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

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](http://www.ncdc.noaa.gov/)

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 decreases are observed in the upper Green River and the Bear River. For the entire upper Colorado above Lake Powell, the difference is 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](http://www.ncdc.noaa.gov/)

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](http://www.ncdc.noaa.gov/)
   The snow time series plots on the CBRFC pages are now using the 1981-2010 period of record for calculated 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/N CDC 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.
January 2011 Precipitation

KSLC Precipitation for 1/2012

- Observed
- Normal
- Daily Record
Number of SNOTELs with daily record minimum SWE

Number of SNOTELs with SWE < 1.0

Date

J

F

Number of SNOTELs

0

5

10

15

20

25

30

35

40
January 5, 2012

February 6, 2012

January 5, 2012
Snow

February 6, 2012

Snow: Upper Green Basin (Fontelle)
Snow:
Colorado Mainstem (above Cameo)
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/staMon/sweplot/sweplot.cgi???open
Snow: Lower Colorado

Colorado Basin River Forecast Center
Lower Colorado Group

Average 1981-2010  2012  2011  2013

To Date: 79% (4.4 / 5.5)
Seasonal: 68% (4.4 / 6.4)
Met rate -0.0 in/day averaged over last 3 days.

Web Reference: http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open
Snow: Six Creeks in Salt Lake County

Colorado Basin River Forecast Center
Six Creeks Headwaters Group


To Date: 65% (10.2 / 15.7)
Seasonal: 41% (10.2 / 25.1)
Accumulation rate 0.0 in/day averaged over last 3 days.

Created 02/06/15 5:4 UTC
NOAA/CBRFC, 2012

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

Modeled Snow Depth Departure from Normal (Daily) for 2012 February 6, 6:00 Z

Inches of depth

Elevation in feet

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
La Nina Update

Observed Sea Surface Temperature (°C)

Observed Sea Surface Temperature Anomalies (°C)

7-day Average Centered on 01 February 2012

Soil Moisture

Upper Colorado
NWSRFS Modeled Lower Zone Soil Moisture

Percent Average (> 1.0 Inch) November 1, 2010

Value

0
< 50
50 - 70
70 - 90
90 - 99
100 - 109
110 - 129
130 - 150
> 150

Legend:

> 0
> 0.25
> 0.5
> 1
> 1.5
> 2

Scale: 100 km
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

Seasonal Water Supply Forecast

Forecast Period: Apr-Jul

450 kaf
50% Exceedence (Official Forecast)

250 kaf
90% Exceedence

705 kaf
10% Exceedence

34th of 42
Official Historical Flows

Forecast Issued: Feb 1 2012

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

Seasonal Water Supply Forecast

- **130 kaf**: 50% Exceedence (Official Forecast)
- **50 kaf**: 90% Exceedence
- **270 kaf**: 10% Exceedence
- **74th of 99**: Official Historical Flows

Forecast Period: Feb - May

Forecast Issued: Feb 1 2012

Online Publication

Water Supply Outlook, February 1, 2012

New 1981-2010 Averages being used this year.
Click on text box for publication. Colors indicate the values of residual forecasts.

Forecasts (% Average)
- No Data
- <70
- 70-90
- 90-110
- 110-130
- >130

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

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- Reservoir Contents
- Monthly Streamflows
- Precipitation Maps
- Definitions
- Additional Information
- Questions or Comments

Upper Colorado Summary

Upper Colorado April - July Volume Forecasts 2011

<table>
<thead>
<tr>
<th>Basin</th>
<th>Forecast Period</th>
<th>90% Exceedance Volume</th>
<th>50% Exceedance Volume</th>
<th>Percent Average</th>
<th>10% Exceedance Volume</th>
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<tr>
<td>Colorado</td>
<td>April-July</td>
<td>200</td>
<td>260</td>
<td>124</td>
<td>370</td>
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<td>Willow Creek</td>
<td>April-July</td>
<td>44</td>
<td>70</td>
<td>137</td>
<td>102</td>
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<td>April-July</td>
<td>15</td>
<td>23</td>
<td>115</td>
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<td>Williams Fork</td>
<td>April-July</td>
<td>76</td>
<td>110</td>
<td>116</td>
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<td>April-July</td>
<td>46</td>
<td>76</td>
<td>127</td>
<td>114</td>
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<tr>
<td>Blue</td>
<td>April-July</td>
<td>134</td>
<td>200</td>
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<td>1070</td>
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<td>380</td>
<td>113</td>
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<td>1720</td>
<td>119</td>
<td>2410</td>
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<td>Frying Pan</td>
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<td>160</td>
<td>113</td>
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<td>Roaring Fork</td>
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<td>840</td>
<td>118</td>
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<td>2560</td>
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<td>5860</td>
<td>9500</td>
<td>120</td>
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</table>

*Median of forecasts within each basin.

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....