Colorado River Basin
Water Supply Briefing

March 6, 2020

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Colorado Basin River Forecast Center

Phone: 1-877-929-0660
Passcode: 1706374

Please mute your phone until the question period
Today’s Presentation

February & Water Year Precipitation Review

Early March SWE Conditions

March Water Supply Forecasts

Historical March Forecast Error

Upcoming Weather

Contacts & Questions

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Feb 5-7 Significant Precipitation Event Across North

Observed 24hr Precipitation, Ending 12Z, 02/07/2020

Precip Percentiles from Feb 1-10
February Precipitation Summary

Many SNOTEL sites in the Upper Colorado River mainstem headwaters had February precipitation totals in the top five of their period of record.

Parts of the Upper Green fared very well (110-150% avg), while other parts did not (40-75% avg).

Many SNOTEL sites in the Dolores and San Juan basins had February precipitation totals in the bottom three of their period of record.

In the Lower Colorado River Basin the Upper Gila and eastern headwaters of the Salt and Little Colorado rivers benefited the most from February storms.
### Water Year Precipitation Summary

#### Water Year 2020

#### Oct-Feb Precip Summary

<table>
<thead>
<tr>
<th>Basin</th>
<th>Precip (% Avg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Green</td>
<td>90%</td>
</tr>
<tr>
<td>Duchesne</td>
<td>90%</td>
</tr>
<tr>
<td>Price/San Rafael</td>
<td>95%</td>
</tr>
<tr>
<td>Yampa/White</td>
<td>105%</td>
</tr>
<tr>
<td>Upper CO Mainstem</td>
<td>100%</td>
</tr>
<tr>
<td>Gunnison</td>
<td>80%</td>
</tr>
<tr>
<td>Dolores</td>
<td>75%</td>
</tr>
<tr>
<td>San Juan</td>
<td>75%</td>
</tr>
<tr>
<td>Lake Powell</td>
<td>90%</td>
</tr>
<tr>
<td>Virgin</td>
<td>105%</td>
</tr>
<tr>
<td>Verde</td>
<td>105%</td>
</tr>
<tr>
<td>Salt</td>
<td>100%</td>
</tr>
<tr>
<td>Little Colorado</td>
<td>105%</td>
</tr>
<tr>
<td>Upper Gila</td>
<td>115%</td>
</tr>
</tbody>
</table>

Water year precipitation is near to slightly below average over much of the Upper Colorado River Basin above Lake Powell with the exception of the Gunnison, Dolores and San Juan Basins, which are below average.

In the Lower Colorado River Basin water year precipitation is near average in the Virgin, Verde, Salt, and Little Colorado river basins and above average in the Gila River Basin.
NRCS SNOTEL (Observed)

Basin | SWE (% Median)  
--- | ---  
Upper Green | 110%  
Duchesne | 100%  
Price/San Rafael | 90%  
Yampa/White | 115%  
Upper CO Mainstem | 115%  
Gunnison | 90%  
Dolores | 90%  
San Juan | 90%  
Lake Powell | 100%  
Virgin | 105%  
Verde | 35%  
Salt | 75%  
Little Colorado | 60%  
Upper Gila | 75%  

%median SWE compared to Feb 1:
- increased in the Yampa and Upper CO mainstem basins
- decreased most in the Duchesne, Dolores, San Juan and Virgin basins
March 1st Water Supply Forecasts: Green, Yampa, White, Duchesne

Forecast Ranges & (1-month Trend)

- **Upper Green**: 60 - 105% avg (little change)
- **Yampa/White**: 90 - 110% avg (Yampa: 5 - 10% increase)
- **Duchesne**: 70 - 100% avg (5 - 10% decrease)
Yampa Water Supply Forecasts & Snow Conditions

Yampa - Deerlodge Park (YDLC2)
Period: Apr-Jul, Official 50% Forecast (2020-03-01): 1380 kaf (111% Average, 118% Median)
ESP is Unregulated and No Precipitation Forecast Included

2020/03/01:
Max 2011: 2880.52
Min 2002: 366.16
Average: 1240
Median: 1170
ESP: 1410
Official 10: 1900
Official 30: 1540
Official 50: 1380
Official 70: 1200
Official 90: 975

Storm during the first part of the month
Current SWE near average seasonal peak amount
Forecast Ranges & (1-month Trend):

Granby to Kremmling: 100 - 135% avg (10 - 30% increase)
Kremmling to Cameo: 90 - 105% avg (5 - 15% increase)
Colorado River mainstem headwaters SWE has reached the average seasonal peak ~1 month earlier than normal.
March 1st Water Supply Forecasts: Gunnison, Dolores

Forecast Ranges & (1-month Trend):

Gunnison: 55 - 85% avg  (5 - 10% decrease)
Dolores: 55 - 70% avg  (10 - 20% decrease)
March 1\textsuperscript{st} Water Supply Forecasts: San Juan

Forecast Range & (1-month Trend):
55 - 75\% of average (10 - 15\% decrease)

1981 - 2010 \%avg

- Below 25\%
- 25\% - 35\%
- 35\% - 45\%
- 45\% - 55\%
- 55\% - 65\%
- 65\% - 75\%
- 75\% - 85\%
- 85\% - 95\%
- 95\% - 105\%
- 105\% - 115\%
- 115\% - 125\%
- 125\% - 135\%
- 135\% - 145\%
- 145\% - 155\%
- 155\% - 165\%
- 165\% - 175\%
- 175\% - 185\%
- 185\% - 195\%
- 195\% - 205\%
- 205\% - 225\%
- 225\% - 250\%
- Above 250\%
- NA

San Juan-Bluff
640 / 58\%

Animas-Durango
290 / 70\%

Vallecito
140 / 72\%

Navajo
440 / 60\%

San Juan
Farmington
660 / 60\%

April-July Volumes (kaf) / \% of avg
San Juan River Basin: Navajo Reservoir ESP Guidance & SWE Conditions

Forecast decreased by ~15% of avg since January due to dry conditions.

Dry soil conditions and near record dry conditions in January and February have resulted in below average forecasts.

SWE is now below normal. Need ~5in SWE in March to get to normal peak.
March 1<sup>st</sup> Water Supply Forecasts: Upper Colorado (Lake Powell)

Lake Powell summarizes the hydrologic conditions throughout the Upper Colorado River Basin.

Lake Powell
5700 / 80%
(no change from Feb)
March 1st Water Supply Forecasts: Virgin River Basin

Forecast Range & (1-month Trend):
75 - 80% avg  (15 - 25% decrease)
March 1st Water Supply Forecasts: Lower Colorado River Basin

March - May Forecast Period
Volume (kaf) / % of 1981-2010 Median

Forecast Ranges

Little Colorado: 5 - 50%

Upper Gila: 35 - 65%

Salt: 55 - 80%

Verde: 51%

Jan-May forecasts increased on the Gila and Salt (mostly due to observed runoff), but decreased elsewhere.
Historical (1981-2010) Forecast Verification

Forecasts are better than just going with average
Error tends to decrease each month into the spring

Where Forecasts are Better:
- Headwaters
- Primarily snow melt basins
- Known diversions / demands

Where Forecasts are Worse:
- Lower elevations (rain or early melt)
- Downstream of diversions / irrigation
- Little is known about diversions / demands

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</tr>
<tr>
<td>Fontenelle Reservoir</td>
<td>22%</td>
</tr>
<tr>
<td>Yampa River - Deerlodge</td>
<td>23%</td>
</tr>
<tr>
<td>Blue River - Dillon Reservoir</td>
<td>16%</td>
</tr>
<tr>
<td>Colorado River - Cameo</td>
<td>17%</td>
</tr>
<tr>
<td>Blue Mesa Reservoir (Gunnison)</td>
<td>18%</td>
</tr>
<tr>
<td>McPhee Reservoir (Dolores)</td>
<td>22%</td>
</tr>
<tr>
<td>Navajo Reservoir (San Juan)</td>
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</tr>
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<td>Lake Powell</td>
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March Forecast Error: April-July Volume

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Generally Dry/Warm First Week of March

Strong ridging into Sunday results in temperatures 10-15 degrees above normal.
Turning Wet Across the South Next Week

March 8-9 forecast precipitation totals

Weak system forecast to bring light precipitation to Upper Colorado basin Sunday-Monday.

March 10-13 forecast precipitation totals

System with a subtropical moisture tap forecast to move through the Lower Colorado Basin and southern Utah/Colorado mid-week.
Upcoming Weather: 8-14 Day Outlook (Mar 13th-19th)

Increased probability of above average precipitation into mid-March.
The Upper Colorado mainstem headwaters benefitted the most from February storms, as did the Yampa and parts of the Upper Green.
  - Water supply forecasts increased in those areas over last month.
  - Biggest decreases in volume forecasts occurred in the San Juan, Dolores, and Virgin basins.

Early March snow conditions:
  - Variable across the Upper Colorado Basin, but near to slightly below normal overall.
    - Best conditions are in the Upper Colorado mainstem, Yampa and parts of the Upper Green with many individual SNOTEL sites >120% of median.
    - Conditions have declined most in SW Colorado with some individual SNOTEL sites 80-85% of median.
  - Virgin River Basin: near median
  - Rest of Lower Colorado Basin: below median

March can be a pivotal month for water supply.
  - Right now no indication of dry, warm conditions through ~3rd week of the month.
  - Currently, it looks like there is a good chance of near normal precipitation for March.
    - This would mean little change in forecasts.
# 2020 Water Supply Briefing Schedule

*All Times Mountain Time (MT)*

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<th></th>
<th><strong>Colorado River Basin</strong></th>
<th></th>
<th><strong>Utah / Great Basin</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wednesday</strong></td>
<td>Jan 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>10 am</td>
<td>Jan 8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Friday</strong></td>
<td>Feb 7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>10 am</td>
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</tr>
<tr>
<td><strong>Friday</strong></td>
<td>Mar 6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>10 am</td>
<td>Mar 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Tuesday</strong></td>
<td>Apr 7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>10 am</td>
<td>Apr 7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Thursday</strong></td>
<td>May 7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>10 am</td>
<td>May 7&lt;sup&gt;th&lt;/sup&gt;</td>
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Peak flow forecast webinar Wednesday, March 18th, 10 am MT

Additional briefings scheduled as needed

All registration information has been posted to the CBRFC web page.
CBRFC Webinar Registration & Email List

CBRFC Water Supply Forecast Center - Water Year 2020
The Colorado Basin River Forecast Center (CBRFC) produces water supply forecasts for the Colorado River and eastern Great Basins. CBRFC conducts December through June webinars explaining the forecasts and current conditions.

The webinar is composed of two parts: (1) a telephone conference call and (2) a web-based presentation. The conference call can be joined by dialing the number below prior to the start of the webinar and entering the provided access code when prompted.

Webinar Dial-In Information (same for all webinars):
Conference Call Phone Number: 1-877-909-0969
Access Code: 1708574

To view the web-based presentation, you will need to register prior to each webinar. Follow the links below to register for a webinar.

Early Season Water Supply Outlook Webinar (click to register):
Wednesday, December 18th at 10 am MT

Colorado River Basin Water Supply Webinars:
Wednesday, January 8th at 10 am MT
- Friday, February 7th at 10 am MT
- Friday, March 6th at 10 am MT
- Tuesday, April 7th at 10 am MT
- Thursday, May 7th at 10 am MT

Utah Water Supply Webinars:
Wednesday, January 8th at 11:30 am MT
- Friday, February 7th at 11:30 am MT
- Friday, March 6th at 11:30 am MT
- Tuesday, April 7th at 11:30 am MT
- Thursday, May 7th at 11:30 am MT

Peak Flow Webinar:
Wednesday, March 18th at 10 am MT

A notification email will be sent if a date or time change occurs. Additional webinars are scheduled as needed. The webinar slides will be available from the CBRFC presentations page soon after each briefing.

Join the CBRFC Email List and Google Group
To subscribe to our Google Group email list just click here.
Or you can request to join by sending an email to cbrfc.webmasters@noaa.gov
In the subject line please include: email notification list.
If you would like to add any information about your area of interest and association or agency you represent please do so in the body of the email.
This information would help us maintain a more comprehensive contact list.

This list is used to provide notification when webinars are scheduled, water supply forecasts are updated, and for other news of interest to our stakeholders regarding CBRFC operations.

For questions or comments, including suggestions on additional CBRFC products or services we might provide, please contact us at cbrfc.webmasters@noaa.gov.
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Questions?