

CBRFC
January 2011
Water Supply Webinar

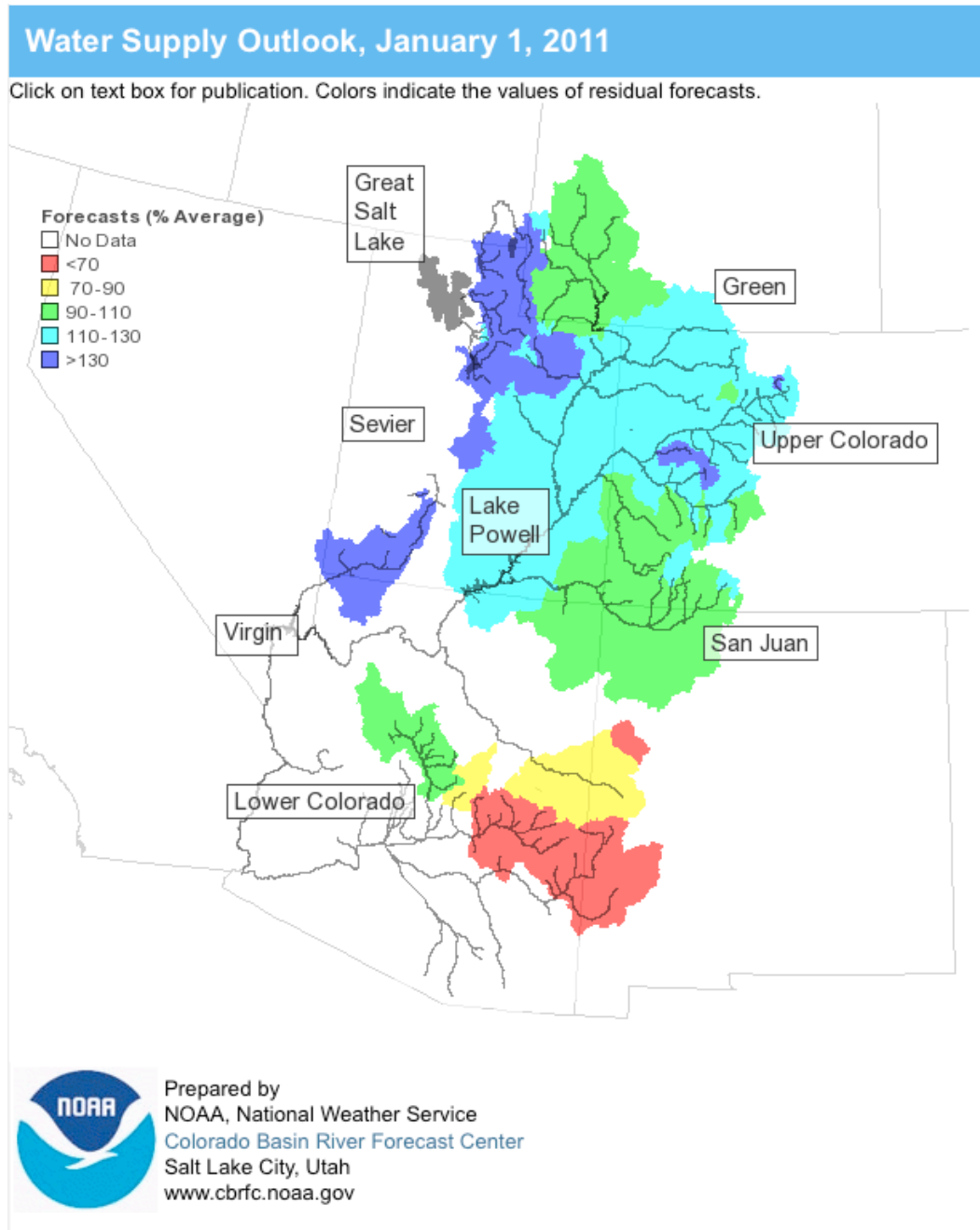
1pm, January 7, 2011

Kevin Werner

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

Outline

- December Weather Review
- Snow States
- Water Supply Forecasts

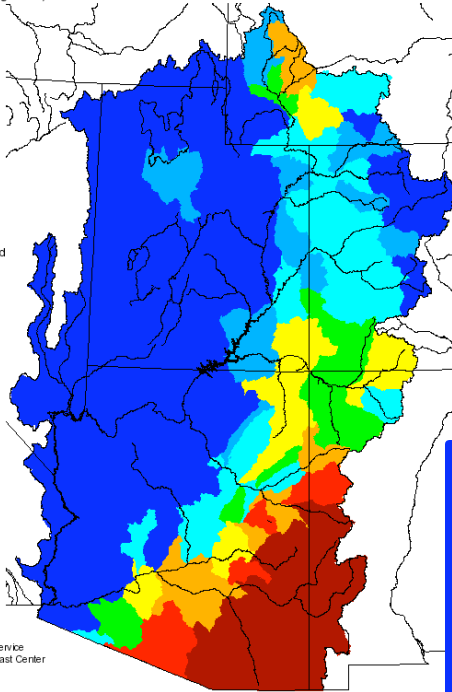
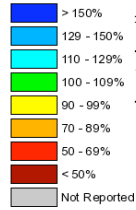


Web Reference: www.cbrfc.noaa.gov/wsup/pub2/map/html/cbrfc.1.2011.html

Monthly Precipitation for October 2010

(Averaged by Hydrologic Unit)

% Average

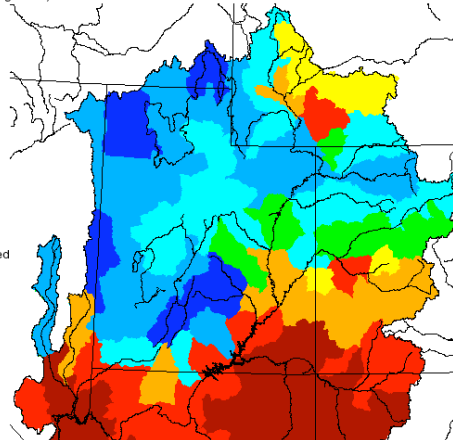
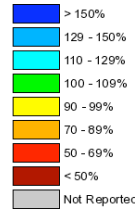


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Monthly Precipitation for November 2010

(Averaged by Hydrologic Unit)

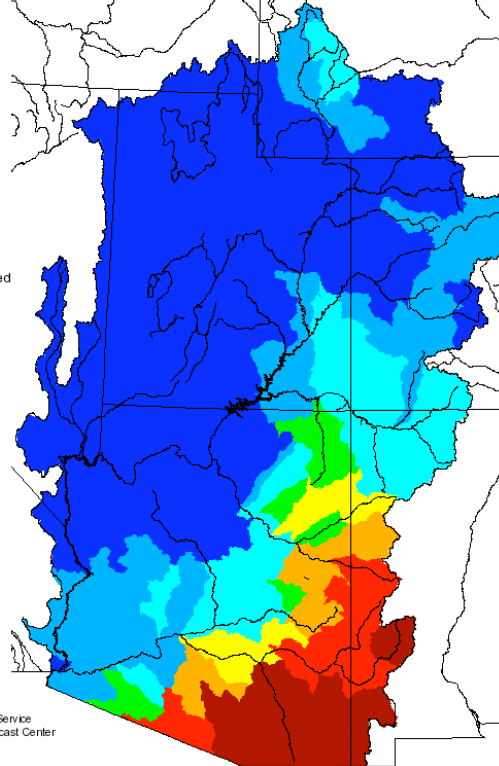
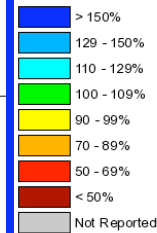
% Average



Seasonal Precipitation, October 2010 - December 2010

(Averaged by Hydrologic Unit)

% Average

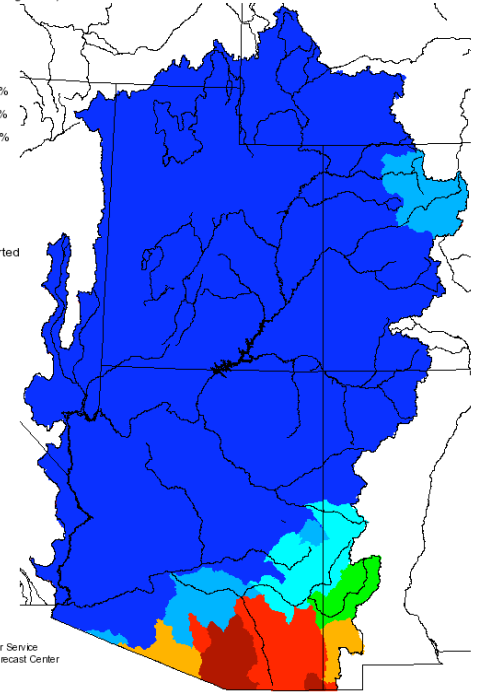
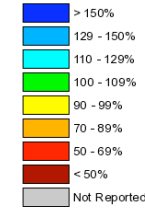


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Monthly Precipitation for December 2010

(Averaged by Hydrologic Unit)

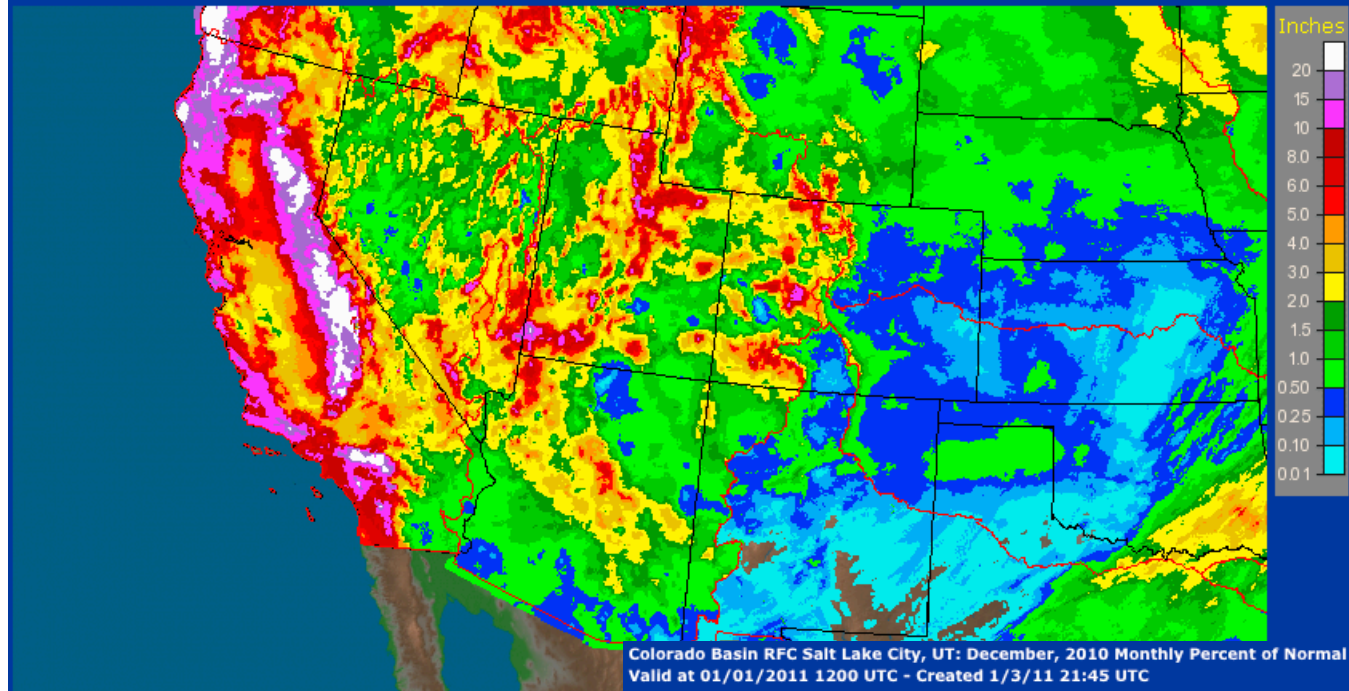
% Average



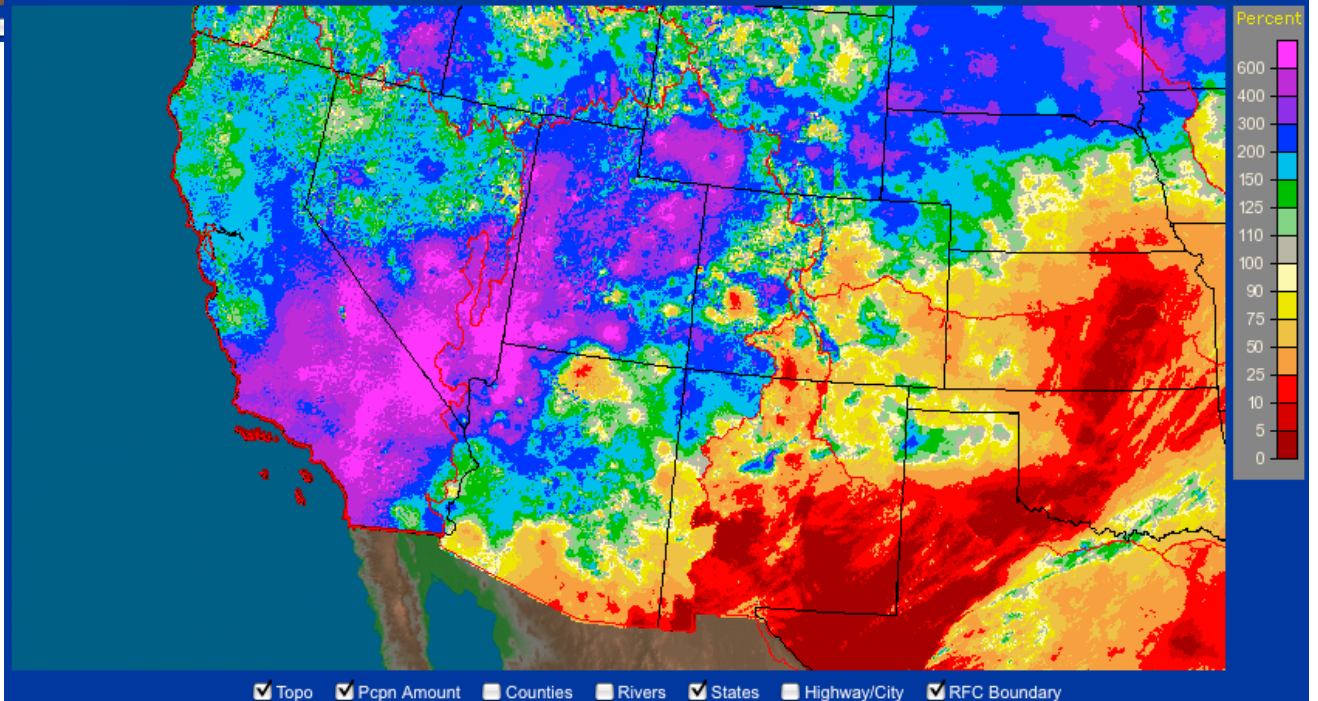
Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

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

Colorado Basin RFC Salt Lake City, UT: December, 2010 Monthly Observed Precipitation
Valid at 01/01/2011 1200 UTC - Created 1/3/11 21:41 UTC



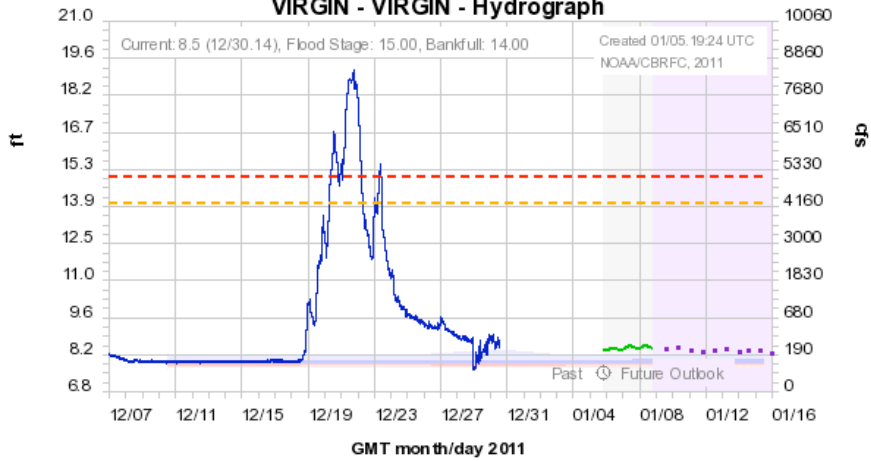
Colorado Basin RFC Salt Lake City, UT: December, 2010 Monthly Percent of Normal Precipitation
Valid at 01/01/2011 1200 UTC - Created 1/3/11 21:45 UTC



Topo Pcpn Amount Counties

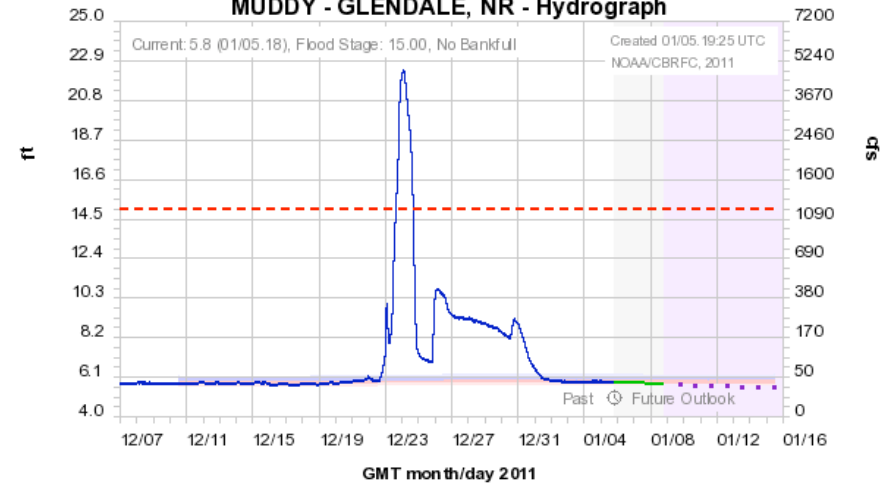
Topo Pcpn Amount Counties Rivers States Highway/City RFC Boundary

**Colorado Basin River Forecast Center
VIRGIN - VIRGIN - Hydrograph**



Observed — Forecast (01/05.14:00) — Outlook (increasing uncertainty) — Bankfull 14.00 —
 Flood 15.0 —
 Historical Exceedance Probability (USGS): 90-75% 75-50% 50-25% 25-10%

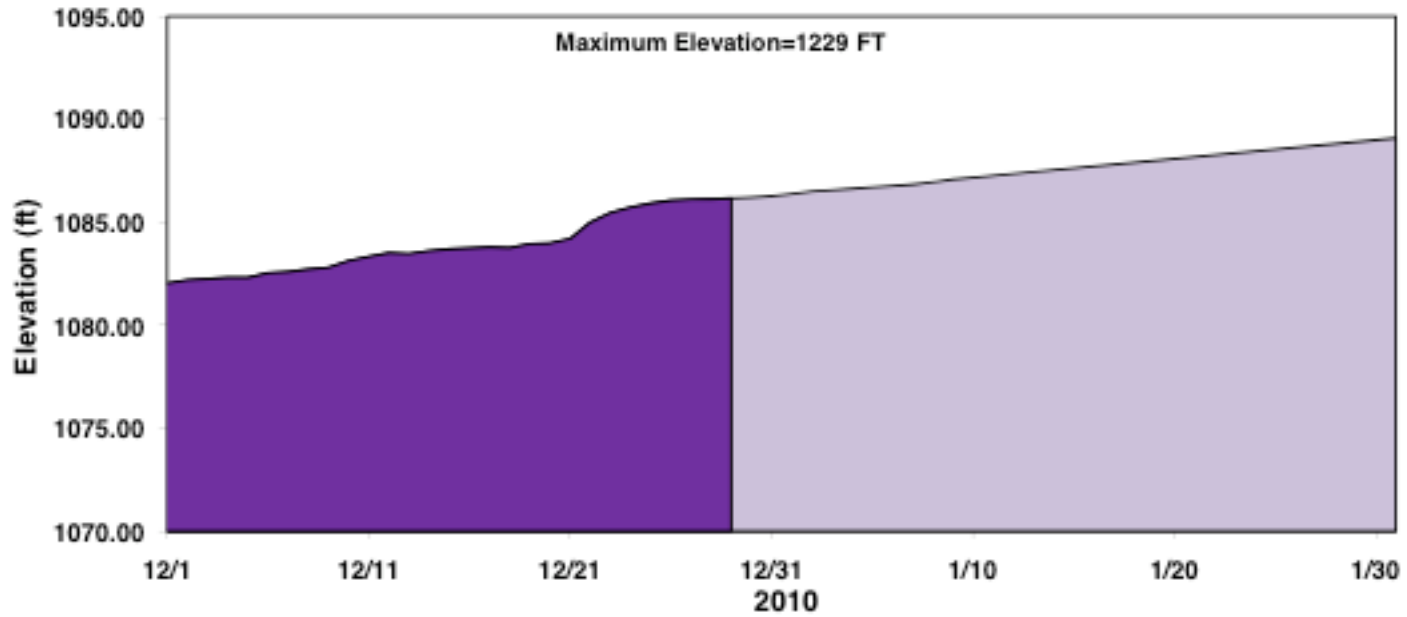
**Colorado Basin River Forecast Center
MUDDY - GLENDALE, NR - Hydrograph**



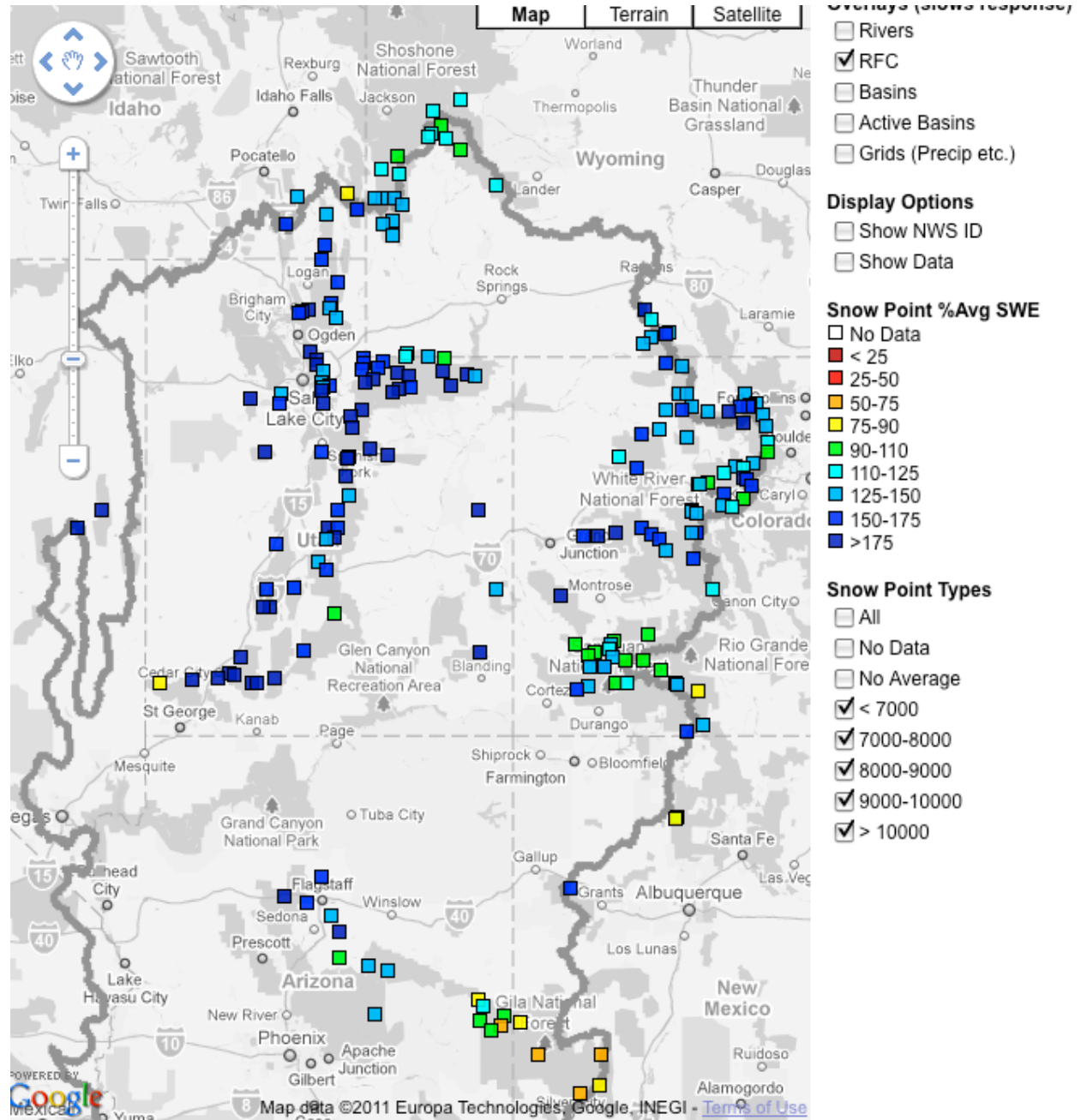
Observed — Forecast (01/05.14:00) — Outlook (increasing uncertainty) — Flood 15.0 —
 Historical Exceedance Probability (USGS): 90-75% 75-50% 50-25% 25-10%

12/30/10

Lake Mead End of Day Elevation



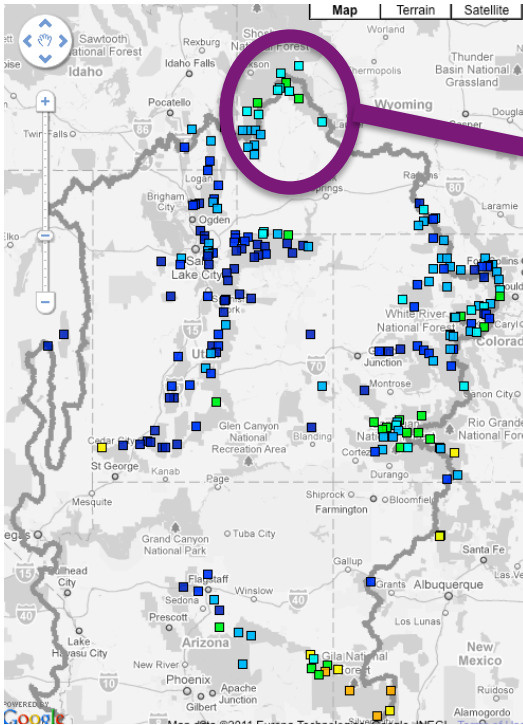
SNOW



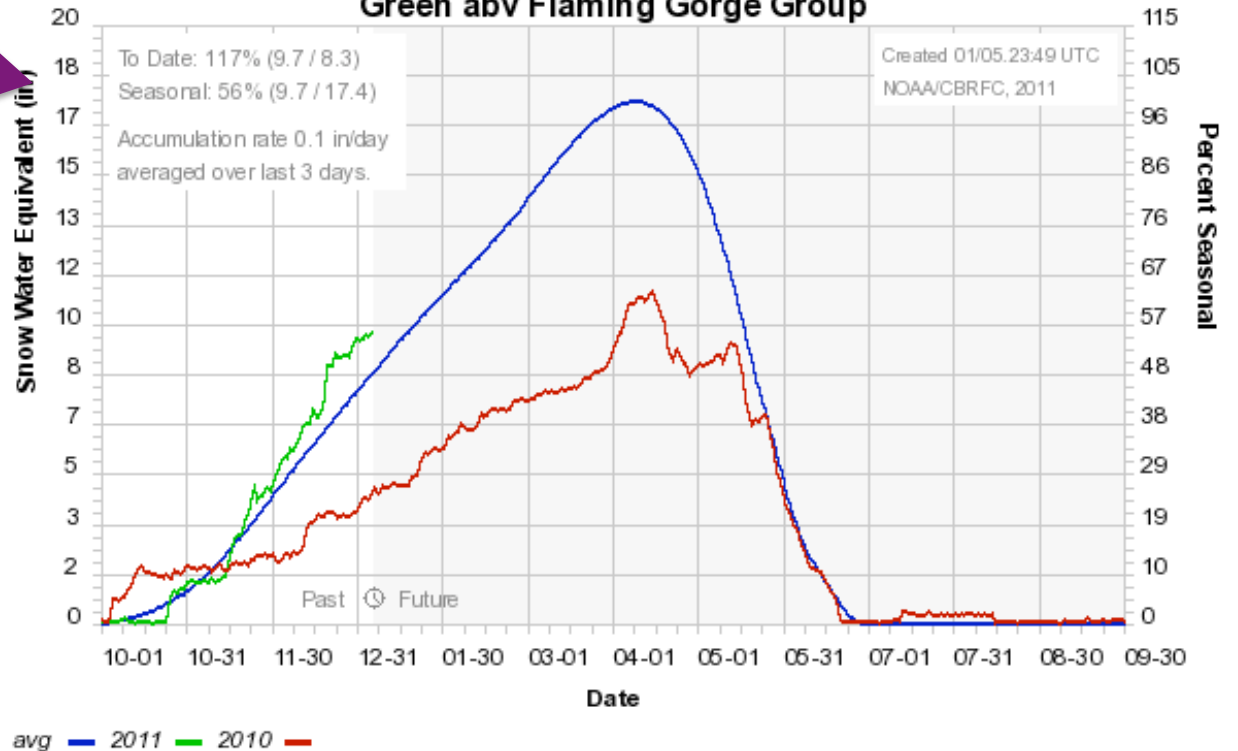
at: 38.93 lng: -110.5, 6, Data from Wed, 05 Jan 2011 16:43:00 -0700

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

Snow: Upper Green Basin (above Flaming Gorge)

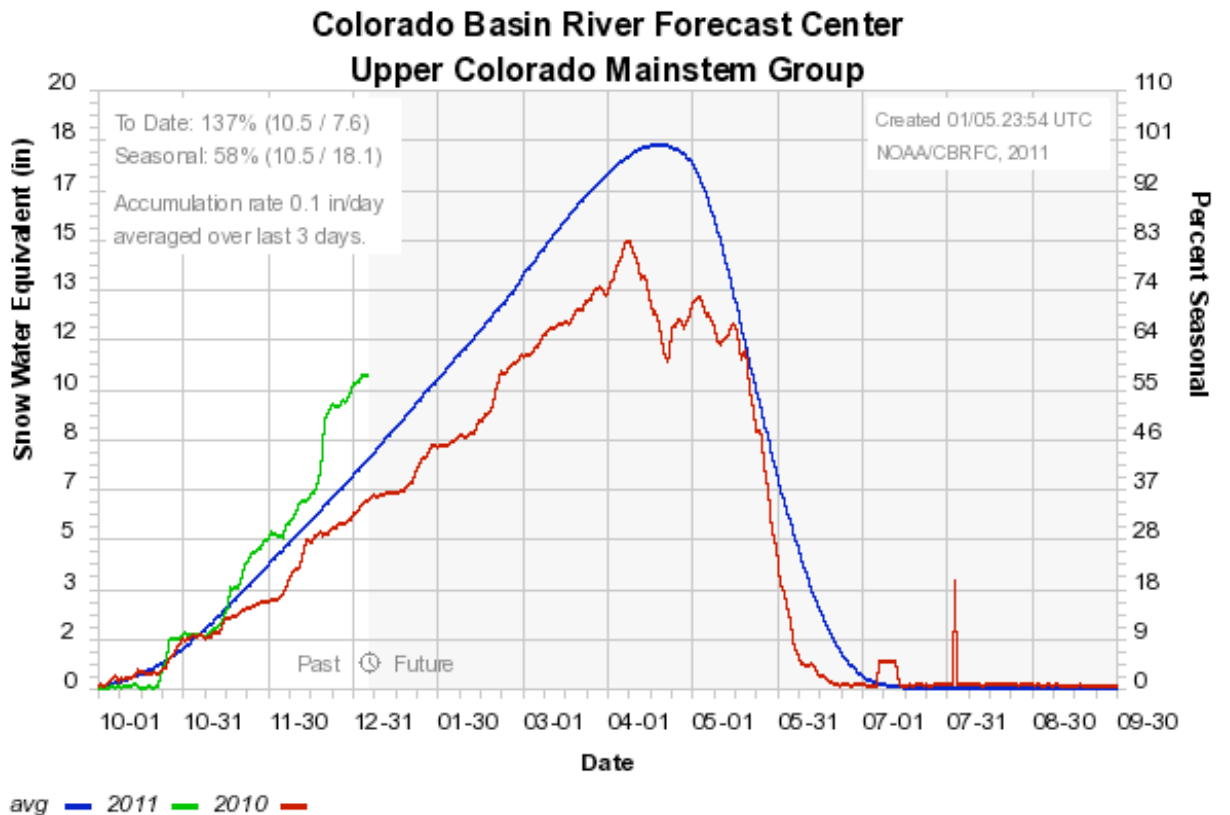
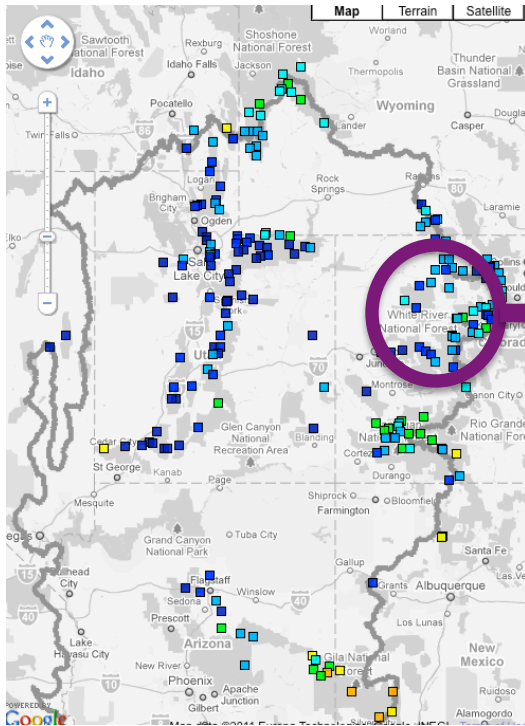


Colorado Basin River Forecast Center
Green abv Flaming Gorge Group



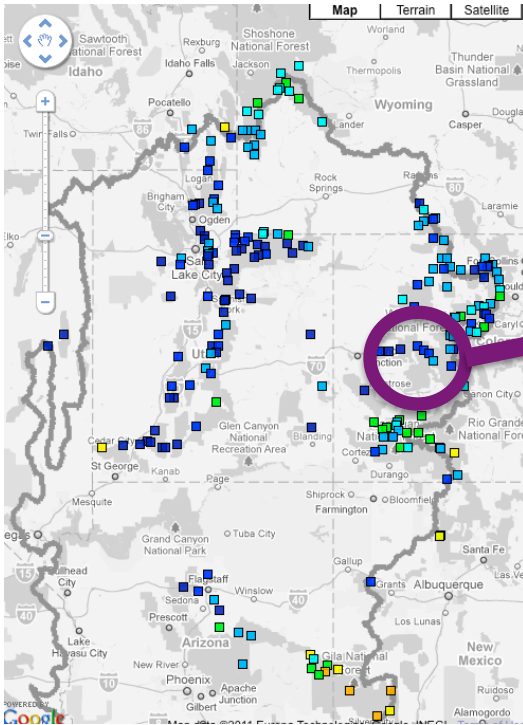
Web Reference: <http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open>

Snow: Colorado Mainstem (above Cameo)

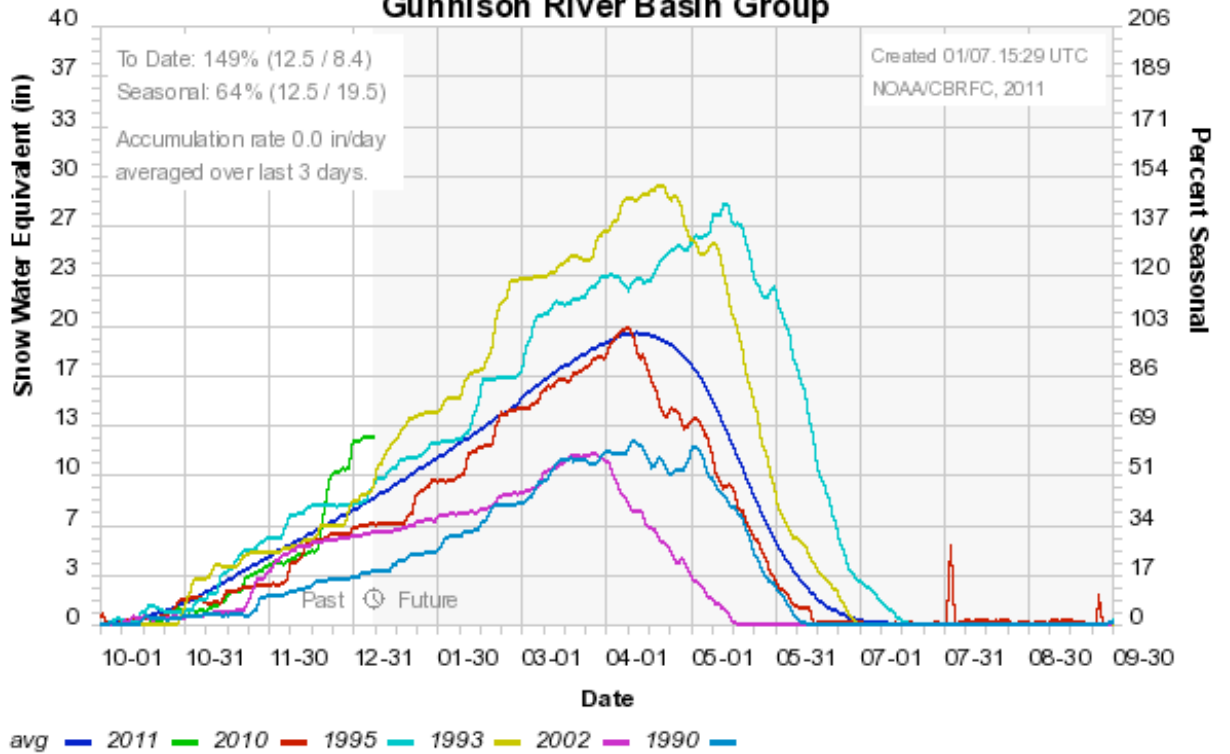


Web Reference: <http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open>

Snow: Gunnison Basin

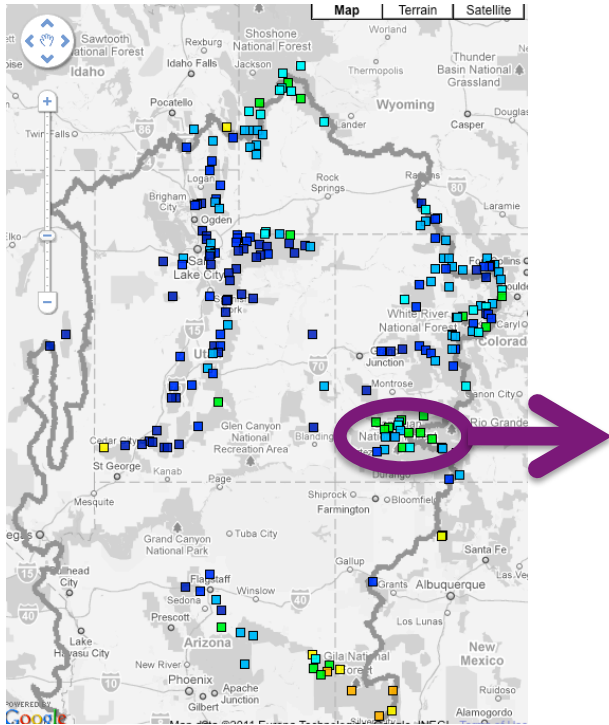


Colorado Basin River Forecast Center
Gunnison River Basin Group

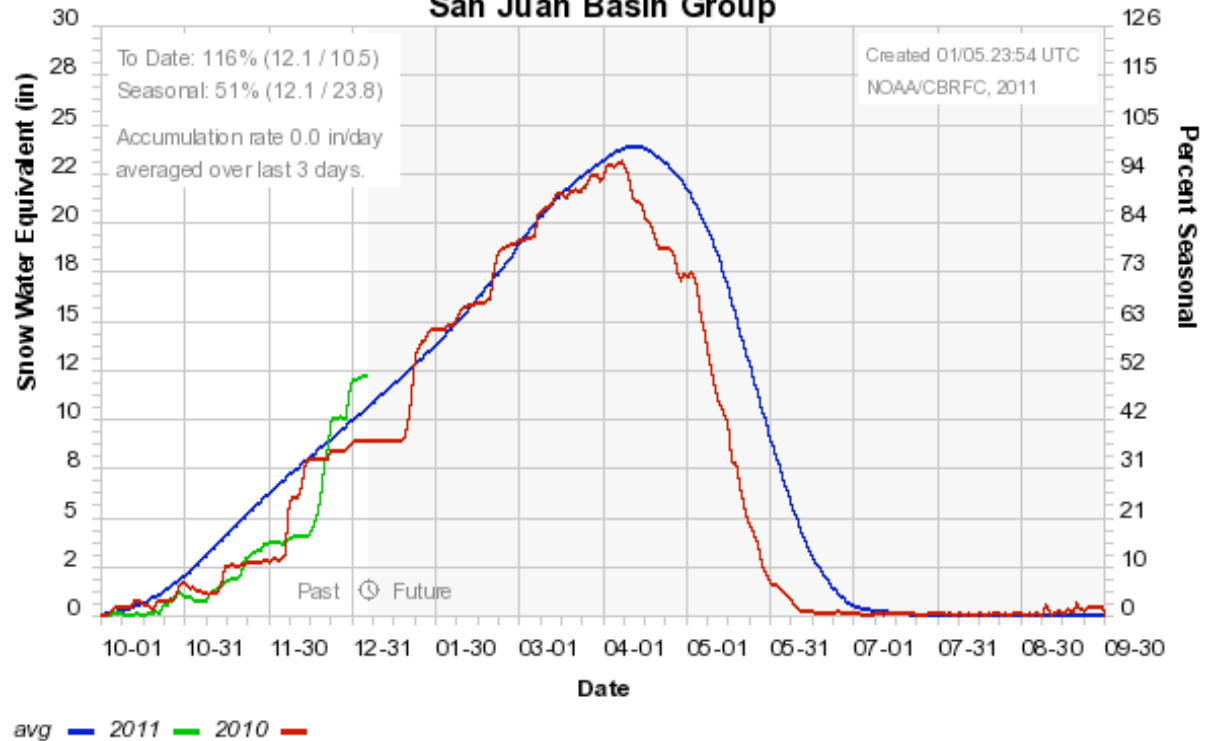


Web Reference: <http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open>

Snow: San Juan Basin



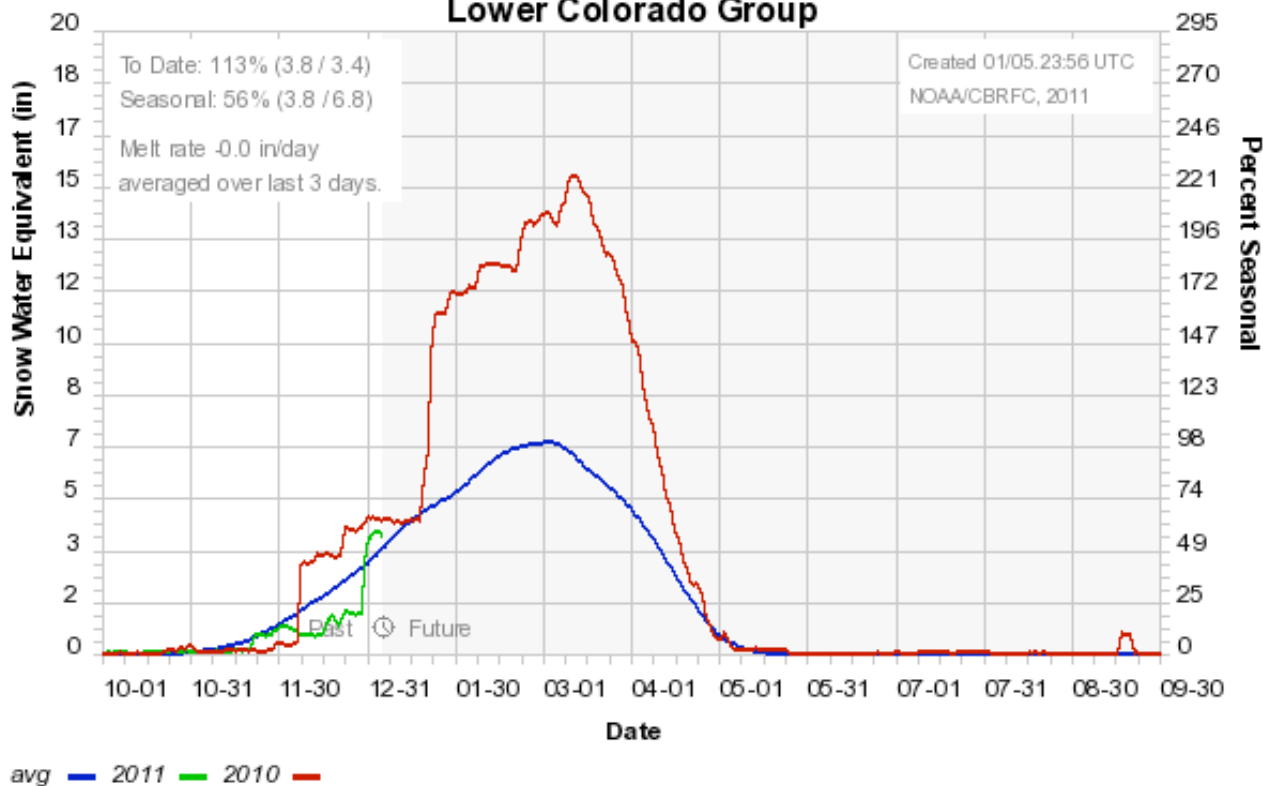
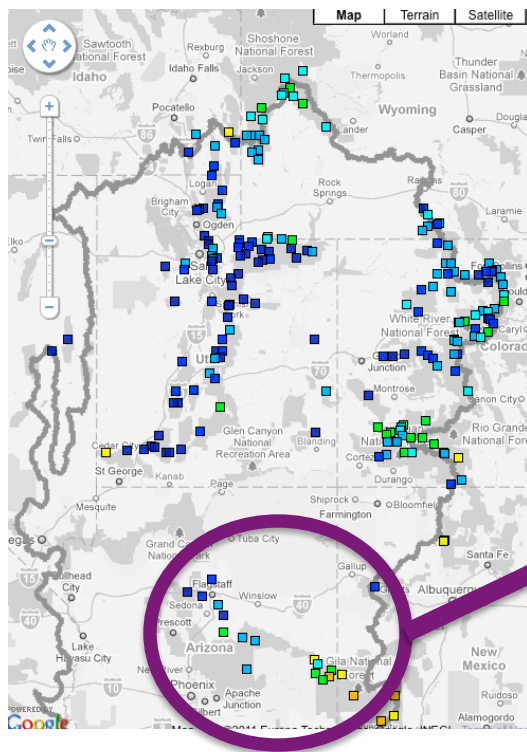
Colorado Basin River Forecast Center
San Juan Basin Group



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

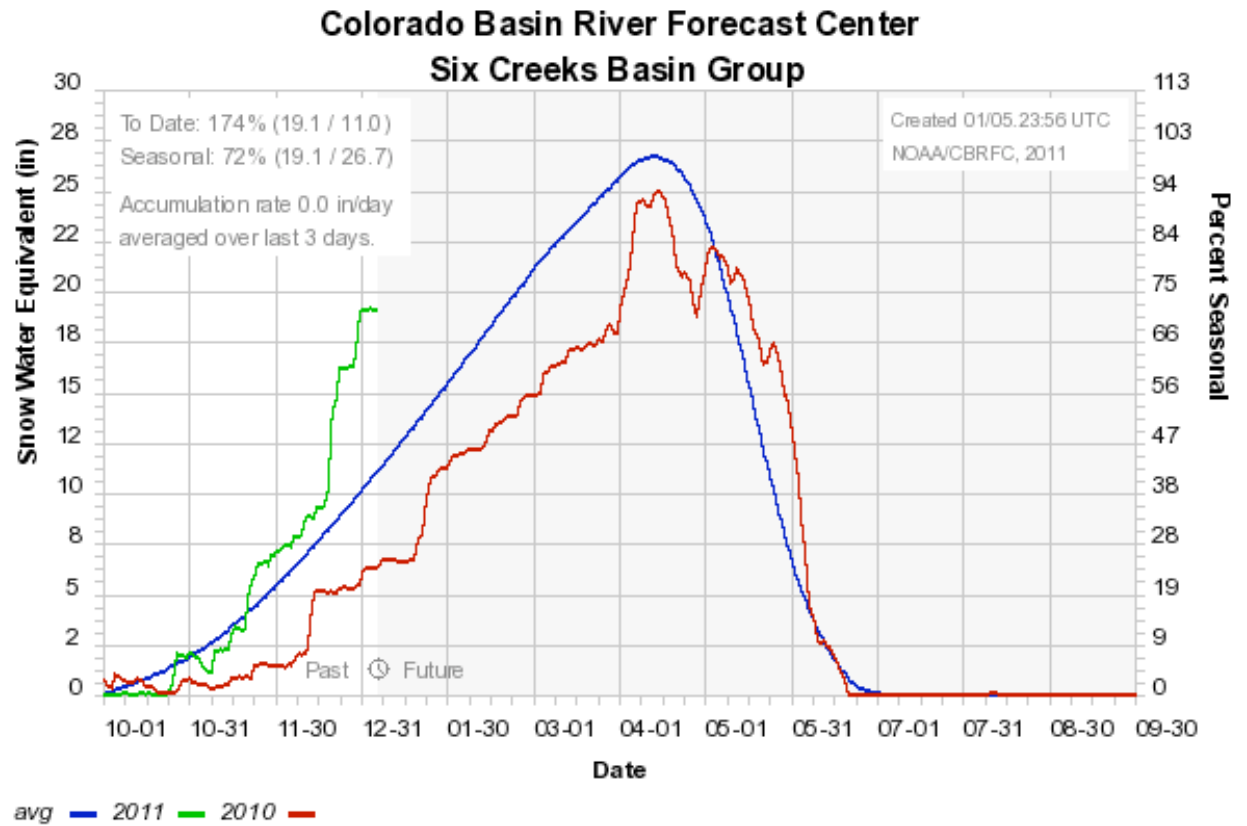
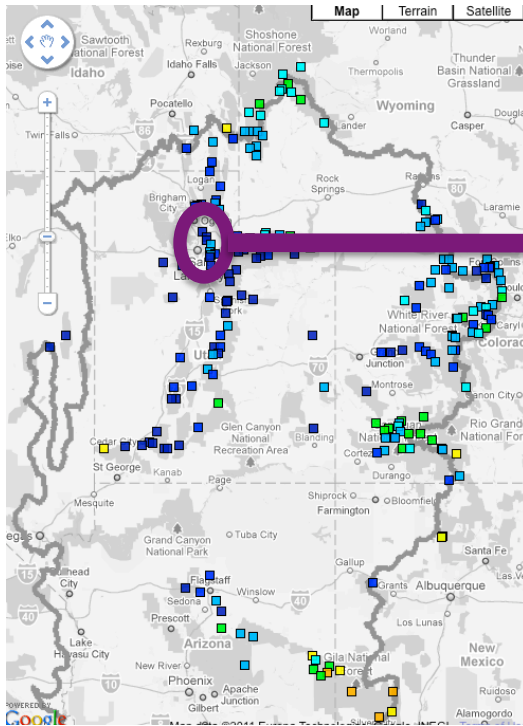
Snow: Lower Colorado

Colorado Basin River Forecast Center Lower Colorado Group



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

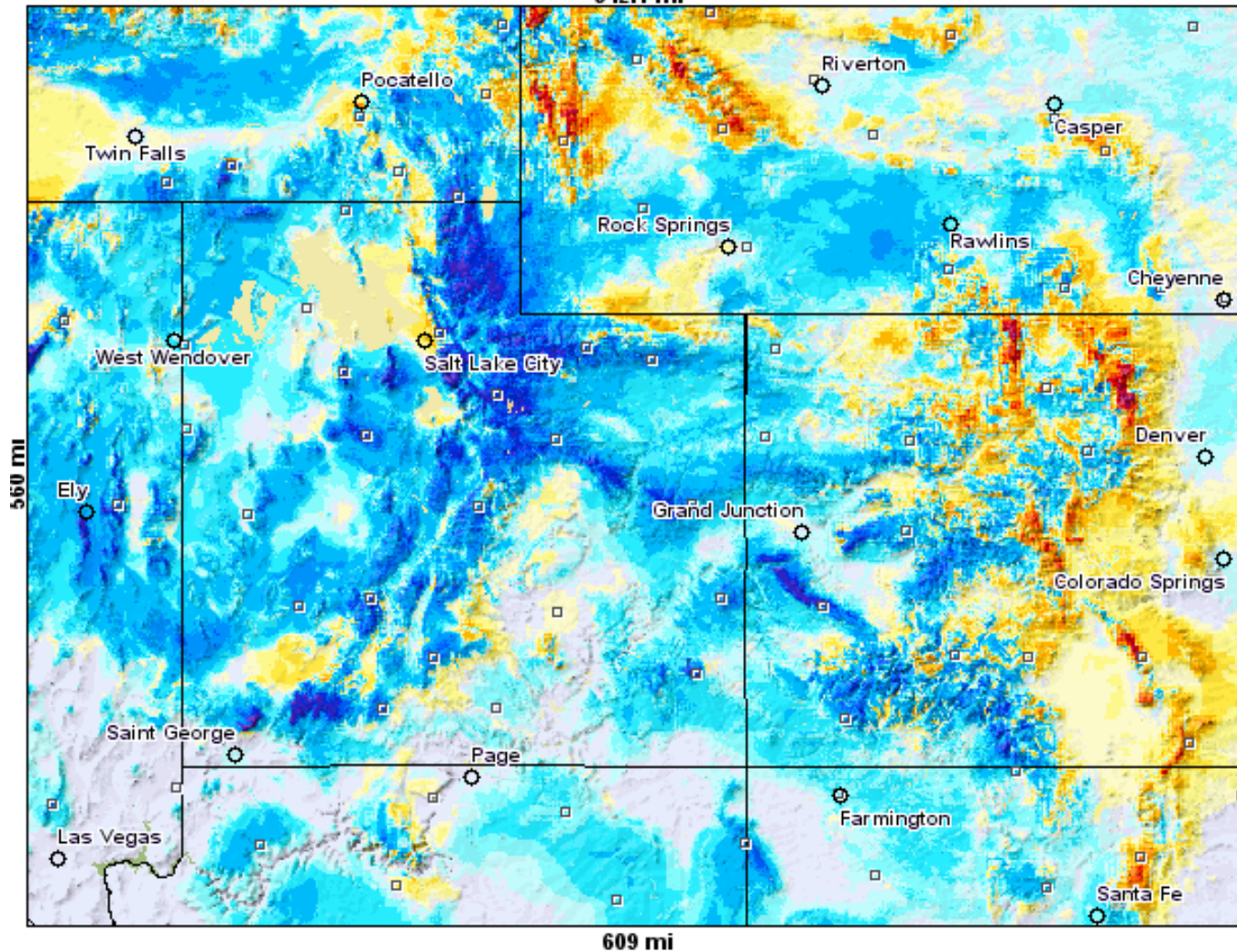
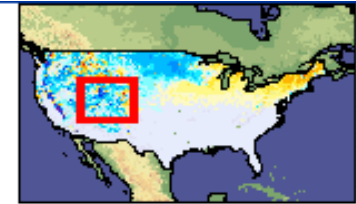
Snow: Six Creeks in Salt Lake County



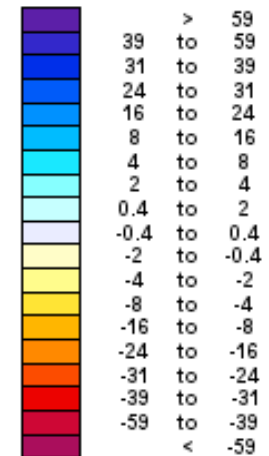
Web Reference: <http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open>

Snow Maps

Modeled Snow Depth Departure from Normal (Daily) for 2011 January 5, 6:00 Z
542.1 mi

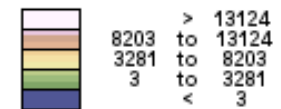


Inches of depth



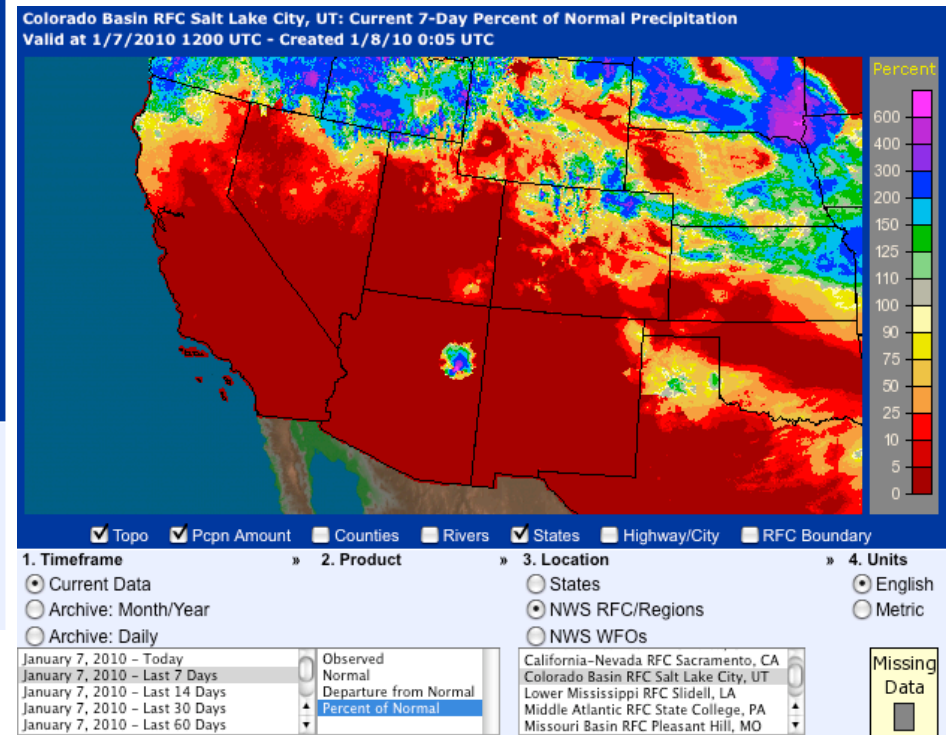
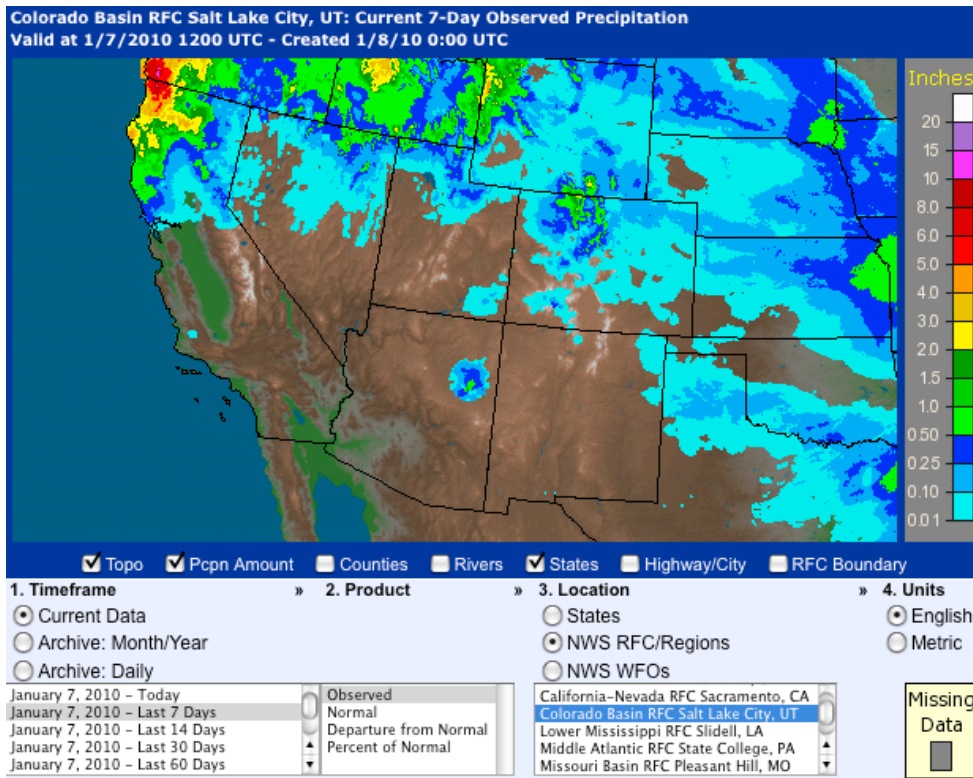
Not Estimated

Elevation in feet
(Not estimated)



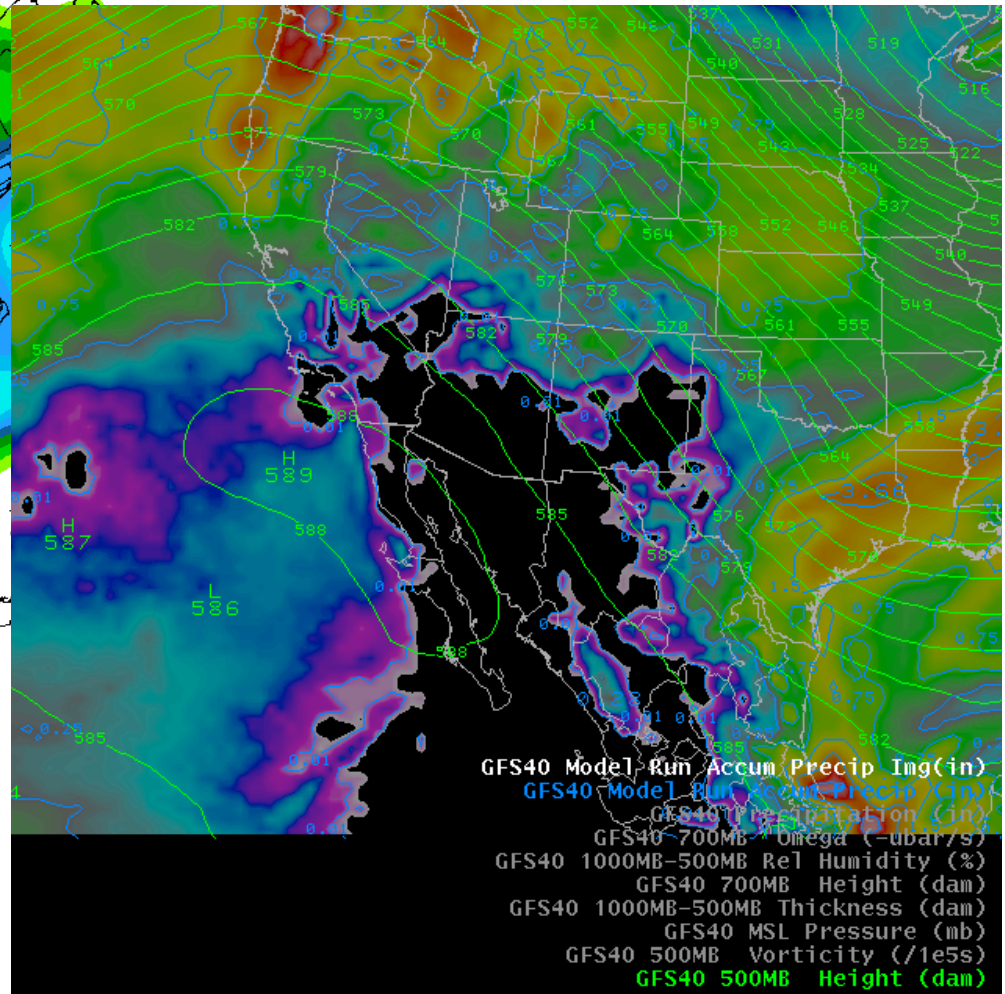
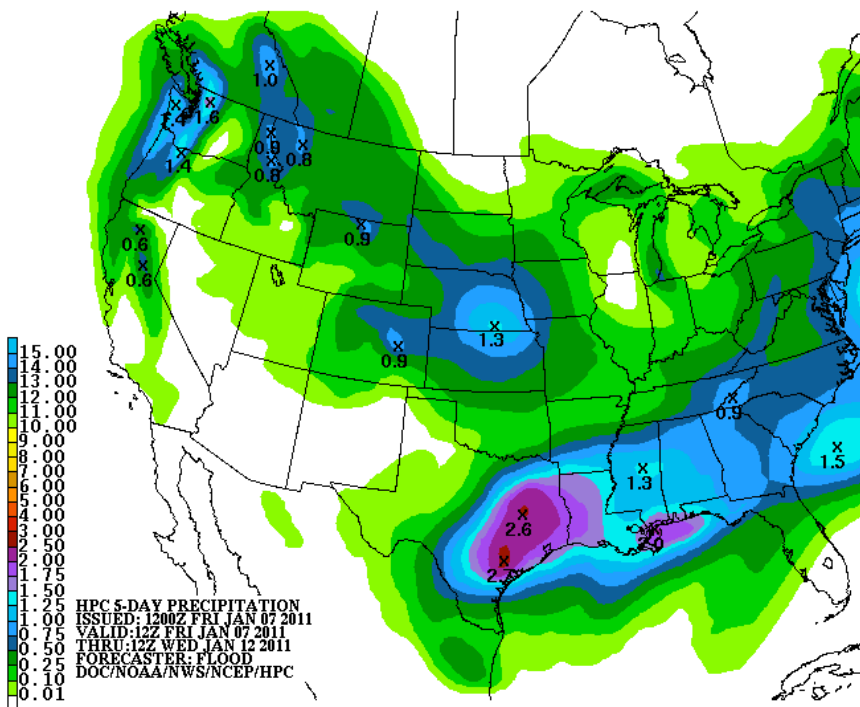
Web Reference: <http://www.nohrsc.nws.gov>

Last 7 days...



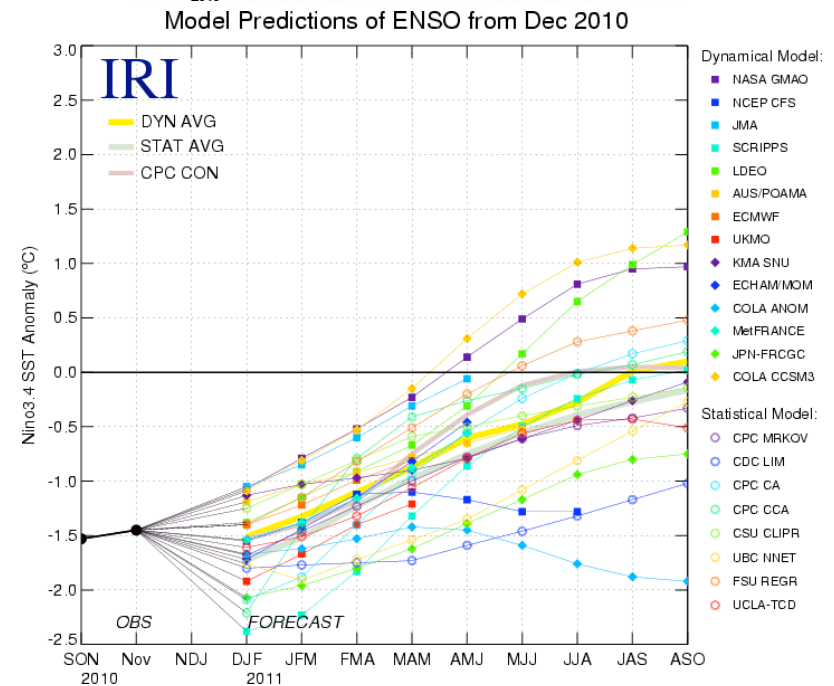
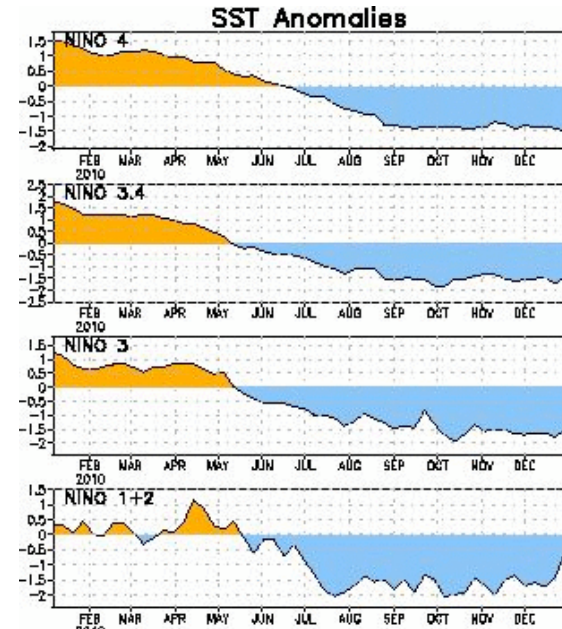
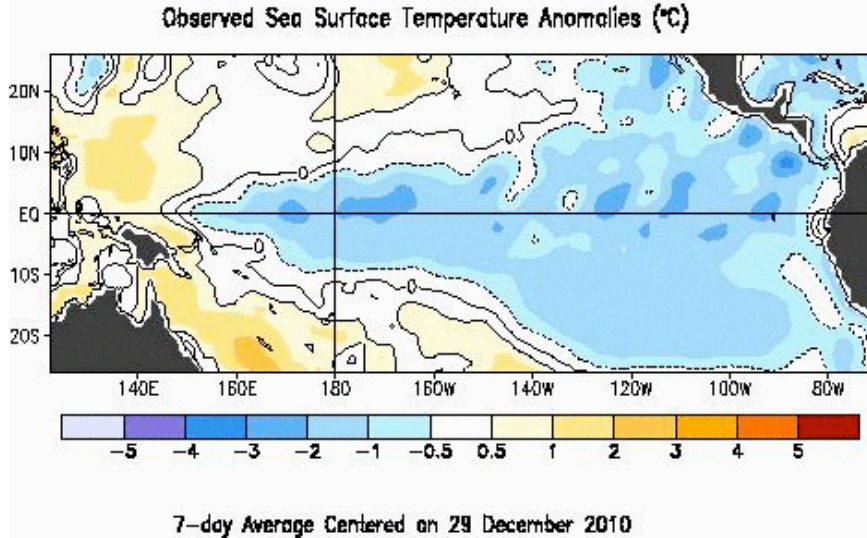
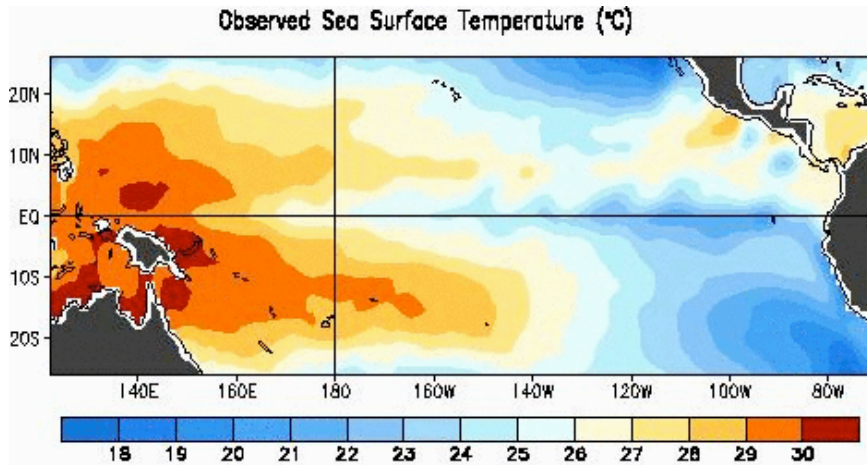
Web Reference: <http://water.weather.gov>

Forecast Precipitation

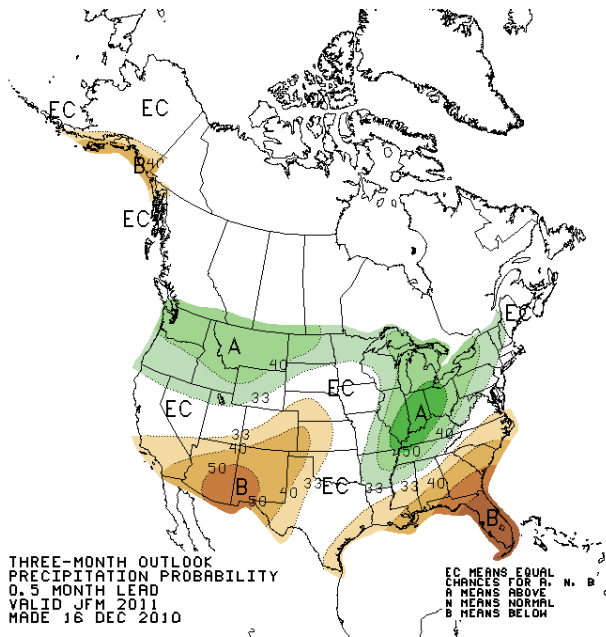
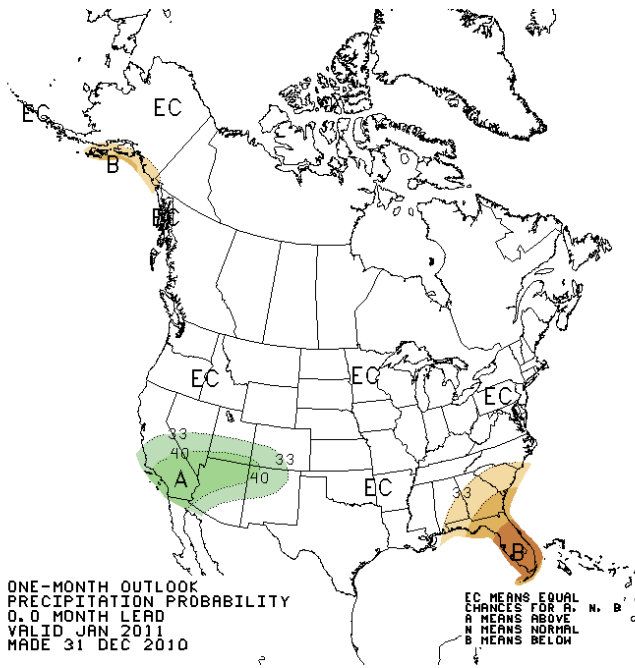


- One storm early next week
- Second storm late next week
- Maximum precipitation around 1" from each storm

La Nina Update



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

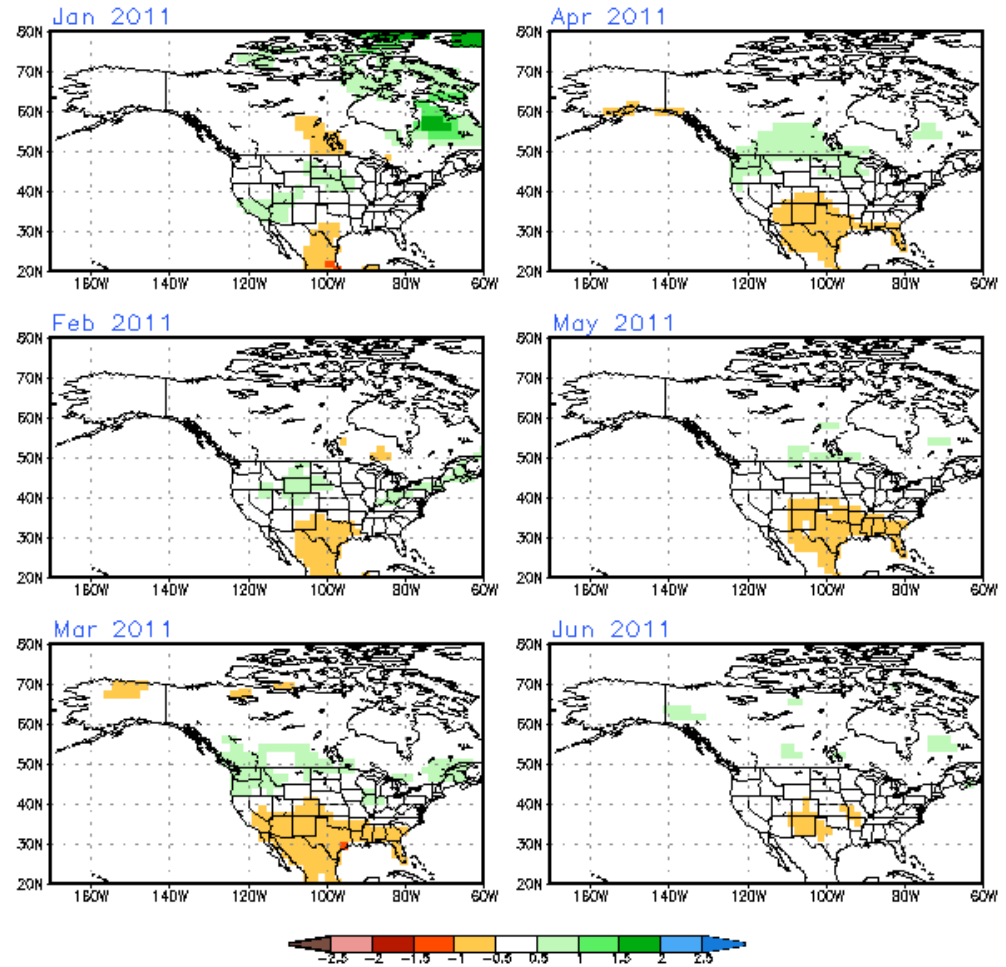


NWS/NCEP/CPC

Initial conditions: 27Dec2010–5Jan2011

Last update: Fri Jan 7 2011

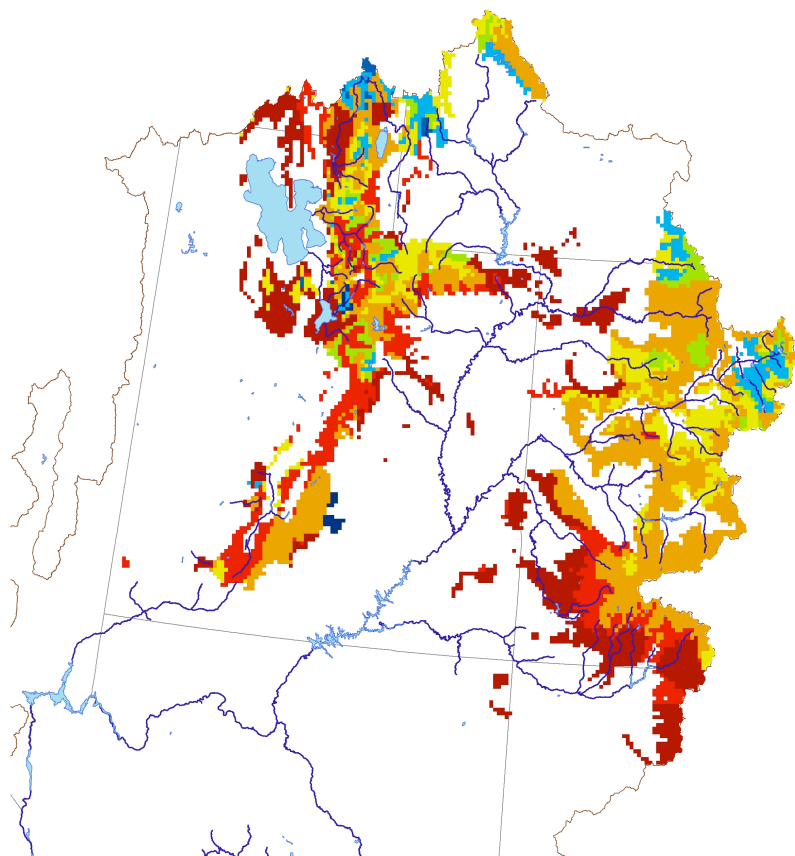
CFS monthly standardized Prec



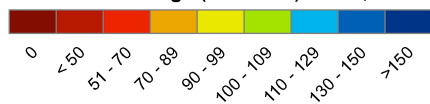
Web Reference: <http://www.cbrfc.noaa.gov/climate/climoForecasts.cgi>

Soil Moisture

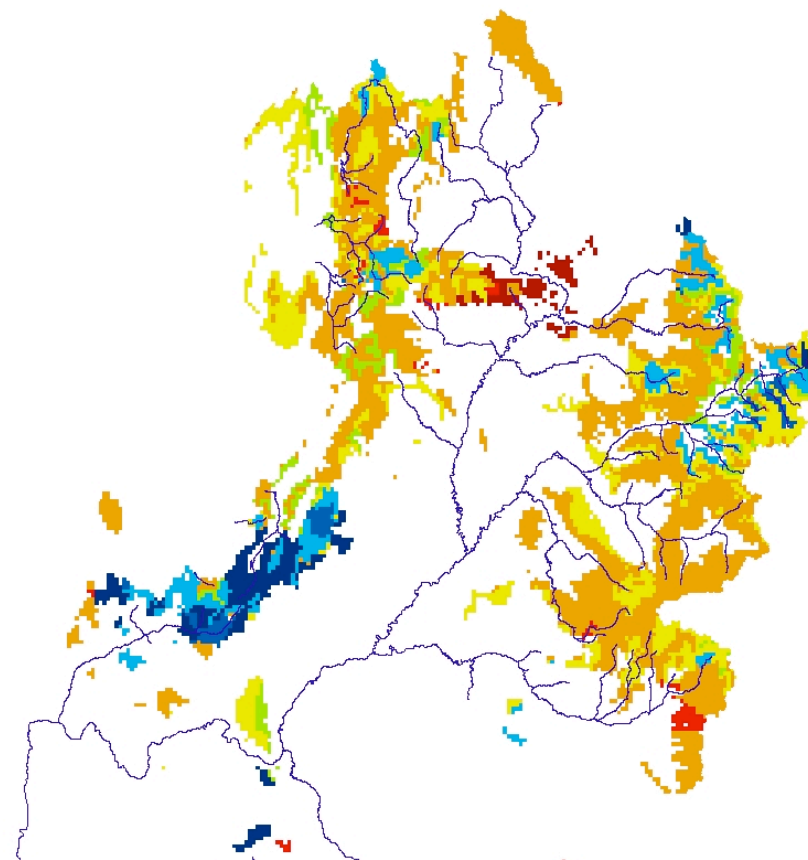
Upper Colorado
NWSRFS Modeled Lower Zone Soil Moisture



Percent of Average (>1.0 inch) Nov 1, 2009

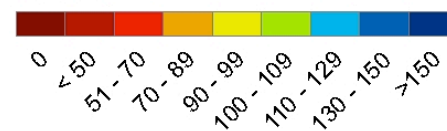


Upper Colorado
NWSRFS Modeled Lower Zone Soil Moisture



Percent Average (> 1.0 inch) November 1, 2010

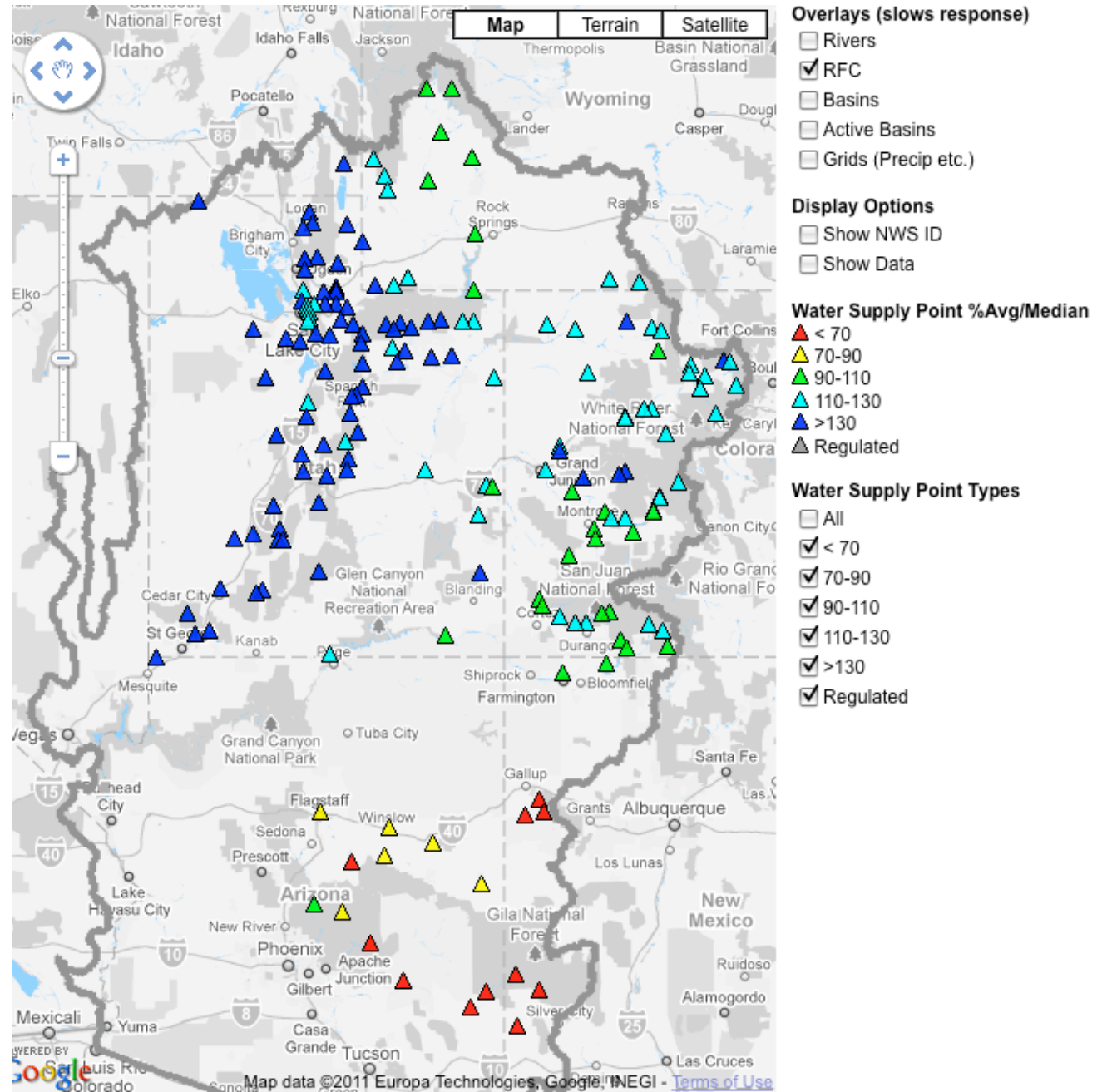
VALUE



January 1, 2011 Water Supply Forecasts

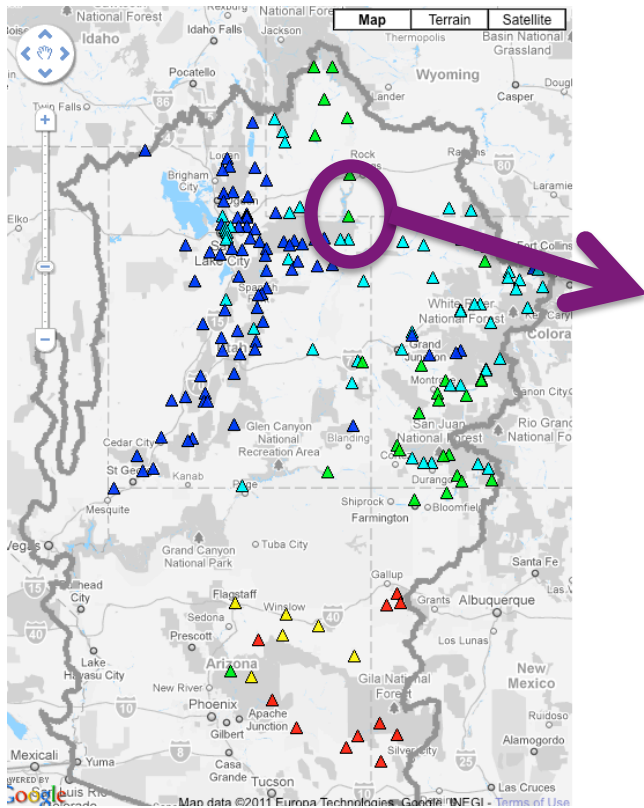
Highlights:

- Above average forecasts throughout Upper basin and Great basin
- Many forecasts higher than previous January forecasts since 1997
- Mixed bag in Lower basin



lat: 38.21 lng: -110.72, 6, Data from Thu, 06 Jan 2011 11:48:23 -0700

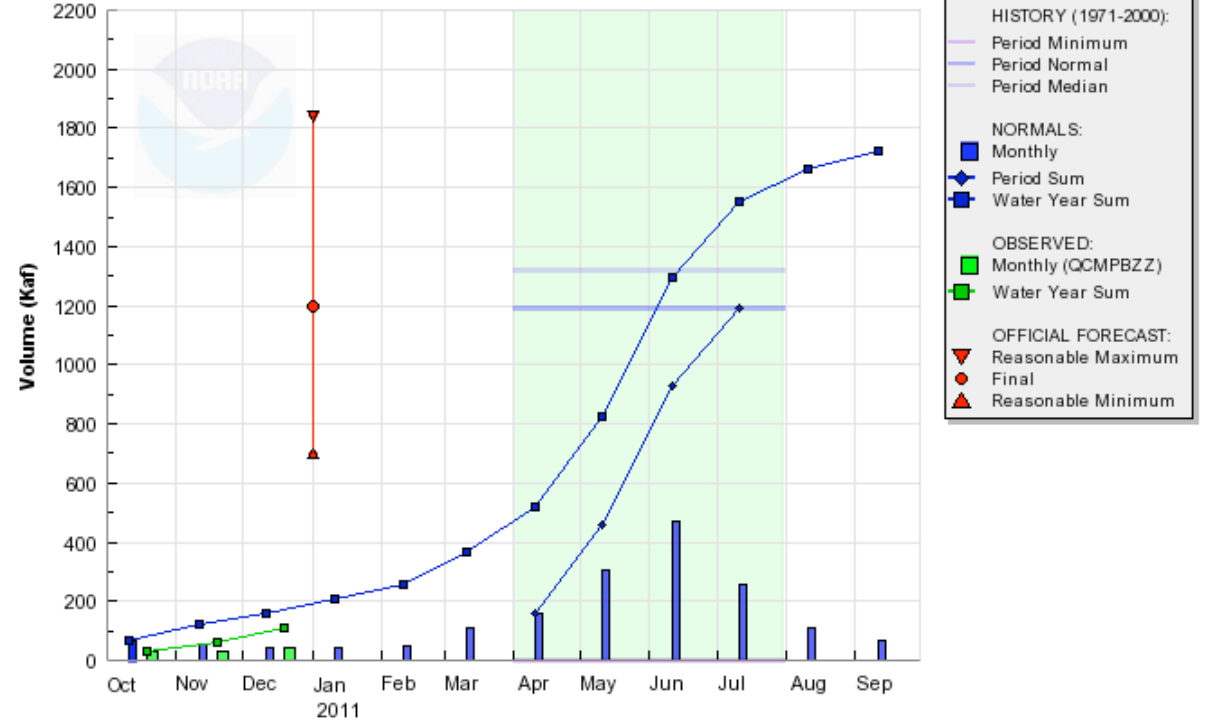
Web Reference: www.cbrfc.noaa.gov/gmap/gmapm.php?wcon=checked



Seasonal Water Supply Forecast Forecast Period: Apr-Jul

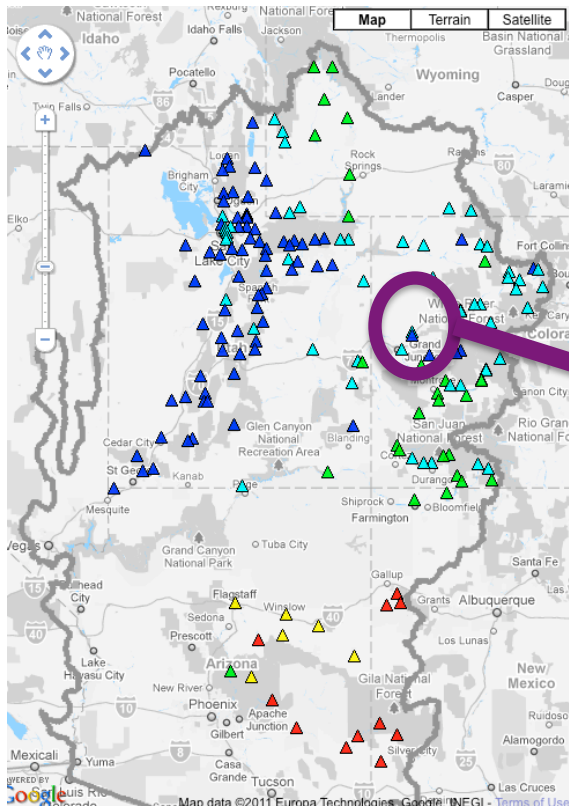
1200 kaf 50% Exceedence (Official Forecast)		127.1% of Historical Median	100.8% of Historical Mean
700 kaf 90% Exceedence	1840 kaf 10% Exceedence	32nd of 70 Official Historical Flows	
Forecast Issued: Jan 1 2011 View Water Supply Forecast Plot			

GREEN - FLAMING GORGE RES, FLAMING GORGE DAM, AT (GRNLL1)
Water Year 2011, Forecast Period Apr-Jul (highlighted)



CBRFC/NWS/NOAA 01/07/11 15:25:57 UTC

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



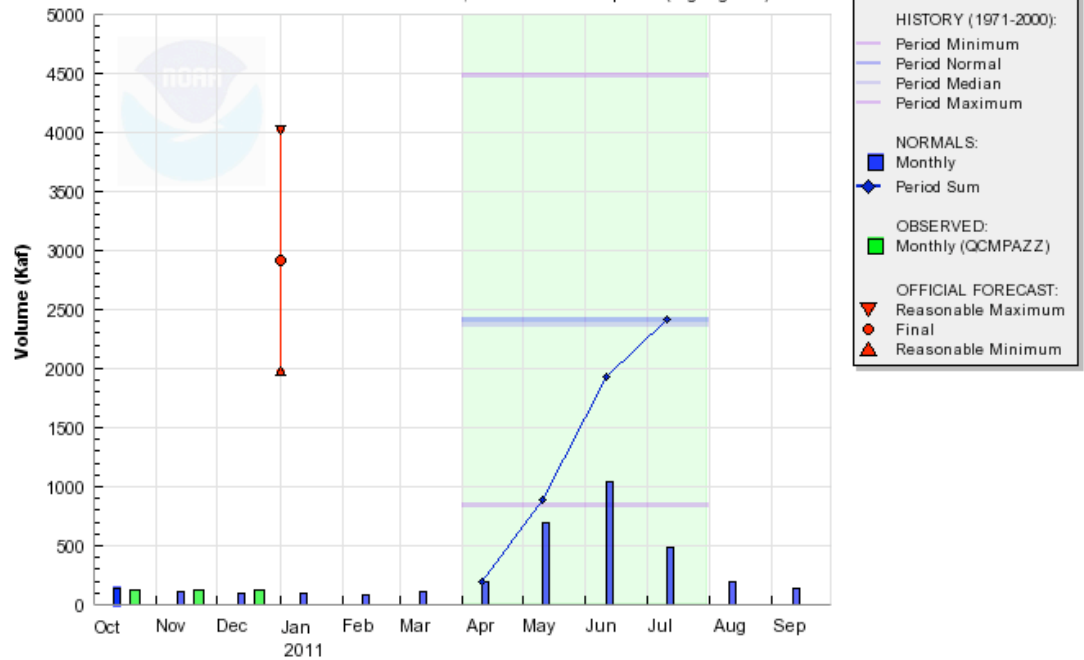
Seasonal Water Supply Forecast ?

Forecast Period: Apr-Jul

<p>2910 kaf 50% Exceedence (Official Forecast)</p>		<p>136.6% of Historical Median</p>	<p>120.2% of Historical Mean</p>
<p>1980 kaf 90% Exceedence</p>	<p>4020 kaf 10% Exceedence</p>	<p>17th of 77 Official Historical Flows</p>	
<p>Forecast Issued: Jan 1 2011</p>		<p>View Water Supply Forecast Plot</p>	

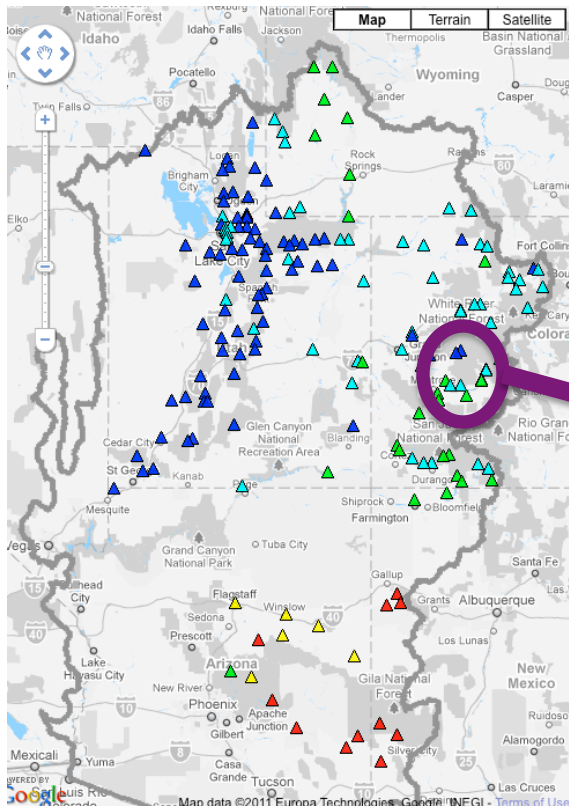
COLORADO - CAMEO, NR (CAMC2)

Water Year 2011, Forecast Period Apr-Jul (highlighted)



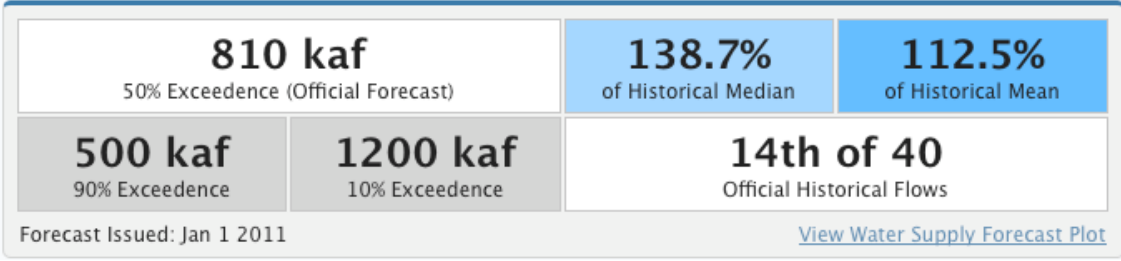
CBRFC/NWS/NOAA 01/07/11 15:24:52 UTC

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



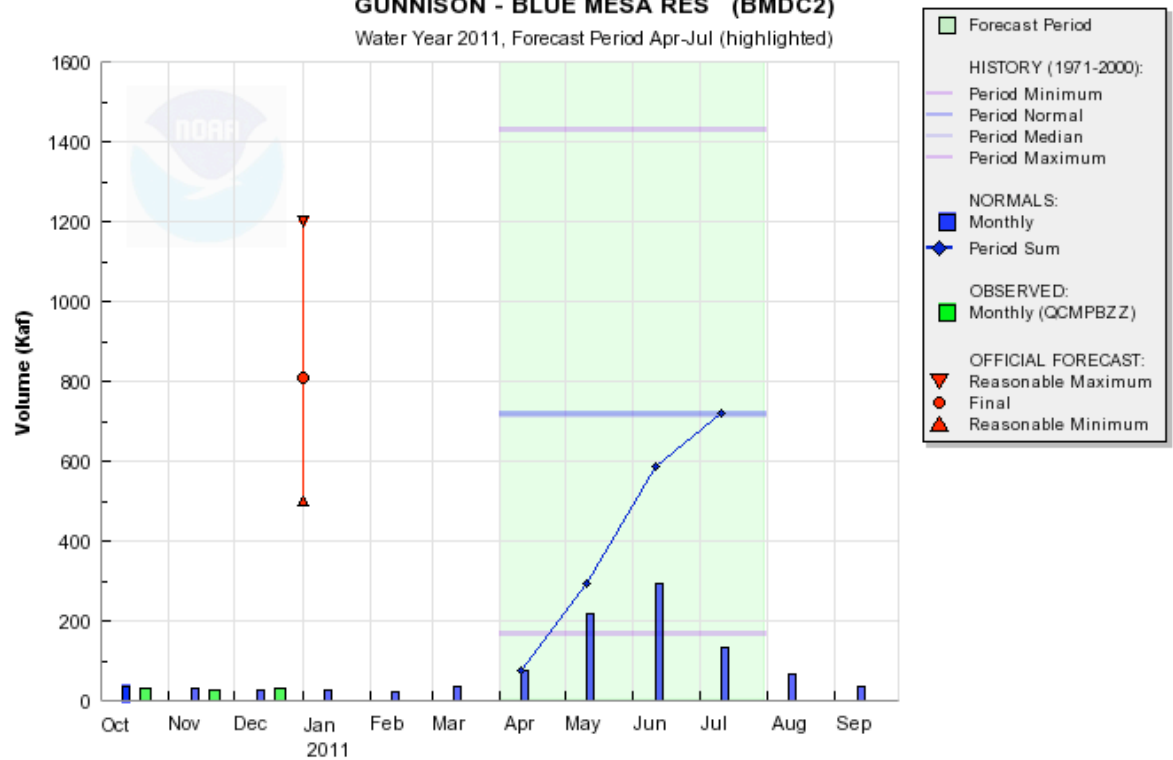
Seasonal Water Supply Forecast Ⓜ

Forecast Period: Apr-Jul



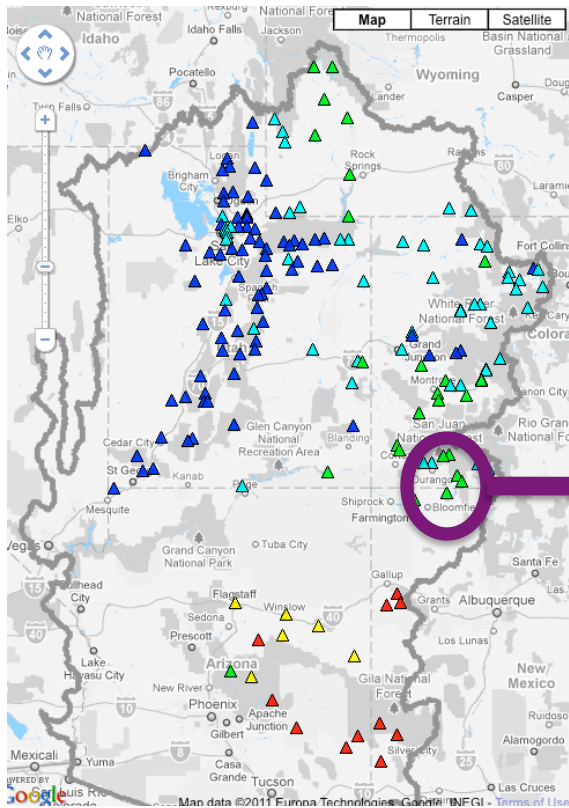
GUNNISON - BLUE MESA RES (BMD2)

Water Year 2011, Forecast Period Apr-Jul (highlighted)



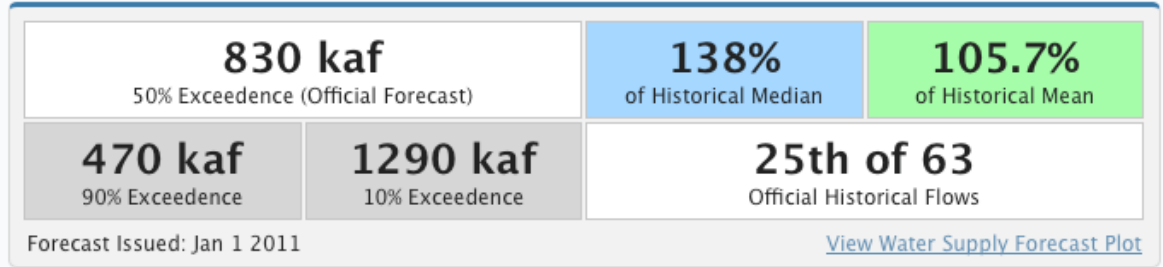
CBRFC/NWS/NOAA 01/07/11 15:23:45 UTC

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



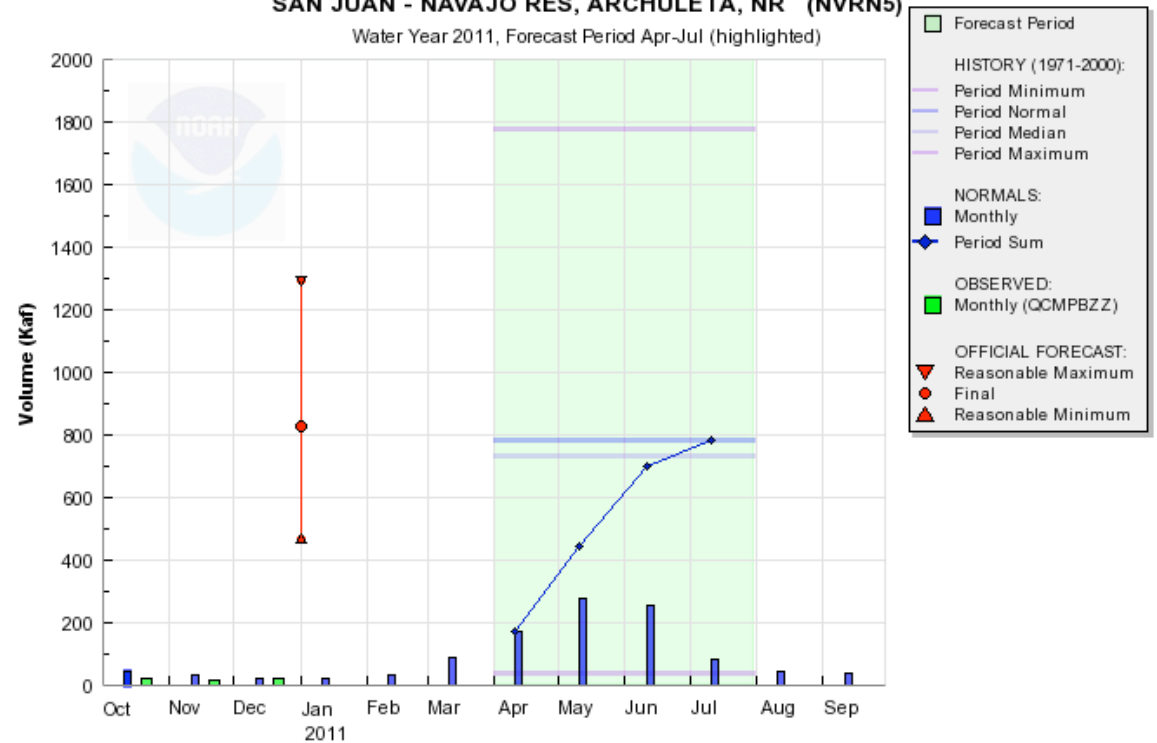
Seasonal Water Supply Forecast ?

Forecast Period: Apr-Jul



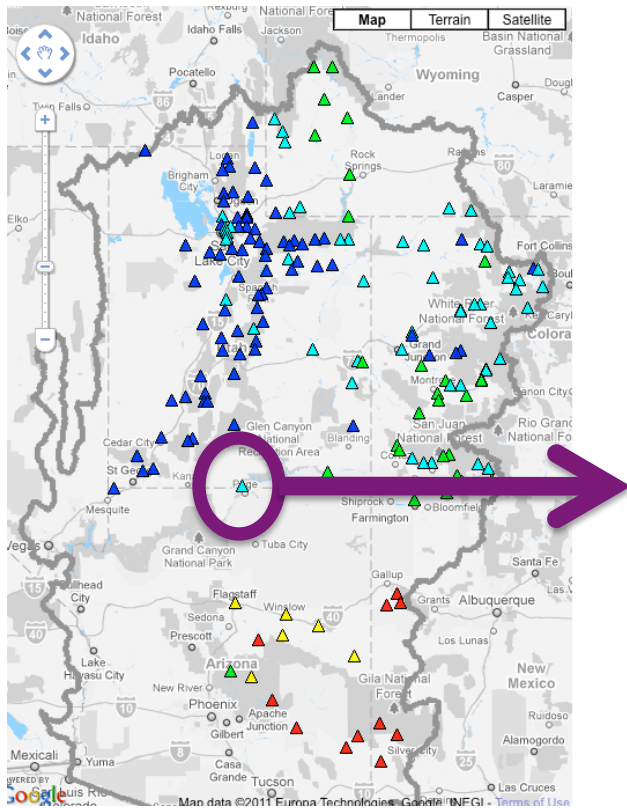
SAN JUAN - NAVAJO RES, ARCHULETA, NR (NVRN5)

Water Year 2011, Forecast Period Apr-Jul (highlighted)



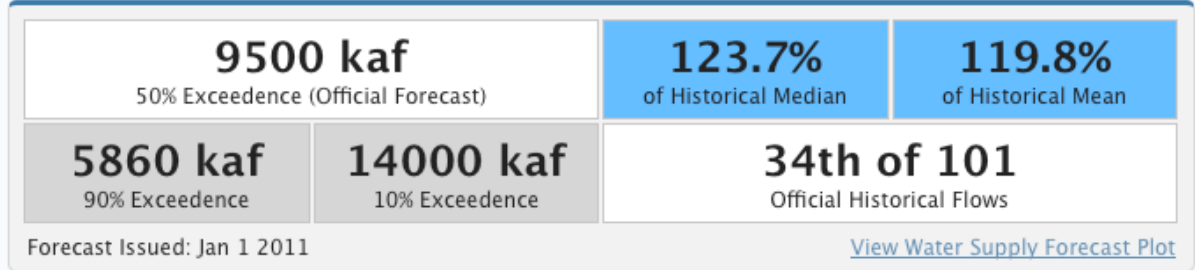
CBRFC/NWS/NOAA 01/07/11 15:22:23 UTC

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



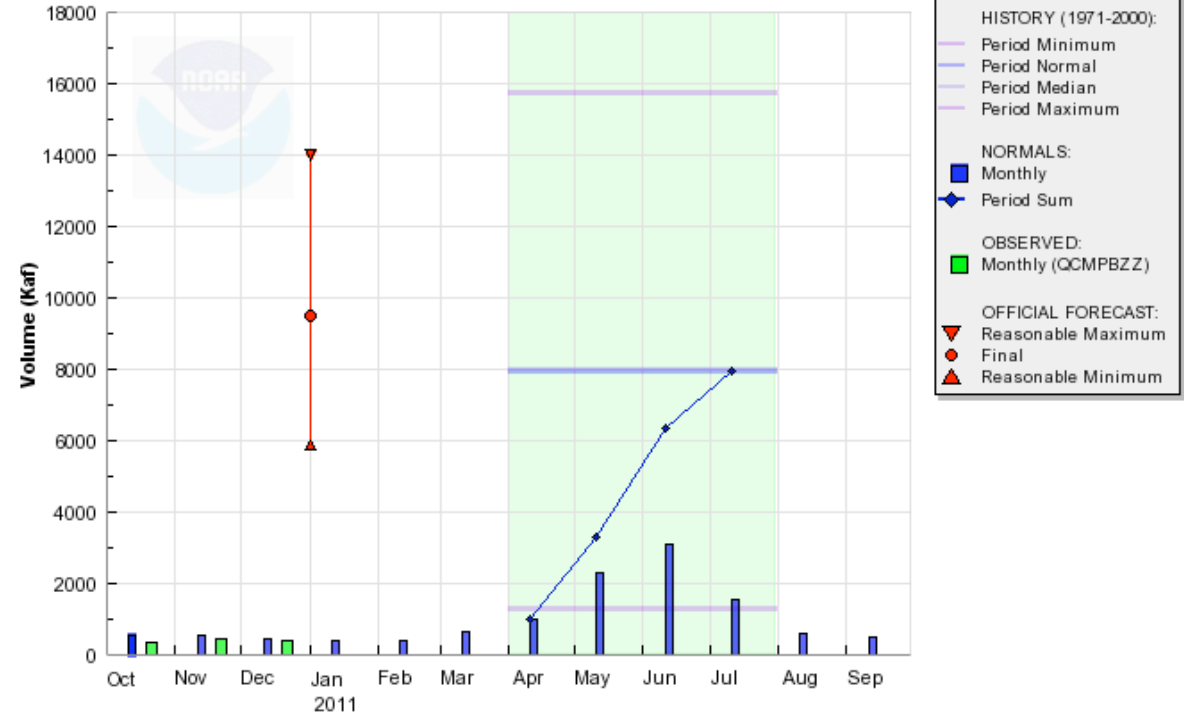
Seasonal Water Supply Forecast ?

Forecast Period: Apr-Jul



COLORADO - LAKE POWELL, GLEN CYN DAM, AT (GLDA3)

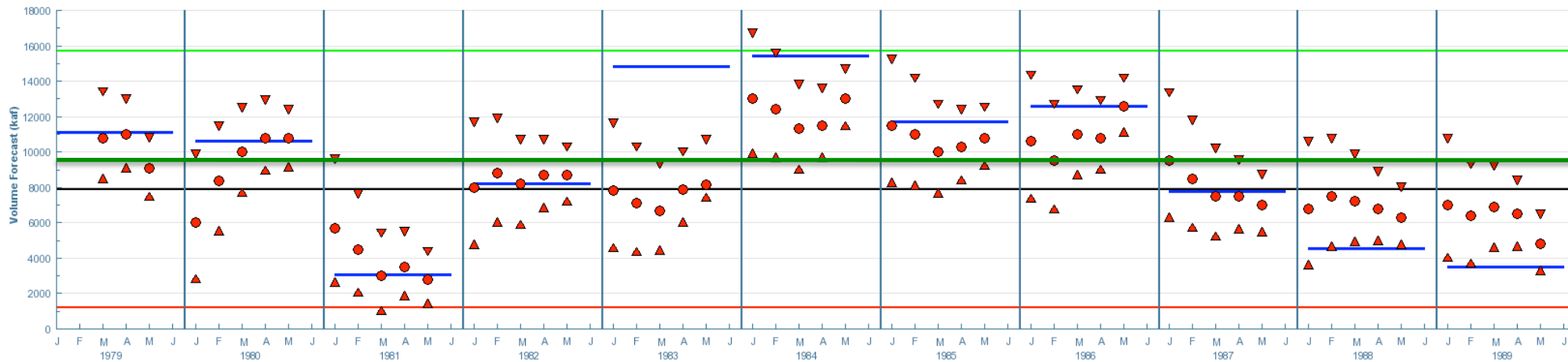
Water Year 2011, Forecast Period Apr-Jul (highlighted)



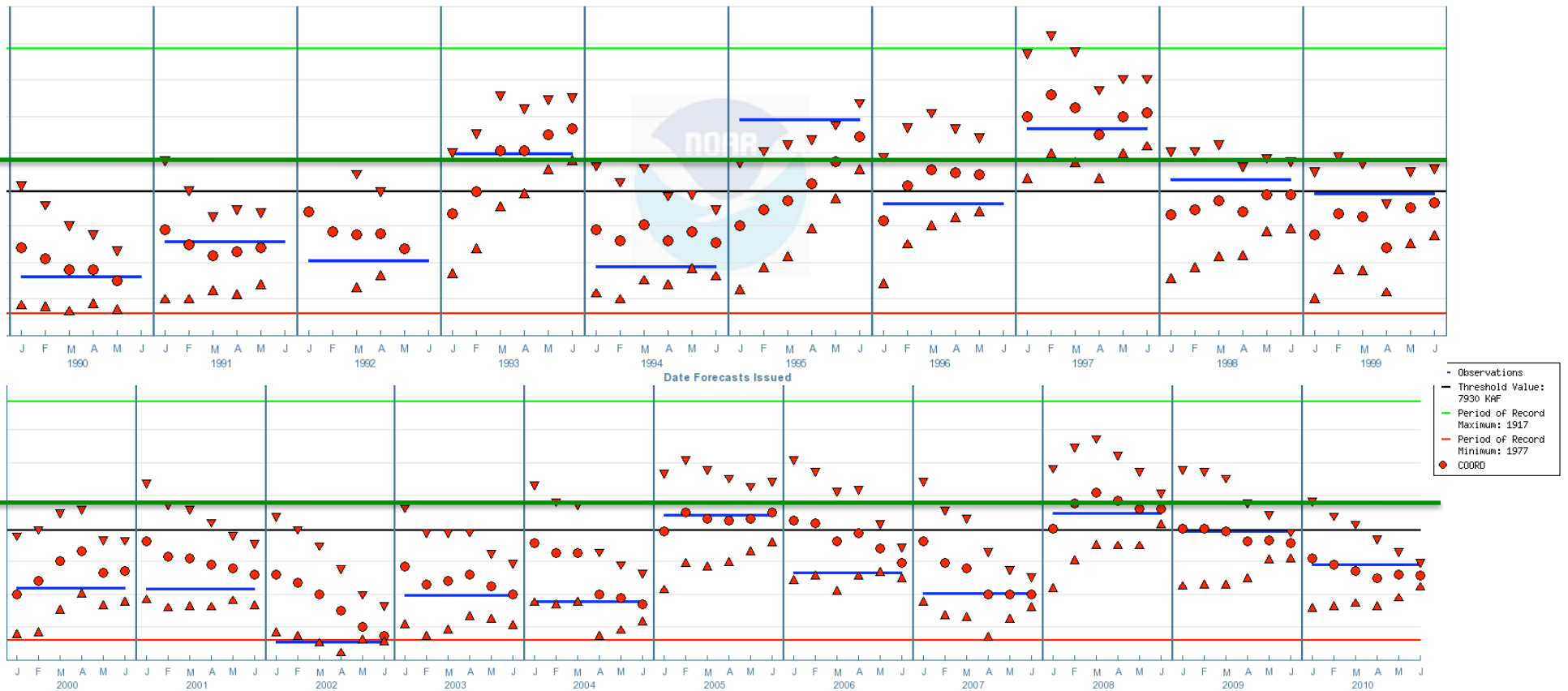
Example ESP guidance:

- Official Forecast: 120%
- ESP with QPF: 125%
- ESP no QPF: 131%
- ESP with GFS/CFS: 125%
- ESP with GFS: 131%

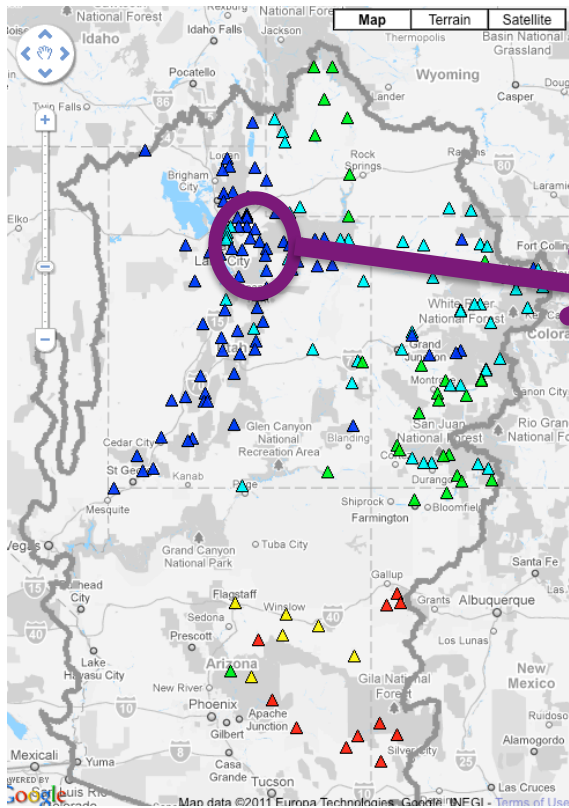
Web Reference: www.cbrfc.noaa.gov/gmap/gmapm.php?wcon=checked



Historical - COLORADO - LAKE POWELL, GLEN CYN DAM, AT (GLDA3)
Forecast Period: Apr - Jul



- Observations
- Threshold Value: 7930 kaf
- Period of Record Maximum: 1917
- Period of Record Minimum: 1977
- o COORD



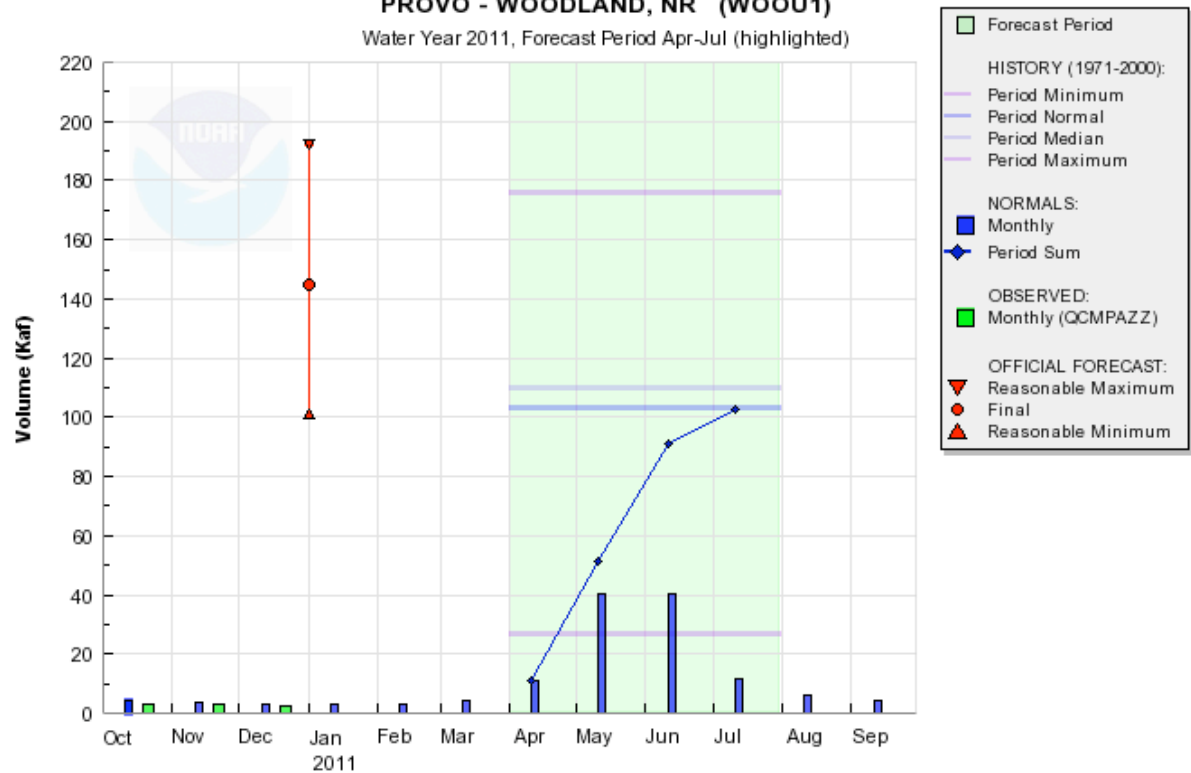
Seasonal Water Supply Forecast ?

Forecast Period: Apr-Jul

145 kaf 50% Exceedence (Official Forecast)		148.4% of Historical Median	140.8% of Historical Mean
101 kaf 90% Exceedence	192 kaf 10% Exceedence	6th of 50 Official Historical Flows	
Forecast Issued: Jan 1 2011			
View Water Supply Forecast Plot			

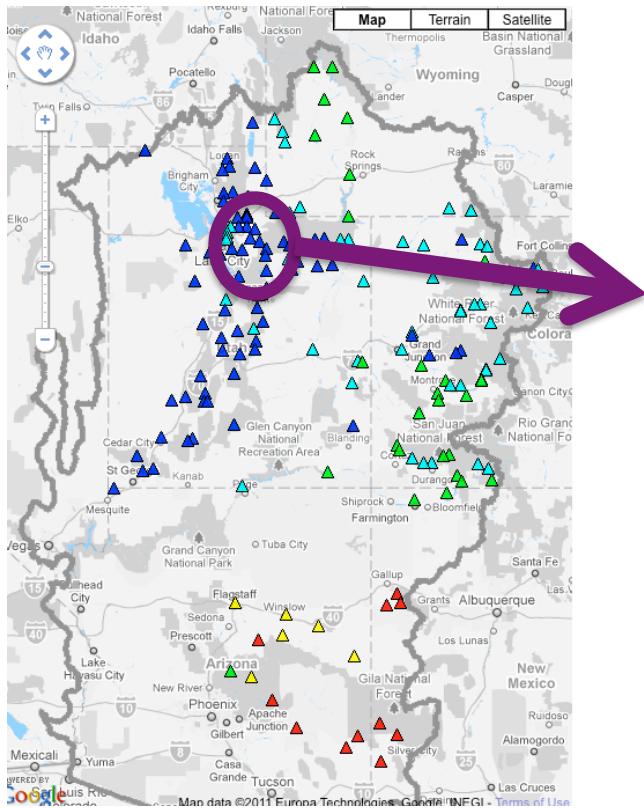
PROVO - WOODLAND, NR (WOOU1)

Water Year 2011, Forecast Period Apr-Jul (highlighted)



CBRFC/NWS/NOAA 01/07/11 15:19:45 UTC

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



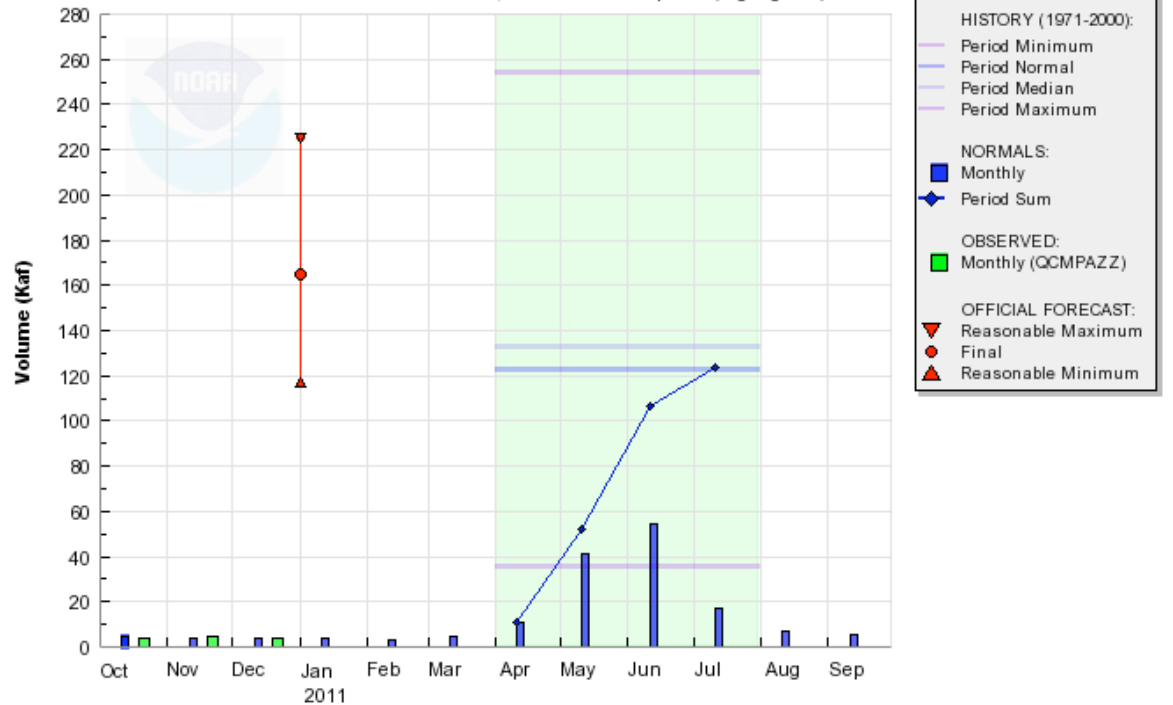
Seasonal Water Supply Forecast ?

Forecast Period: Apr-Jul

165 kaf 50% Exceedence (Official Forecast)		139.1% of Historical Median	134.1% of Historical Mean
117 kaf 90% Exceedence	225 kaf 10% Exceedence	14th of 106 Official Historical Flows	
Forecast Issued: Jan 1 2011		View Water Supply Forecast Plot	

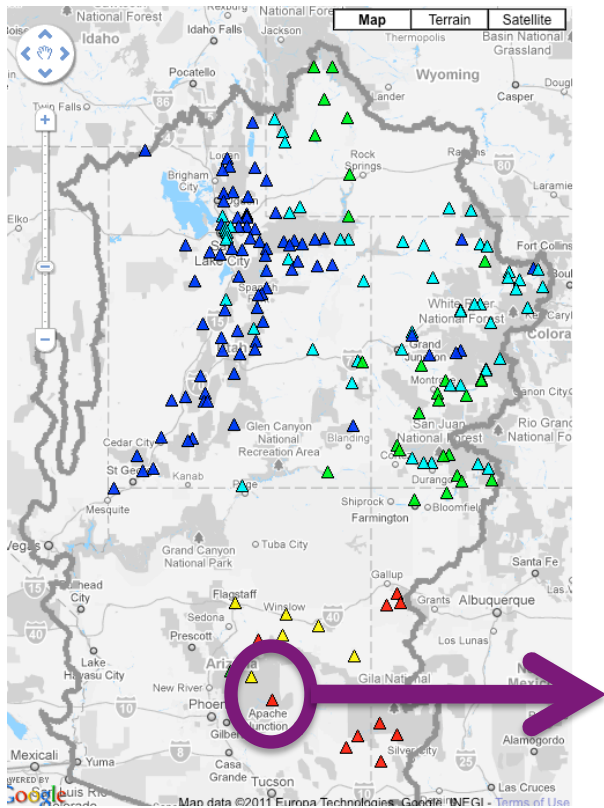
WEBER - OAKLEY, NR (OAWU1)

Water Year 2011, Forecast Period Apr-Jul (highlighted)



CBRFC/NWS/NOAA 01/07/11 15:18:39 UTC

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

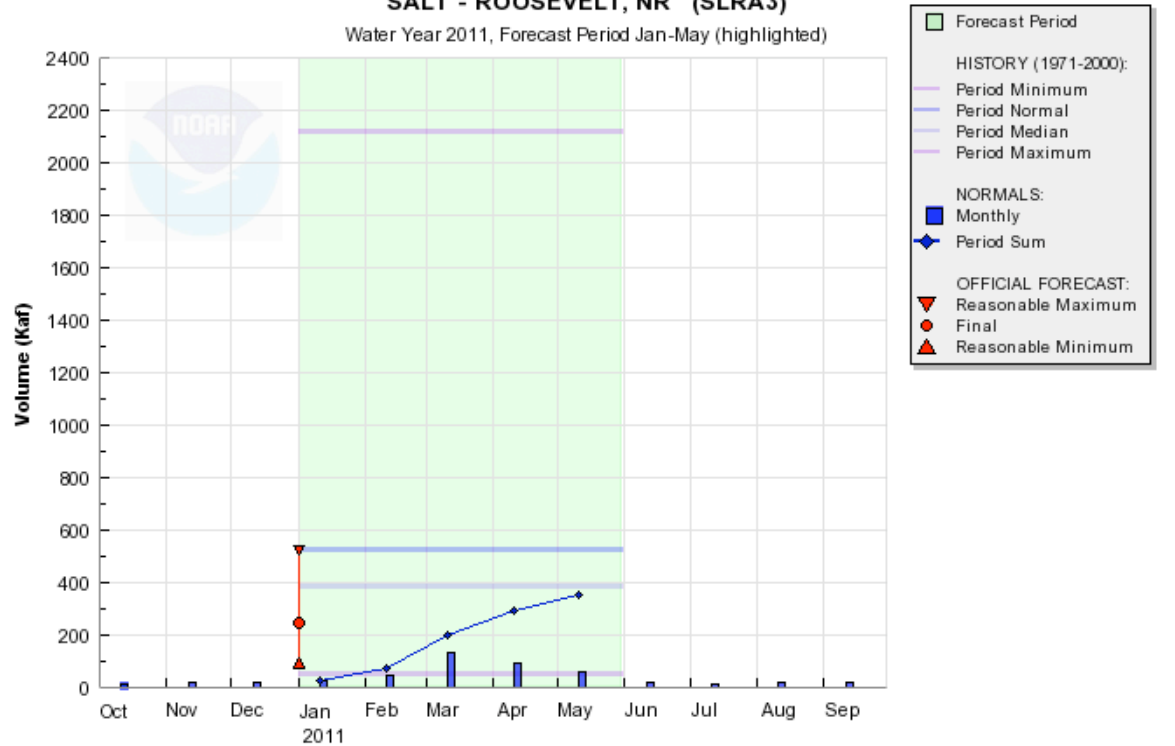


Seasonal Water Supply Forecast

Forecast Period: Jan-May

<p>250 kaf 50% Exceedence (Official Forecast)</p>		<p>90.1% of Historical Median</p>	<p>47.6% of Historical Mean</p>
<p>94 kaf 90% Exceedence</p>	<p>525 kaf 10% Exceedence</p>	<p>54th of 97 Official Historical Flows</p>	
<p>Forecast Issued: Jan 1 2011</p>		<p>View Water Supply Forecast Plot</p>	

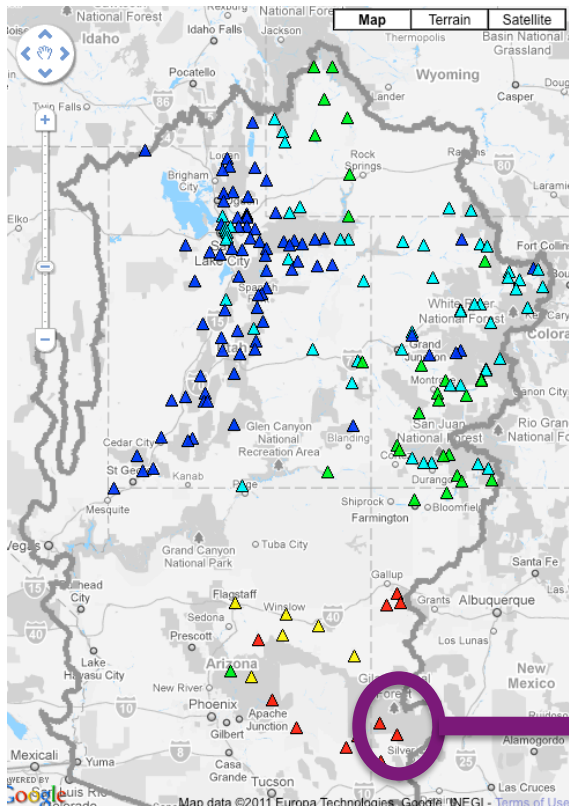
SALT - ROOSEVELT, NR (SLRA3)
Water Year 2011, Forecast Period Jan-May (highlighted)



No data before 2010-10-01

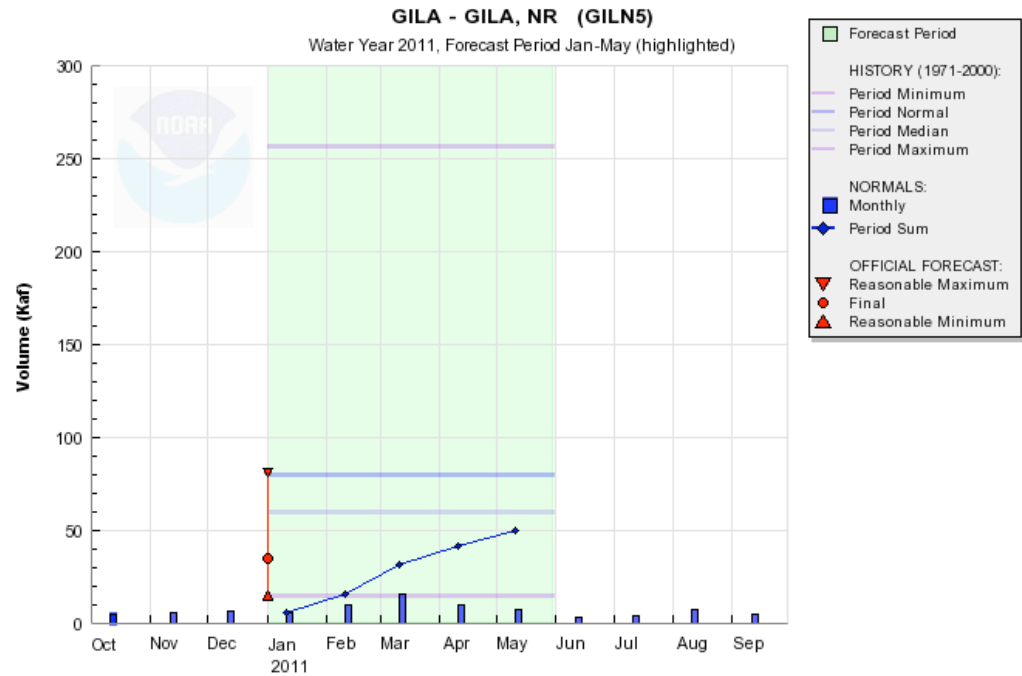
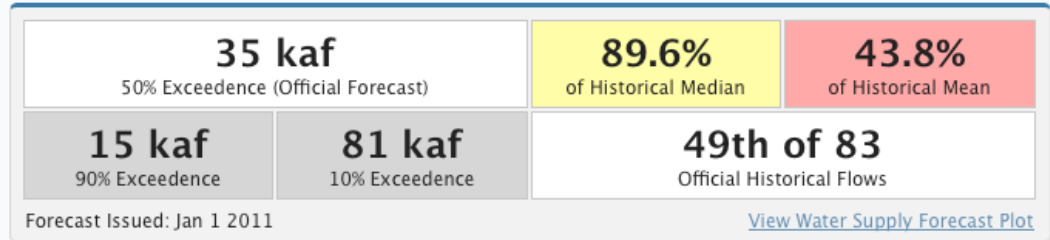
CBRFC/NWS/NOAA 01/07/11 15:17:13 UTC

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



Seasonal Water Supply Forecast ?

Forecast Period: Jan-May

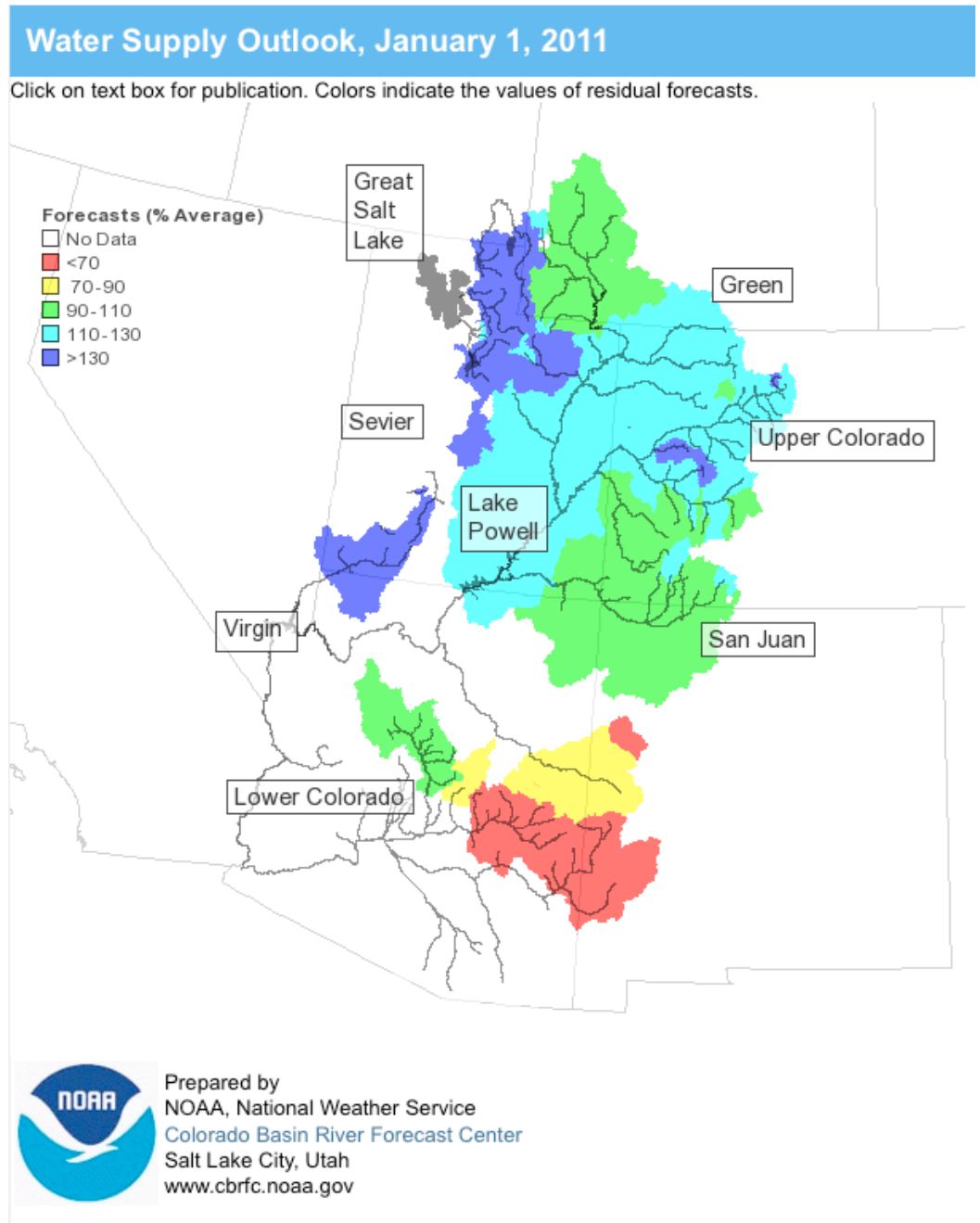


No data before 2010-10-01

CBRFC/NWS/NOAA 01/07/11 15:15:47 UTC

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 Mainstem Specific Site Forecasts (kaf)

Upper Colorado Water Supply Outlook, January 1, 2011

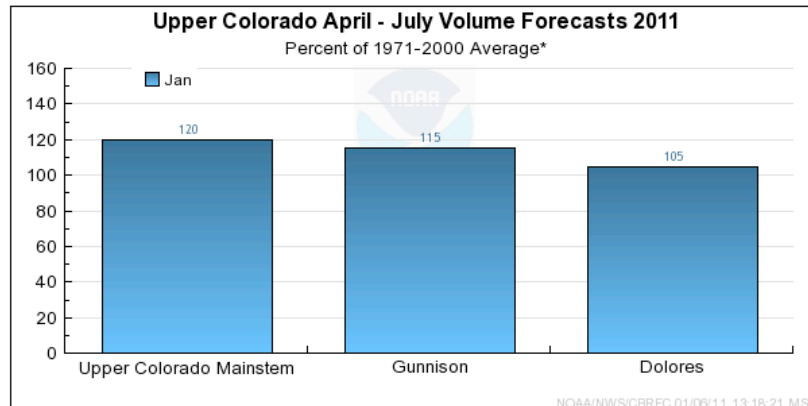


Prepared by Brenda Alcorn, Tracy Cox
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Contents

- Upper Colorado Summary
- Upper Colorado Mainstem Basin Conditions
- Gunnison Basin Conditions
- Dolores Basin Conditions
- Upper Colorado Mainstem Specific Site Forecasts
- Gunnison Specific Site Forecasts
- Dolores Specific Site Forecasts
- Reservoir Monthly Inflow Forecasts
- Reservoir Contents
- Monthly Streamflows
- Precipitation Maps
- Definitions
- Additional Information
- Questions or Comments

Upper Colorado Summary



*Median of forecasts within each basin.

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
 - Green: Ashley Nielson
 - San Juan / Gunnison: Tracy Cox
 - Great Basin: Brent Bernard
 - Lower Colorado (below Lake Powell): Greg Smith
- Here now:
 - Sign up for all webinars through May 2011
 - Weekly ESP model guidance
 - Email product updates via govdelivery
 - Changes to CBRFC webpage
- Coming soon:
 - New water supply publication – input welcome
 - Blog

More Resources

- www.cbrfc.noaa.gov
- Wateroutlook.nwrfc.noaa.gov
- Tentative February webinar: 1pm Feb 7

Feedback, Questions, Concerns always welcome....



Kevin Werner

CBRFC Service Coordination Hydrologist

Phone: 801.524.5130

Email: kevin.werner@noaa.gov

