

Flaming Gorge Technical Working Group

May 21, 2018 Hydrology Summary

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This hydrologic update provides information regarding current conditions and fulfills the requirements detailed in the 2005 Flaming Gorge Final Environmental Impact Statement (FEIS) in Section 2.5.3 related to an operational plan for Flaming Gorge Dam (“Hydrology Summary”). The Hydrology Summary is to describe the current hydrologic classification of the Green River and Yampa River Basins, including the most probable runoff patterns for the two basins.

Hydrologic determinations for both the Yampa River Basin and Green River Basin above Flaming Gorge have been made and are unlikely to change unless significant, unexpected precipitation occurs in either basin. The Green River Basin above Flaming Gorge Reservoir is expected to receive 1,120,000 acre-feet in the April through July runoff period (May mid-month forecast), placing it in the average (below median) hydrologic classification. The Yampa River Basin is expected to receive 841,000 acre-feet for the same April through July runoff period, placing it in the moderately dry hydrologic classification. These projections are based off of the Colorado River Forecast Center’s May Final Forecast.

Snow water equivalent (SWE) as of May 20, 2018, for the Upper Green River and Yampa/White River Basins are 89 and 48 percent of median, respectively. Flaming Gorge SWE is similar to 2003 and 2006, while Deerlodge SWE is similar to 2001 and 2017. The Tower snotel site, used as a reference point for Yampa snowpack and runoff, currently has 30.5 inches of SWE (64 percent of median). On May 20, 2001 the Tower SNOTEL measured a SWE of 28.9 inches during a runoff season where the Yampa yielded 790 kaf (62% of 30-year average, Maybell + Lily).

SNOTEL tracking graphs, with analogous years, are provided in Figure 1 for the Upper Green River Basin above Flaming Gorge and Figure 2 for the Yampa River at the Deerlodge Park, CO gage.

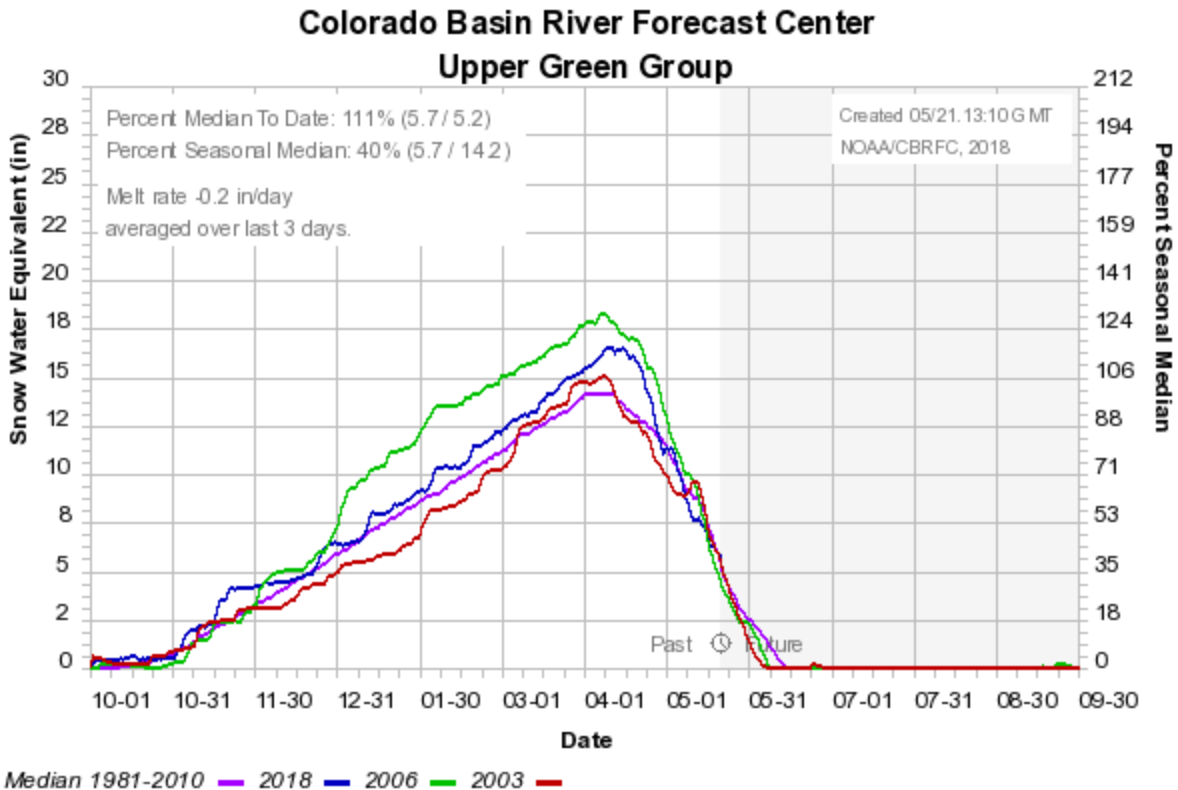


Figure 1 - Upper Green River Basin SNOTEL Tracking. 1981-2010 percent of median compared against 2018 YTD Snow Water Equivalent (SWE), and analog years 2006 and 2003.

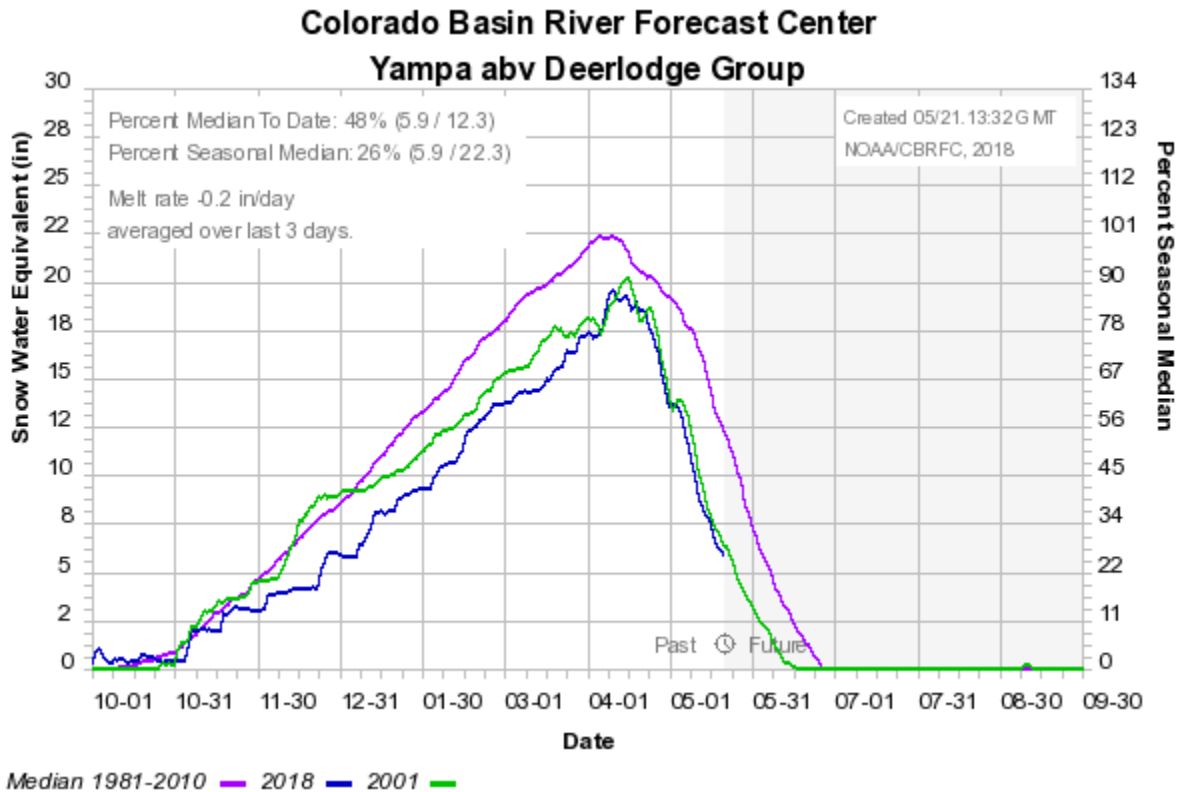


Figure 2 - Yampa River above Deerlodge SNOTEL Group. 1981-2010 percent of average SWE compared against 2018 YTD, and analog years 2001 and 2017.

10-Day Streamflow Forecasts

Observed data from the Deerlodge Park gage indicates that the Yampa River saw a peak flow of around 9,000 cfs, May 12-13. The following, Figure 3, illustrates 10-day forecasted flow values for the Yampa River at the Deerlodge Park gage, May 21 through June 1, 2018.

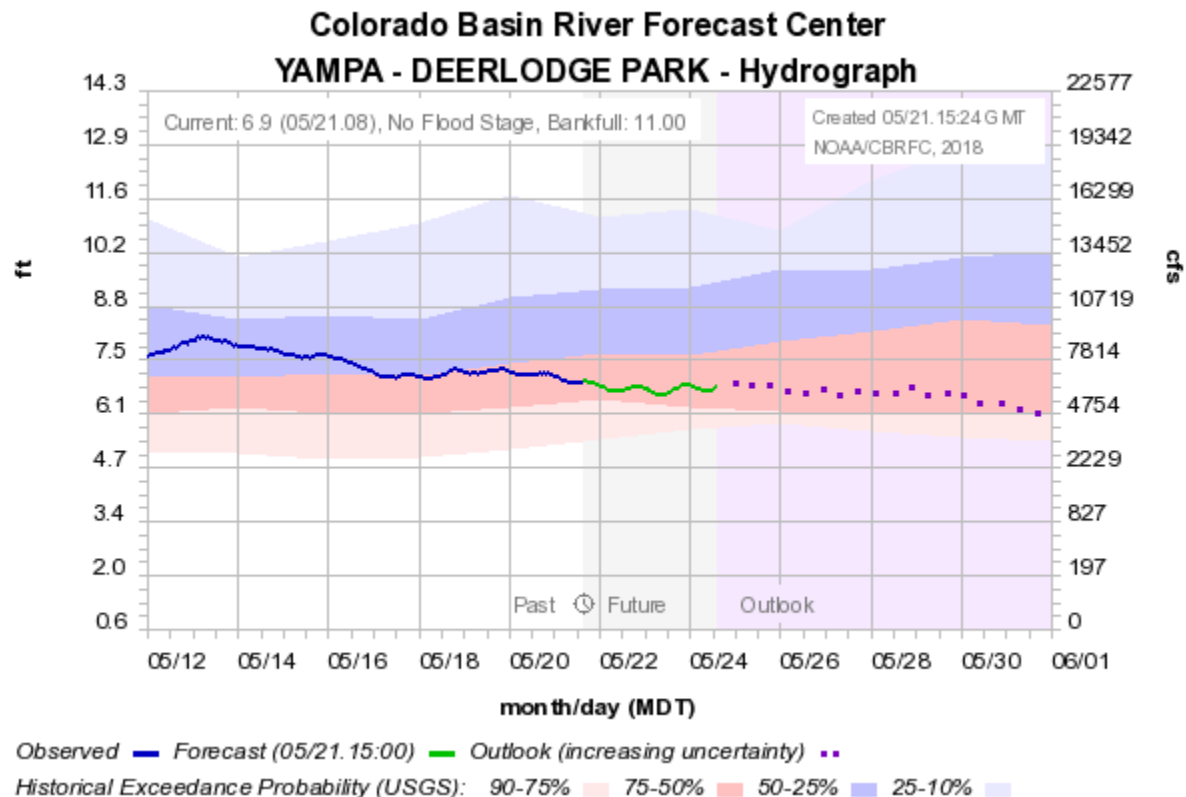


Figure 3 - Streamflow forecast for the Yampa River, May 21 – June 1, 2018.

Comparison of 2001 and 2018 Yampa River flows

The following, Figure 4 is intended to provide a comparison between Yampa River flows between 2001 and what is anticipated in 2018. The 2018 data includes the CBRFC 15-day ESP prediction.

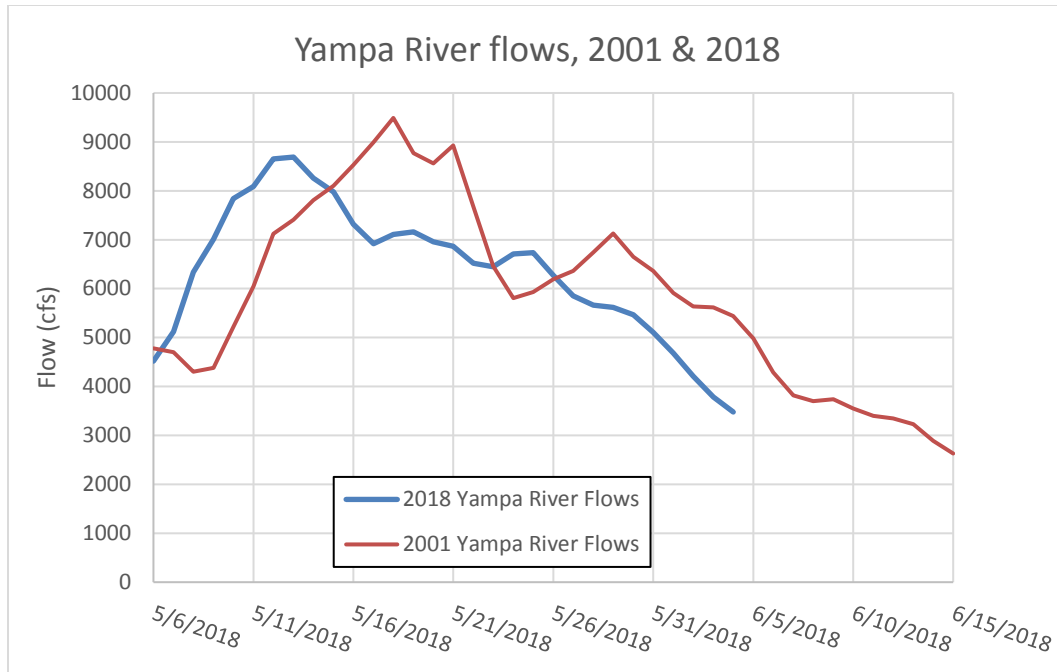


Figure 4 - Yampa River flow comparison for years 2001 and 2018

A 10-day deterministic flow for the Green River at the Jensen, UT gage is provided in Figure 5. Please note that increased flows from Flaming Gorge beyond what is currently planned with power plant capacity is not represented here.

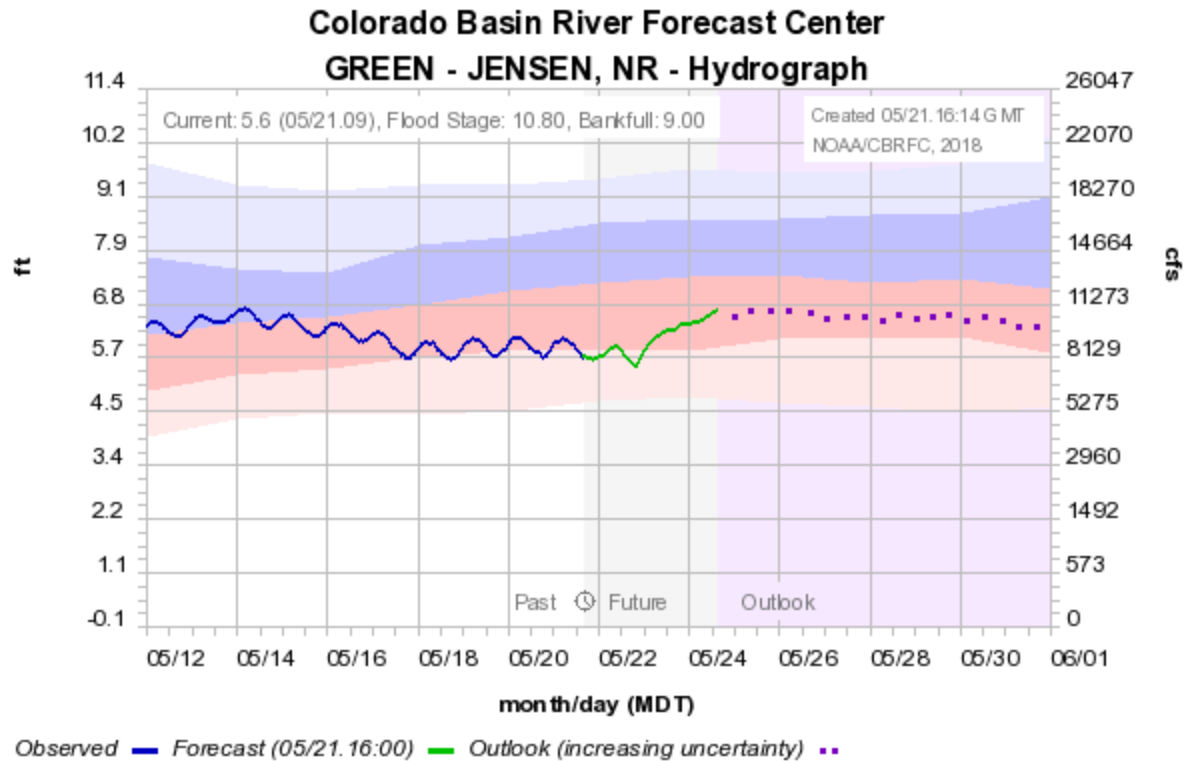


Figure 5 - Streamflow forecast for the Green River at the Jensen, UT gage for the period May 21 – June 1, 2018.

Jensen target flow scenarios

The following are two figures to demonstrate possible release scenarios from Flaming Gorge Dam. This analysis uses the following assumptions:

- CBRFC Yampa River 15-day ESP projection to June 4, 2018
- CBRFC Yampa River - 20% exceedance from daily flow statistics from June 5 – June 15, 2018
- One day travel time from Deerlodge to confluence
- Two day travel time from Flaming Gorge to Jensen, UT
- Power plant capacity is estimated at 4,400 cfs

Scenario 1 in Figure 6 shows the current power plant capacity at 14 day release schedule. This scenario is intended to yield a continuous flow at Jensen at or above 8,300 cfs from 5/23 to 06/05/2018 (14 days).

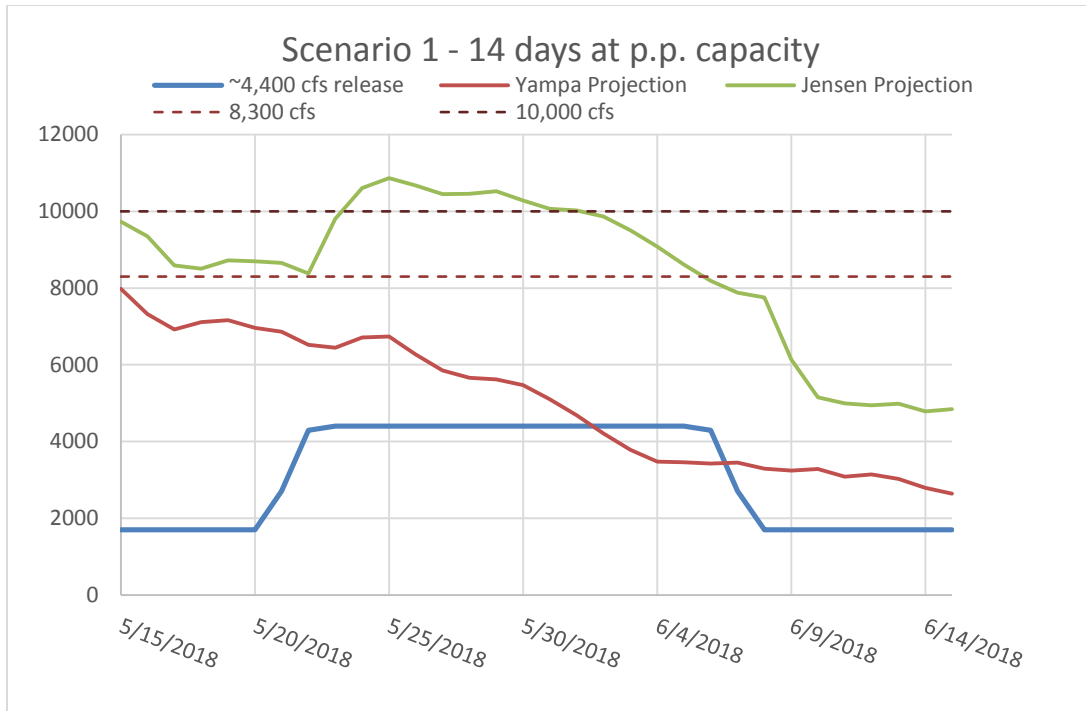


Figure 6 - Current release plan, ~4,400 cfs for 14 days

Scenario 2 in Figure 7 is intended to demonstrate the release needed to maintain flows at Jensen above 10,000 cfs from the period 05/24 through 06/06/2018 (14 days). Using current projections, this release scenario will require releases as detailed in Table 1.

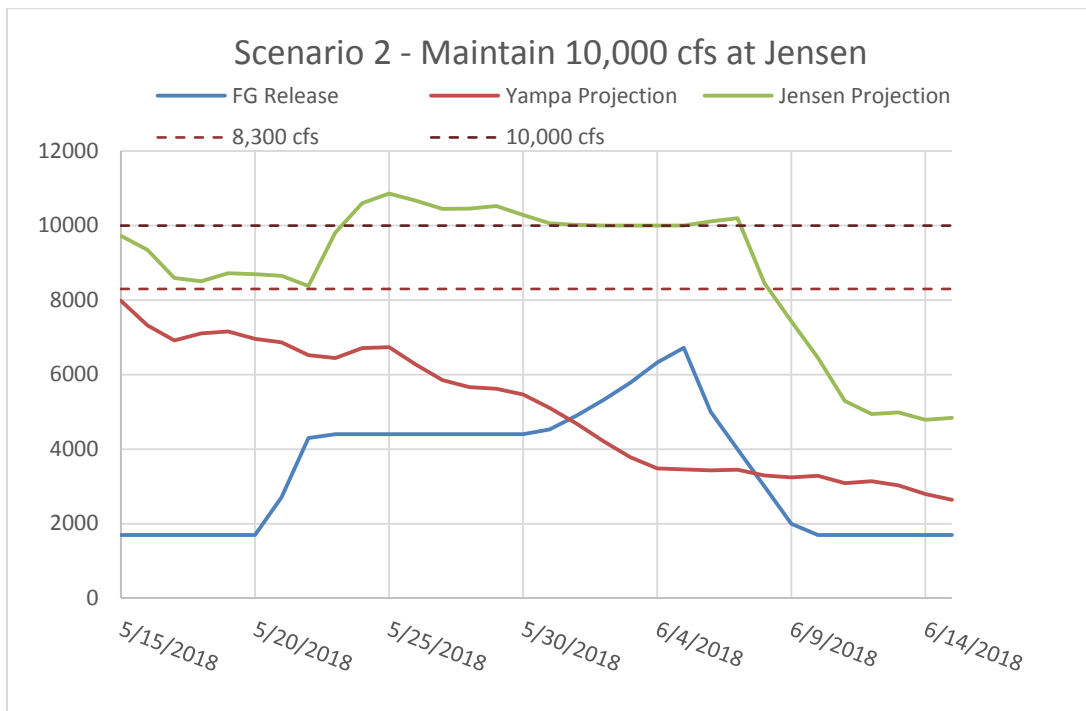


Figure 7 - Release pattern above power plant capacity to maintain 10,000 cfs at Jensen

Table 1 - Flaming Gorge release schedule for Scenario 2

Date	Flaming Gorge Release
5/21/2018	2708
5/22/2018	4296
5/23/2018	4400
5/24/2018	4400
5/25/2018	4400
5/26/2018	4400
5/27/2018	4400
5/28/2018	4400
5/29/2018	4400
5/30/2018	4400
5/31/2018	4534
6/1/2018	4896
6/2/2018	5318
6/3/2018	5788
6/4/2018	6326
6/5/2018	6721
6/6/2018	5000
6/7/2018	4000
6/8/2018	3000
6/9/2018	2000
6/10/2018	1700
6/11/2018	1700