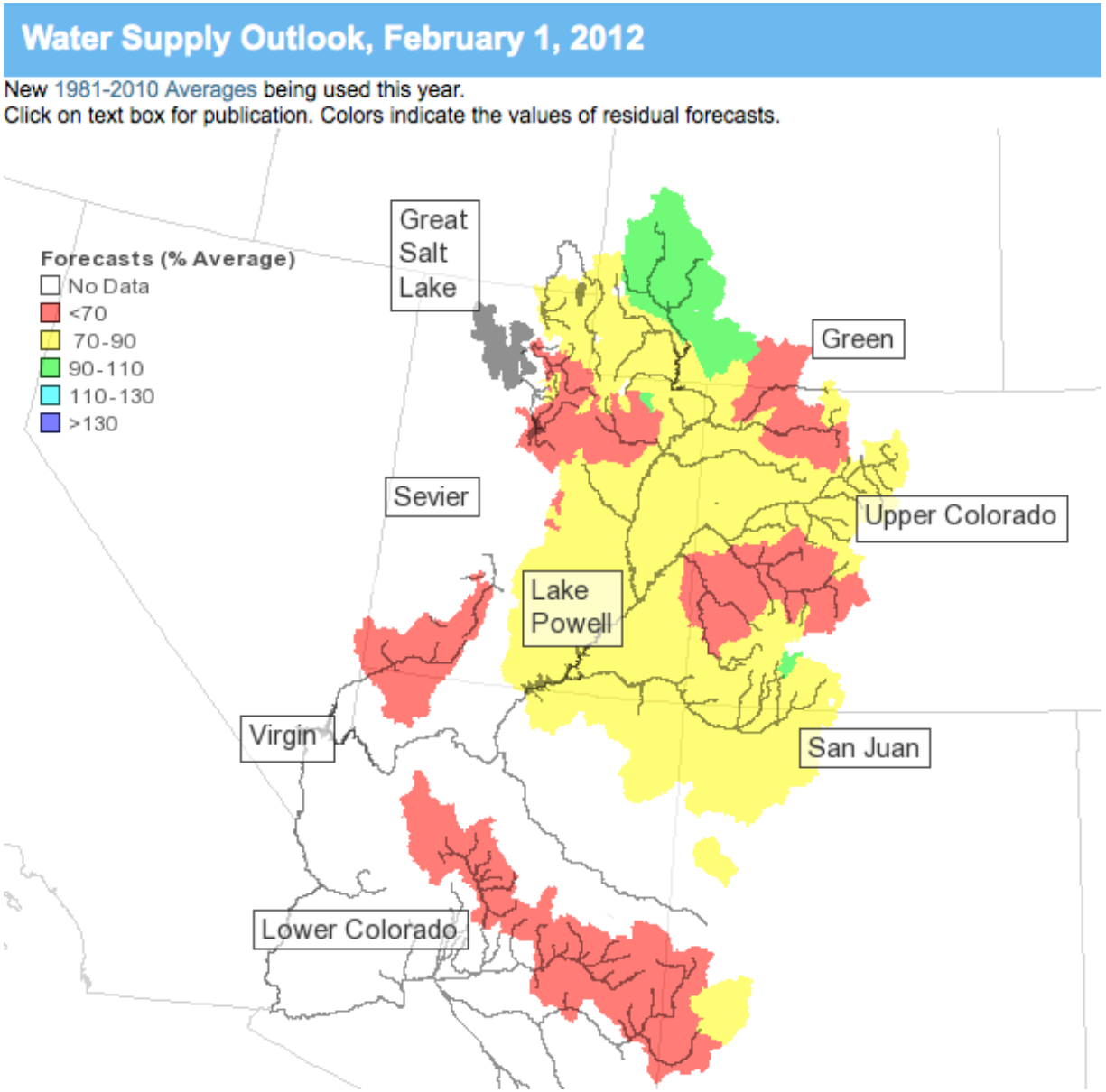
130 kaf 50% Exceedence (Official Forecast)	**55%** of Historical Median	**0%** of Historical Mean
50 kaf 90% Exceedence	**270 kaf** 10% Exceedence	**74th of 99** Official Historical Flows

Forecast Issued: Feb 1 2012

View Water Supply Forecast Plot

Web Reference: www.cbrfc.noaa.gov/gmap/gmapm.php?wcon=checked

Online Publication



Web Reference: www.cbrfc.noaa.gov/wsup/pub2/map/html/cpub.php

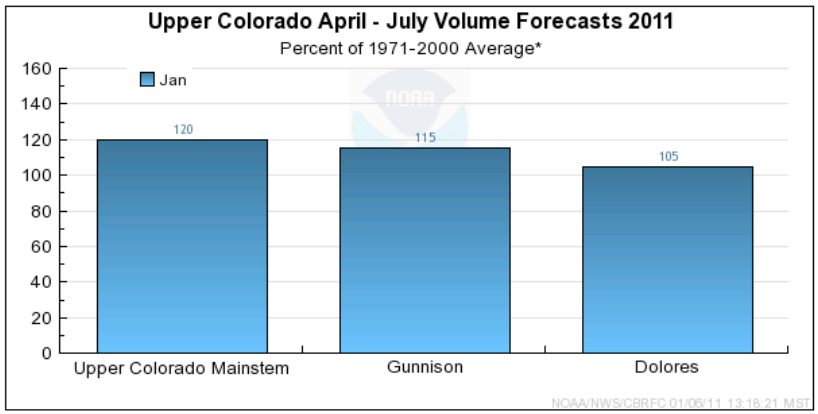
Note: This publication is currently undergoing major revisions and parts of it may be discontinued during or after WY2011.
If this change could impact your operations or you have input for the revisions, please contact us at cbrfc.webmasters@noaa.gov

Upper Colorado Water Supply Outlook, January 1, 2011

Prepared by Brenda Alcorn, Tracy Cox
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Contents

Upper Colorado Summary



*Median of forecasts within each basin.

Upper Colorado Mainstem Specific Site Forecasts (kaf)

Click site name for graph.

	Forecast Period	90% Exceedance Volume	50% Exceedance Volume	Percent Average	10% Exceedance Volume
Colorado					
Lake Granby, Granby, Nr	April-July	200	***280***	**124**	370
Willow Ck					
Willow Ck Res, Granby, Nr	April-July	44	***70***	**137**	102
Fraser					
Winter Park	April-July	15	***23***	**115**	29
Williams Fork					
Williams Fork Res, Parshall, Nr	April-July	76	***110***	**116**	150
Muddy Ck					
Wolford Mtn Res, Blo	April-July	46	***76***	**127**	114
Blue					
Dillon Res	April-July	134	***200***	**120**	280
Green Mtn Res	April-July	225	***335***	**120**	465
Colorado					
Kremmling, Nr	April-July	725	***1070***	**123**	1450
Eagle					
Gypsum, Blo	April-July	250	***380***	**113**	535
Colorado					
Dotsero, Nr	April-July	1140	***1720***	**119**	2410
Frying Pan					
Ruedi Res, Basalt, Nr	April-July	112	***160***	**113**	215
Roaring Fork					
Glenwood Springs	April-July	570	***840***	**118**	1160
Colorado					
Glenwood Springs, Blo	April-July	1700	***2560***	**119**	3600
Cameo, Nr	April-July	1980	***2910***	**120**	4020
Plateau Ck					
Cameo, Nr	April-July	100	***160***	**139**	250
Colorado					
Cisco, Nr	April-July	3640	***5620***	**121**	8020
Mill Ck					
Moab, Nr, Sheley Tun, At	April-July	2.9	***6***	**120**	10.8
Colorado					
Lake Powell, Glen Cyn Dam, At	April-July	5860	***9500***	**120**	14000

Web Reference: www.cbrfc.noaa.gov/wsup/pub2/map/html/cpub.php

CBRFC News

- Basin Focal Points (Available to discuss forecasts: 801.524.5130)
  - Upper Colorado: Brenda Alcorn / John Lhotak
  - Green: Ashley Nielson
  - San Juan / Gunnison: Greg Smith
  - Great Basin: Brent Bernard
  - Sevier / Virgin: Stacie Bender
  - Lower Colorado (below Lake Powell): Tracy Cox
- Misc:
  - New CBRFC webpage (www.cbrfc.noaa.gov) - "How to use the webpage" webinar / recorded tutorial coming later this month
  - Future webinar dates announced:
    - March 7 at 10am MT
    - April 6 at 10am MT
    - May 4 at 1pm MT
    - June 6 at 1pm MT
  - Weekly ESP model guidance
  - Email product updates via govdelivery
  - Blog

More Resources

- www.cbrfc.noaa.gov
- Wateroutlook.nwrfc.noaa.gov

- Tentative February webinar: 10am Mar 7

Feedback, Questions, Concerns always welcome….

Kevin Werner

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