MEETING NOTICE

In response to the recommendations from the CDC, local authorities, and Department of Interior guidance, the spring coordination meeting for the operation of the Navajo Unit, scheduled for Tuesday, April 21st, at 1:00 pm, was canceled.

These slides are being provided in lieu of the meeting, along with an operational summary document. Please contact Susan Behery (sbehery@usbr.gov, 970-385-6560) for any questions or comments you might have.

The next coordination meeting for the Navajo Unit is being scheduled for late August. A notice will be sent out when the date is finalized.
Summary

- Despite near-average snowpack, dry soils persist and are expected to have an effect on runoff efficiency. Runoff forecasts throughout the basin are below-average for this reason.
- Navajo Reservoir is expected to peak between 6060 and 6065 ft. No high releases are planned for this spring. Releases from Navajo Reservoir are expected to remain at or near the current level through spring runoff.
- After runoff ends, Navajo releases will likely increase to accommodate irrigation season while maintaining the recommended target baseflow range in the critical habitat reach. Releases are expected to vary between 500 and 1,000 cfs.
- Other Reclamation projects in the San Juan River Basin are not projected to fill under the most recent runoff forecasts.
Navajo Reservoir Operations WY 2020

Flow (cfs), Storage (af/day)

Pool Elevation (ft)

Inflow (cfs)

Release To River (cfs)

NIIP (cfs)

Oct  Nov  Dec  Jan  Feb  Mar  Apr  May

Pool Elevation (ft)

6070

6065

6060

6055

6050

6045

6040

6035

6030

0

100

200

300

400

500

600

700

800

900

1,000

1,200
Current Reservoir Status

Data Current as of: 04/20/2020

San Juan River Basin

- McPhee 276410/381100 73% Full
- Lake Nighthorse 111951/115075 97% Full
- Lemon 18467/39792 46% Full
- Vallecito 88390/125400 70% Full
- Jackson Gulch 4369/9951 44% Full
- Navajo 1288179/1696000 76% Full
Current Snowpack Status

WY 2019 (last year) and WY 2011 shown similar SWE Peak for comparison.
Weather Outlook
April 2020

Aldis Strautins
National Weather Service
Grand Junction, CO
http://www.weather.gov/gjt
• Since the first of the year over southeastern Utah cooler than normal and over southwestern Colorado warmer than normal. For Precipitation well below normal over the headwaters since the first of the year.

• So far for the beginning of April warmer than normal with precipitation well below normal since the first of the month.

• The latest storm last week and into the weekend brought some relief to northern Colorado but very little to southwestern Colorado. The melt did slow slightly but there were no increases in snowpack for the major southwestern river basins.
• Moderate drought remains entrenched over the head waters with severe drought over the lower elevations of southeastern Utah and southwestern Colorado.

• ENSO-neutral conditions are present and are expected to continue into the fall of 2020.

• Late spring into summer equal chance of either above, below or normal precipitation. Higher chances of above normal temperatures

• Drought is predicted to remain.
The Past
April 2020

Temperature
Departure from normal

Precipitation
% of normal

Water Year 2020
The Past
April 2020

Temperature
Departure from normal

Precipitation
% of normal

Departure from Normal Temperature (F)
1/1/2020 – 4/18/2020

Percent of Normal Precipitation (%)
1/1/2020 – 4/18/2020

From January 1, 2020
The Past
April 2020

Temperature
Departure from normal

Precipitation
% of normal

From April 1, 2020
SNOTEL - Percent of Normal - Colorado
Water Year 2020
Snotel
April 2020

SWE

Precipitation

SNOTEL - Percent of Normal
Water Year 2020
Snow
April 2020

SNOTEL Snow Water Equivalent – NRCS
Southwestern Colorado
SWE Pct of Normal
As of Apr 20

Dolores Basin: 91%
San Juan Basin: 84%
Animas Basin: 94%

SNOTEL Snow Water Equivalent – NRCS
Southwestern Colorado
Drought
April 2020

April 14, 2020

October 1, 2019

Drought – Monitor

Intensity:
- Yellow: D0 Abnormally Dry
- Tan: D1 Moderate Drought
- Orange: D2 Severe Drought
- Red: D3 Extreme Drought
- Maroon: D4 Exceptional Drought
## ENSO
### April 2020

<table>
<thead>
<tr>
<th>Season</th>
<th>La Niña</th>
<th>Neutral</th>
<th>El Niño</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAM 2020</td>
<td>0%</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>AMJ 2020</td>
<td>4%</td>
<td>66%</td>
<td>30%</td>
</tr>
<tr>
<td>MJJ 2020</td>
<td>11%</td>
<td>64%</td>
<td>25%</td>
</tr>
<tr>
<td>JJA 2020</td>
<td>20%</td>
<td>58%</td>
<td>22%</td>
</tr>
<tr>
<td>JAS 2020</td>
<td>26%</td>
<td>52%</td>
<td>22%</td>
</tr>
<tr>
<td>ASO 2020</td>
<td>30%</td>
<td>48%</td>
<td>22%</td>
</tr>
<tr>
<td>SON 2020</td>
<td>34%</td>
<td>45%</td>
<td>21%</td>
</tr>
<tr>
<td>OND 2020</td>
<td>37%</td>
<td>41%</td>
<td>22%</td>
</tr>
<tr>
<td>NDJ 2020</td>
<td>38%</td>
<td>39%</td>
<td>23%</td>
</tr>
</tbody>
</table>

**ENSO – Outlook**

**ENSO- Neutral remaining Neutral until winter**
Weather Outlook
April 2020

Temperature

Precipitation

May – Outlook
updated Apr 16
Weather Outlook
April 2020

Temperature

Precipitation

May/Jun/Jul – Outlook
updated Apr 16
Weather Outlook
April 2020

Temperature

Precipitation

Jun/Jul/Aug – Outlook
updated Apr 16
Weather Outlook
April 2020

Seasonal

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for April 16 - July 31, 2020
Released April 16

Author:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center

Drought persists
Drought remains but improves
Drought removal likely
Drought development likely

http://go.usa.gov/3eZ73

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).
### April 1st Water Supply Forecasts: San Juan Basin

**April-July Forecasts**
Volume in 1000’s acre-feet / Percent of 1981-2010 average

<table>
<thead>
<tr>
<th>Location</th>
<th>Volume (1000’s acre-feet)</th>
<th>Percent of Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Juan-Bluff</td>
<td>680 / 62%</td>
<td></td>
</tr>
<tr>
<td>Vallecito</td>
<td>151 / 78%</td>
<td></td>
</tr>
<tr>
<td>Animas-Durango</td>
<td>310 / 75%</td>
<td></td>
</tr>
<tr>
<td>Navajo</td>
<td>440 / 60%</td>
<td></td>
</tr>
<tr>
<td>San Juan</td>
<td>675 / 61%</td>
<td></td>
</tr>
<tr>
<td>San Juan-Pagosa</td>
<td>680 / 62%</td>
<td></td>
</tr>
</tbody>
</table>
Water Supply Forecast Evolution: Navajo Inflow Forecast

San Juan - Navajo Reservoir, Archuleta, Nr (NVRN5)
Period: Apr-Jul, Official 50% Forecast (2020-04-15): 380 kaf (52% Average, 54% Median)
ESP is Unregulated and No Precipitation Forecast Included

Blue shading: Daily Raw Model Guidance 90% - 10% exceedance range
Blue line: Daily raw model guidance 50% exceedance
Pink line: Official forecast 90%, 70%, 50%, 30%, 10% exceedance
Green solid: 1981-2010 average April-July volume
Green dotted: 1981-2010 median April-July volume
Orange shading: Observed volume to date
Brown dotted: Average observed

Wet in the future (78%)
April 15 Forecast: 380 KAF/52%
Dry in the future (36%)
Observed: 36KAF
Overall, the Navajo inflow forecast has been decreasing since January due to below normal precipitation. The forecast did not change between March and April due to near normal precipitation in March.

<table>
<thead>
<tr>
<th>Forecast Date</th>
<th>Forecast (KAF)</th>
<th>% of Avg (1981-2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>550</td>
<td>75%</td>
</tr>
<tr>
<td>Mid-January</td>
<td>520</td>
<td>71%</td>
</tr>
<tr>
<td>February 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>500</td>
<td>68%</td>
</tr>
<tr>
<td>Mid-February</td>
<td>475</td>
<td>65%</td>
</tr>
<tr>
<td>March 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>440</td>
<td>60%</td>
</tr>
<tr>
<td>Mid-March</td>
<td>440</td>
<td>60%</td>
</tr>
<tr>
<td>April 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>440</td>
<td>60%</td>
</tr>
<tr>
<td>Mid-April</td>
<td>380</td>
<td>52%</td>
</tr>
</tbody>
</table>
Snow Conditions: SNOTEL Snow Water Equivalent

% Median SWE
San Juan Basin: 89%
San Juan abv Navajo: 85%
Animas River Basin: 97%

SWE vs. runoff is not a 1-to-1 relationship; spring weather will play a role in the final outcome of observed volume.

April 20, 2020
Some SNOTEL locations have near normal conditions. However, upper elevation snow (>11,000’) in the CBRFC model is below normal due to a dry October which resulted in a slow start to the high elevation snow accumulation season. November 1\textsuperscript{st} modeled snow was anywhere from 2-4 inch below normal. This has resulted in lower forecasts throughout the basin.
What is driving the forecast: CBRFC Model Soil Moisture Conditions

San Juan River Basin
Soil moisture conditions entering the winter season

Depending on spring weather and snow melt evolution, it is possible a portion of the runoff will be lost to the dry soils. The forecasts are accounting for this possibility.
## Water Supply Forecasts (April-July)

<table>
<thead>
<tr>
<th>Location</th>
<th>Forecast</th>
<th>Avg. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navajo</td>
<td>380 kaf</td>
<td>52%</td>
</tr>
<tr>
<td>Vallecito</td>
<td>133 kaf</td>
<td>69%</td>
</tr>
<tr>
<td>Lemon</td>
<td>37 kaf</td>
<td>67%</td>
</tr>
<tr>
<td>Animas</td>
<td>270 kaf</td>
<td>65%</td>
</tr>
<tr>
<td>McPhee</td>
<td>167 kaf</td>
<td>57%</td>
</tr>
<tr>
<td>Powell</td>
<td>5300 kaf</td>
<td>74%</td>
</tr>
</tbody>
</table>

Most Probable forecasts as of April 21\textsuperscript{st}, 2020
With no spring peak release planned, releases are expected to vary between 500 and 1,000 cfs throughout the summer to maintain the SJRIP recommended target baseflow in the critical habitat reach.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN</td>
<td>-65</td>
<td>0</td>
<td>none</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6043</td>
</tr>
<tr>
<td>MOST</td>
<td>83</td>
<td>0</td>
<td>none</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6056</td>
</tr>
<tr>
<td>MAX</td>
<td>266</td>
<td>16</td>
<td>none</td>
<td>0</td>
<td>105</td>
<td>105</td>
<td>6063</td>
</tr>
</tbody>
</table>

CBRFC Forecast Date: 4/17/2020
Navajo Reservoir Forecast Operations
WY 2020
Range of Likely Reservoir Elevations
Navajo Reservoir Forecast Operations
WY 2020
Range of likely flows in Critical Habitat Reach

Flows (cfs)

0 1,000 2,000 3,000 4,000 5,000 6,000

Summary

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Reclamation Contacts:

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Ruth Swickard
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Useful Links
Reclamation: www.usbr.gov/uc
USGS: water.usgs.gov/nwis
CBRFC: cbrfc.noaa.gov