Utah Water Supply Briefing

March 6th, 2020

Colorado Basin River Forecast Center
Patrick Kormos - Hydrologist

!!! Use webinar audio !!!
- Either use computer audio, ...
- or dial in using phone number and passcode provided by GoTo.

Please mute your microphone until ready to ask questions
Utah Water Supply Briefing

1. Precipitation Review
2. Current Snowpack
3. 2020 Water Supply Forecasts
4. Forecast Error
5. Upcoming Weather
6. Contacts & Questions
Utah Precipitation Review - Precipitation up to March. 1, 2020

**February Precipitation**
- Six Creeks: Above Normal
- ---: Near Normal
- Weber, Bear: Below Normal
- Provo, Sevier, Duchesne, Virgin: Much Below Normal

**Water Year Precipitation**
- Bear, Six Creeks, Weber, Sevier, Duchesne Virgin: Near Normal
- Provo: Below Normal

- Bear: 91%
- Weber: 91%
- Six Creeks: 100%
- Provo: 84%
- Sevier: 94%
- Duchesne: 90%
- Virgin: 103%
Utah Current Snowpack

SNOTEL (Observed Mar. 6, 2020)

CBRFC Snow Groups (SNOTEL Stations)

- Bear: 105%
- Weber: 95%
- Six Cr: 120%
- Provo: 85%
- Duchesne: 105%
- Sevier: 100%
- Virgin: 110%
Utah Current Snowpack: approximately 1 more accumulation month

SNOTEL (Observed Mar. 3, 2020)
Utah Water Supply Forecasts - March Overview

- March 1 Forecasts for April-July Volume in 1000’s acre feet (KAF)
- April-July Forecast Streamflow Volumes are in percent of 1981-2010 average

Median value of the…
...individual forecasts (in % of average)
...by Forecast Group.

<table>
<thead>
<tr>
<th>Forecast Group</th>
<th>Median Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bear</td>
<td>100%</td>
</tr>
<tr>
<td>Weber</td>
<td>80%</td>
</tr>
<tr>
<td>Six Creeks</td>
<td>95%</td>
</tr>
<tr>
<td>Provo / Utah Lake</td>
<td>70%</td>
</tr>
<tr>
<td>Sevier</td>
<td>80%</td>
</tr>
<tr>
<td>Duchesne</td>
<td>85%</td>
</tr>
<tr>
<td>Virgin</td>
<td>80%</td>
</tr>
</tbody>
</table>

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
Utah Water Supply Forecasts - March Overview

- March 1 Forecasts for April-July Volume in 1000's acre feet (KAF)
- April-July Forecast Streamflow Volumes are in percent of 1981-2010 average

Change in Median Forecast from February to March

<table>
<thead>
<tr>
<th>Region</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bear</td>
<td>+-%</td>
</tr>
<tr>
<td>Weber</td>
<td>-5%</td>
</tr>
<tr>
<td>Six Creek</td>
<td>-5%</td>
</tr>
<tr>
<td>Provo / Utah Lake</td>
<td>-25%</td>
</tr>
<tr>
<td>Sevier</td>
<td>-30%</td>
</tr>
<tr>
<td>Duchesne</td>
<td>-5%</td>
</tr>
<tr>
<td>Virgin</td>
<td>-15%</td>
</tr>
</tbody>
</table>
Utah Water Supply Forecasts - Bear

Bear River Basin Forecasts

January: 90%
February: 100%
March: 100%

- Between 77% and 104%
- Slight increase in Smith's Fork, Stewart
- Slight decrease in others
Utah Water Supply Forecasts - Bear Smiths Fork

Smiths Fork - Border, Nr (BORW4)
Period: Apr-Jul, Official 50% Forecast (2020-03-01): 93 kaf (104% Average, 116% Median)
ESP is Unregulated and No Precipitation Forecast included

Max 1986: 180.79
Min 1977: 20.27
Average: 89
Median: 80
ESP: 93.4
Official 10: 118
Official 30: 102
Official 50: 93
Official 70: 80
Official 90: 75
Utah Water Supply Forecasts - Bear Woodruff

Bear - Woodruff Narrows Rsvr, Abv (BEAW4)
Period: Apr-Jul, Official 50% Forecast (2020-03-01): 100 kaf (83% Average, 91% Median)
ESP is Unregulated and No Precipitation Forecast Included

2020/03/01:
Max 2011: 334.73
Min 1977: 24.73
Average: 121
Median: 110
ESP: 99.9
Official 10: 159
Official 30: 123
Official 50: 100
Official 70: 83
Official 90: 70
Utah Water Supply Forecasts - Weber

Weber River Basin Forecasts

January: 85%
February: 85%
March: 80%
- Decrease across basin
- Between 56% and 98%
Utah Water Supply Forecasts - Weber Lost Creek

Lost Ck - Lost Ck Reservoir, Croyden, Nr (CRAU1)
Period: Apr-Jul, Official 50% Forecast (2020-03-01): 10.8 kaf (81% Average, 120% Median)
ESP is Unregulated and No Precipitation Forecast Included

2020/03/01:
Average: 13.4
Median: 9
ESP: 10.8
Official 10: 14.4
Official 30: 12.1
Official 50: 10.8
Official 70: 8.4
Official 90: 5.2
Utah Water Supply Forecasts - Six Creeks

Six Creeks Basin Forecasts

January: 90%
February: 100%
March: 95%

- Between 84% and 98%
- Slight decrease in all basins
Utah Water Supply Forecasts - Six Creeks Little Cottonwood

Little Cottonwood Ck - Salt Lake City, Nr (LCTU1)
Period: Apr-Jul, Official 50% Forecast (2020-03-01): 37 kaf (97% Average, 106% Median)
ESP is Unregulated and No Precipitation Forecast Included

- Max 1983: 63.39
- Min 1961: 19.27
- Average: 38
- Median: 35
- ESP: 38.1
- Official 10: 48
- Official 30: 43
- Official 50: 37
- Official 70: 34
- Official 90: 32
Utah Water Supply Forecasts - Provo - Utah Lake

Provo River Basin Forecasts

January: 90%
February: 95%
March: 70%
- Decreases across all basins
- Between 55% and 91%
Utah Water Supply Forecasts - Provo - Utah Lake

Jordan - Utah Lake, Provo, Nr (UTLU1)
Period: Apr-Jul, Official 50% Forecast (2020-03-01): 215 kaf (66% Average, 84% Median)
ESP is Unregulated and No Precipitation Forecast Included

- 2020/03/01:
  - Max 1984: 859.97
  - Min 1961: 68.03
  - Average: 325
  - Median: 255
  - ESP: 223
- Official 10: 315
- Official 30: 280
- Official 50: 215
- Official 70: 189
- Official 90: 168
Spanish Fork - Castilla, Nr (CASU1)
Period: Apr-Jul, Official 50% Forecast (2020-03-01): 38 kaf (55% Average, 81% Median)
ESP is Unregulated and No Precipitation Forecast Included

2020/03/01:
Average: 69
Median: 47
ESP: 40
Official 10: 54
Official 30: 43
Official 50: 38
Official 70: 33
Official 90: 26
Utah Water Supply Forecasts - Duchesne and Price

**Duchesne River Basin**

- January: 95%
- February: 90%
- March: 85%

  - Decreases across all basins
  - Between 63% and 97%

**Price River Basin**

- January: 90%
- February: 87%
- March: 83%

  - Decrease in all basins
  - Between 65% and 83%
Utah Water Supply Forecasts - Sevier and Virgin

Sevier River Basin

January: 115%
February: 110%
March: 80%
- Between 45% and 129%
- Decreases across basins

Virgin River Basin Forecasts

January: 100%
February: 95%
March: 80%
- Between 71% and 81%
- Decreases in all basins
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
Upcoming Weather: This Weekend

- Up to 0.75 inch of precipitation in upper elevations in northern Utah.
Generally Warm Early March

- Strong ridging brings above normal temps over the next few days.

### High Temp Forecast at SLC (Departure from Normal)

<table>
<thead>
<tr>
<th>Day</th>
<th>Normal</th>
<th>Forecast</th>
<th>Departure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday 3/6</td>
<td>51.0</td>
<td>65</td>
<td>+14</td>
</tr>
<tr>
<td>Saturday 3/7</td>
<td>50.3</td>
<td>66</td>
<td>+16</td>
</tr>
<tr>
<td>Sunday 3/8</td>
<td>50.2</td>
<td>55</td>
<td>+3</td>
</tr>
<tr>
<td>Monday 3/9</td>
<td>54.0</td>
<td>57</td>
<td>+3</td>
</tr>
<tr>
<td>Tuesday 3/9</td>
<td>55.1</td>
<td>55</td>
<td>--</td>
</tr>
</tbody>
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Upcoming Weather: Warm Temperatures and Snow Melt

- Snow below 8000' begins to melt
- Streams may begin to see increases in flow
Upcoming Weather: Precipitation March 10-12 Southern Utah

- Models in general agreement at potent storm with deep subtropical moisture tap moving across Arizona next week.
- Heaviest precip currently forecast over Arizona
- However, Virgin River Basin may see over 1” in upper elevations, providing a jump in ESP there.
Upcoming Weather: next 8-14 days

8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 5 MAR 2020
VALID MAR 13 - 19, 2020

DASHED BLACK LINES ARE OUTFIT CLIMATOLOGY
VALUES ABOVE 2.5 OR BELOW 2.5 NORMAL
GRAY AREAS ARE NEAR-NORMAL

90% 80% 70% 60% 50% 40% 33% 33% 40% 50% 60% 70% 80% 90%

Probability of Below | Normal | Probability of Above

8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 5 MAR 2020
VALID MAR 13 - 19, 2020

DASHED BLACK LINES ARE OUTFIT CLIMATOLOGY
VALUES ABOVE 2.5 OR BELOW 2.5 NORMAL
GRAY AREAS ARE NEAR-NORMAL

90% 80% 70% 60% 50% 40% 33% 33% 40% 50% 60% 70% 80% 90%

Probability of Below | Normal | Probability of Above
February precipitation totals were low, except for Six Creeks Basins, and the northeastern most Bear (Smith’s Fork area).

All Utah Forecast groups are at near normal Water Year Precipitation, except for Provo/Utah Lake, which is below normal.

Snow conditions are near normal, except for Six Creeks (above) and Provo/Utah Lake (below).

Water Supply Forecasts
○ Bear and Six Creeks are near normal
○ Weber, Provo/Utah Lake, Sevier, Virgin, Price, Duchesne are below normal

A weak storm system moves into northern Utah late this weekend with modest precipitation amounts

No significant storm systems are expected to impact Utah through March 10

Virgin River Basin may see significant precipitation March 10-12.

Temperatures today and tomorrow will be warmer than normal, expect some streamflow rises
## 2020 Water Supply Briefing Schedule

*All Times Mountain Time (MT)*

<table>
<thead>
<tr>
<th><strong>Colorado River Basin</strong></th>
<th><strong>Utah (formerly Great Basin)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wednesday</strong></td>
<td>Jan 8th</td>
</tr>
<tr>
<td><strong>Friday</strong></td>
<td>Feb 7th</td>
</tr>
<tr>
<td><strong>Friday</strong></td>
<td>Mar 6th</td>
</tr>
<tr>
<td><strong>Tuesday</strong></td>
<td>Apr 7th</td>
</tr>
<tr>
<td><strong>Thursday</strong></td>
<td>May 7th</td>
</tr>
</tbody>
</table>

- Peak flow forecast webinar: Wednesday, March 18th, 10 am MT

Additional briefings may be scheduled as needed.

All registration information is available on the CBRFC web page.
**CBRFC Contacts**

**Basin Focal Points (Forecasters)**

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Ashley Nielson – San Juan, Gunnison, Dolores, Lake Powell
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Zach Finch – Virgin, Lower Colorado Basin
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Patrick Kormos – Bear, Weber
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John Lhotak – Development and Operations Hydrologist
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**CBRFC Webpage**
https://www.cbrfc.noaa.gov/

**CBRFC Operations**
cbrfc.operations@noaa.gov
801-524-4004

**CBRFC Water Supply Presentations**
https://www.cbrfc.noaa.gov/present/present.php

Questions?