Hydrology Report – April 2022

- **Upper Basin precipitation and Temperature**

March received 84% average precipitation in the Upper Basin bringing this year's cumulative precipitation to 95% of average. Temperatures in the Upper Basin for March were favorable being 3 to 5 degrees below average.

- **Upper Basin Snowpack and runoff**

This year's snowpack peaked about two weeks earlier than expected. The snowpack peaked on March 23rd with 88% of the seasonal peak. Based on the current conditions the runoff is estimated to be 66% of average for the year.

- **Current reservoir status**

As of April 11, 2022, Lake Mead is at an elevation of 1,059.5 feet and has about 8.4 million acre-feet in storage (32% capacity). As of April 11, 2022, Lake Powell is at an elevation of 3,523.0 feet and has about 5.8 million acre-feet in storage (24% capacity). Since this time last year, Lake Mead has decreased about 23 feet and Lake Powell has decreased about 42 feet. Total system storage for the upper and lower basin is around 20.7 million acre-feet (35% capacity).

- **2022 Reservoir Operations**

In calendar year 2022, there will be a Tier 1 shortage under the 2007 Guidelines and there will be a required Drought Contingency Plan contribution for Nevada and Arizona. Accordingly, in 2022, Nevada will be required to reduce consumptive use by 13,000 acre-feet under the 2007 Interim Guidelines and have a Drought Contingency Plan contribution of 8,000 acre-feet. Arizona and Mexico are also required to take shortage and make a water savings contribution in 2022. Those amounts are significantly larger than Nevada's obligations. The total combined volumes for Arizona, Nevada, and Mexico are 613,000 acre-feet in calendar year 2022, which will save the equivalent of about 8 feet in elevation in Lake Mead.

In response to declining runoff and lowering lake levels the 500+ plan was recently initiated with the purpose of storing an additional 500,000 acre-feet in Lake Mead during each of the next two years to prevent reaching critical elevations. The additional conservation is on top of the water savings already required in the 2007 Guidelines and Drought Contingency Plan. The Southern Nevada Water Authority, Metropolitan Water District of Southern California, Arizona Department of Water Resources, Central Arizona Project, and The Department of Interior have committed 200 million dollars to fund the 500+ plan over the next two years, which will result in about 16 feet of savings in Lake Mead.

- **Water Use in Southern Nevada**

Southern Nevada's consumptive use January through February of 2022 was 21,297 acre-feet. In 2021, Southern Nevada consumed less Colorado River water than it is 300,000 acre-feet entitlement: specifically, 50,265 (17%) acre feet less. The Southern Nevada Water Authority stored the unused water in Lake Mead to help maintain water levels. This stored water is accessible to the Southern Nevada in the future if necessary. The Southern

Nevada Water Authority aggressively reduced consumptive uses through turf removal and conservation programs allowing over 2.1 million acre-feet in total to be stored for future use.

- **Reclamation's Lake Mead Projection**

Reclamation uses computer models to forecast reservoir elevations based on planned water use and anticipated runoff. The most current model (March 24 month study) is forecasting Lake Mead to be at an elevation of 1,049.4 feet by the end of calendar year 2022 (Figure 1).

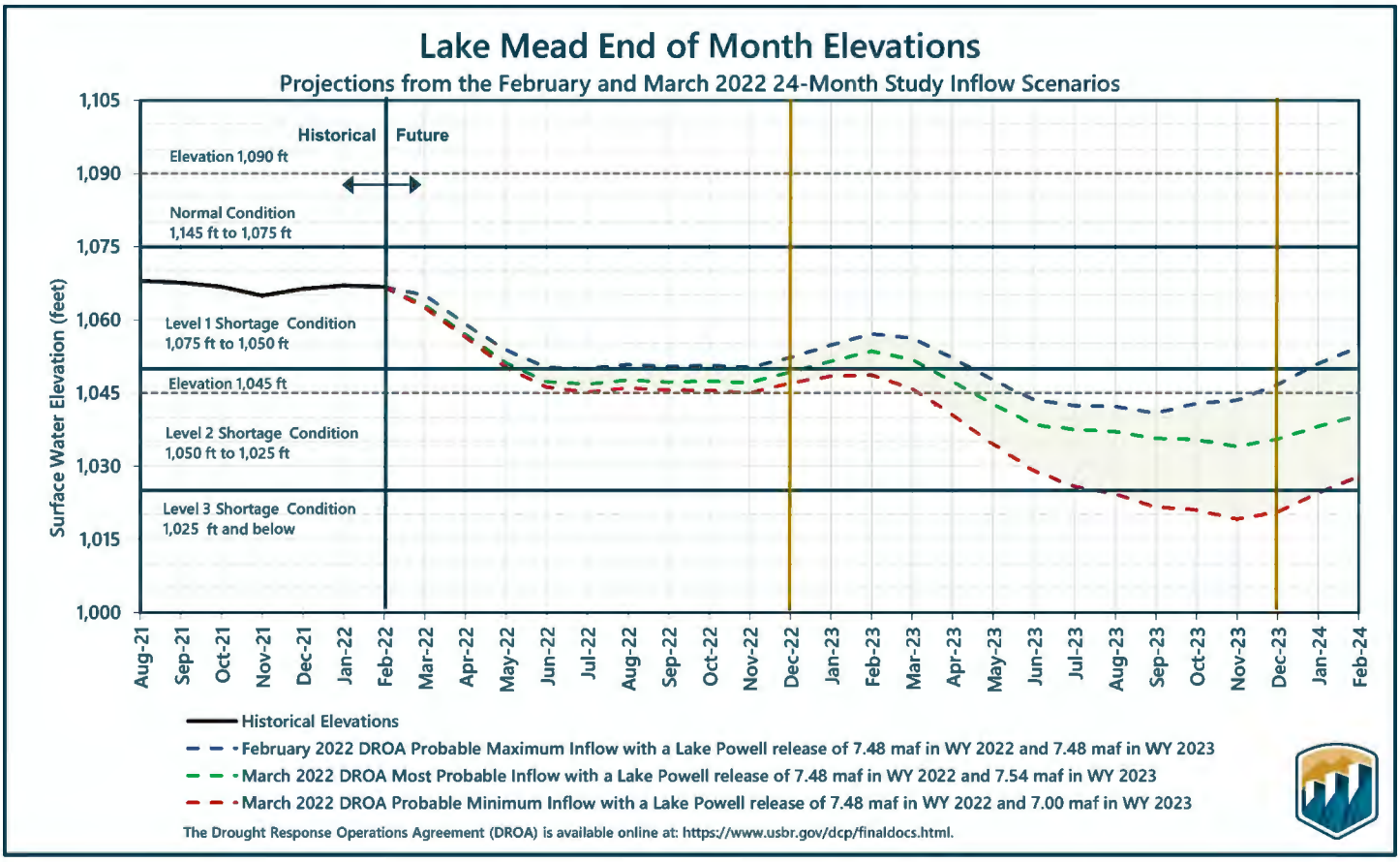


Figure 1. Reclamations March 24 Month Study.

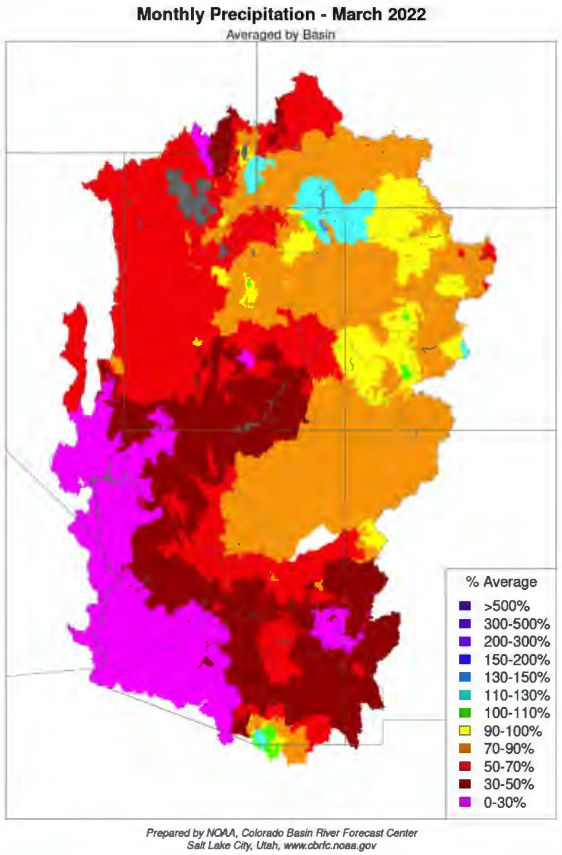
Colorado River Commission of Nevada

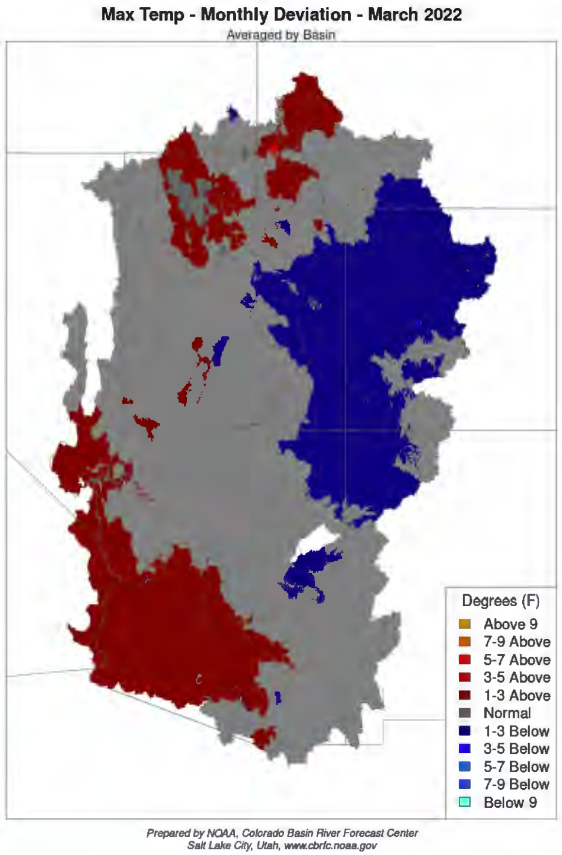
Hydrology and Water Use Update

Warren Turkett

April 12, 2022

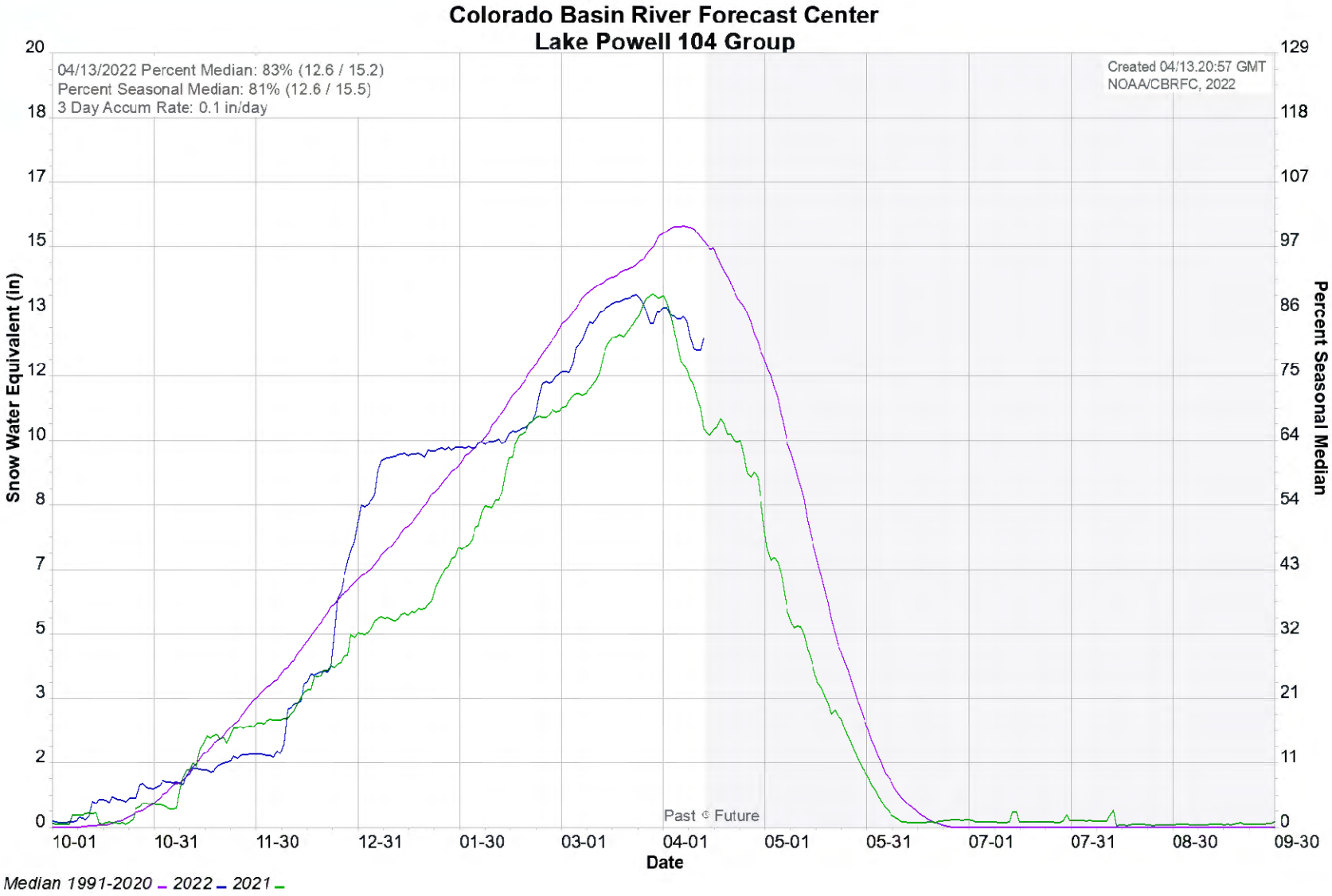
Precipitation and Temperature





Lake Powell %Average Precipitation Water Year 2022

Area	Oct	Nov	Dec	Jan	Feb	Mar	Water Year
UC-Powell	127	45	206	51	62	84	95


Colorado Basin River Forecast Center
Lake Powell 104 Group
04/13/2022 Percent Median: 83% (12.6 / 15.2)
Percent Seasonal Median: 81% (12.6 / 15.5)
3 Day Accum Rate: 0.1 in/day
Created 04/13.20:57 GMT
NOAA/CBRFC, 2022
Snow Water Equivalent (in)
Percent Seasonal Median
Past
Future
Date
10-01
10-31
11-30
12-31
01-30
03-01
04-01
05-01
05-31
07-01
07-31
08-30
09-30
Median 1991-2020
2022
2021

Unregulated Inflow, Current and Projected Reservoir Status

Projected unregulated inflow to Lake Powell	Acre-Feet	% Average
Water Year 2022	6,311,000	66%
April thru July 2022	4,100,000	64%

Reservoir	Current Elevation	Current Storage Acre-Feet	Current % Capacity	Projected Elevation on 1/1/2023[1]
Lake Mead	1,059.5	8,387,000	32%	1,049.4
Lake Powell	3,522.9	5,801,000	24%	3,520.1

Data retrieved April 11, 2022

[1] Based on Reclamation's March 2022 24 Month Study Most Probable Inflow.

Water Use In Southern Nevada

Southern Nevada Water Use	2021 Actual Use in Acre-Feet*
Nevada Annual Allocation	300,000
Diversions	480,322
Return Flow Credits	235,588
Consumptive Use	241,735
2021 Drought Contingency Plan contribution	-8,000
Unused Allocation Available for Banking	50,265 (17%)

* 2021 Water use is provisional.

Southern Nevada Water Use	Diversions	Return Flows	Consumptive Use
January – February 2022	59,546	38,249	21,297

Banked Water (through end of 2020)	Acre-Feet
Ground Water Recharge in So. Nevada	357,643
Banked in Lake Mead	865,741
Banked in California and Arizona	944,071
Total	2,167,455

Summary

Lake Powell

- Water Year 2022[1] has received 95% of average precipitation in the Upper Basin.
- Upper Basin snowpack peaked at 88% of the seasonal median.
- Unregulated inflow for water year 2022 is forecasted to be 66% of average.

Lake Mead

- In calendar year 2022, there will be a Tier 1 shortage under the 2007 Guidelines and required DCP contributions for Nevada and Arizona.
- Over the last 6 years, the Lower Basin has conserved enough water to raise Lake Mead by 65 feet.

Nevada Water Supply

- Southern Nevada has about 9 years of water supply banked. [2]
- **In 2021, Southern Nevada used 58,265 af less than our annual allocation.**

Storage	Elevation (f)	% Capacity	Change since last year
Lake Mead	1,059.5	32%	-23.5 ft
Lake Powell	3,522.9	24%	-42.3 ft

Data retrieved April 11, 2022.

[1] Water year is defined as October through September.

[2] Based on 2021 consumptive use and storage volumes through 2020.