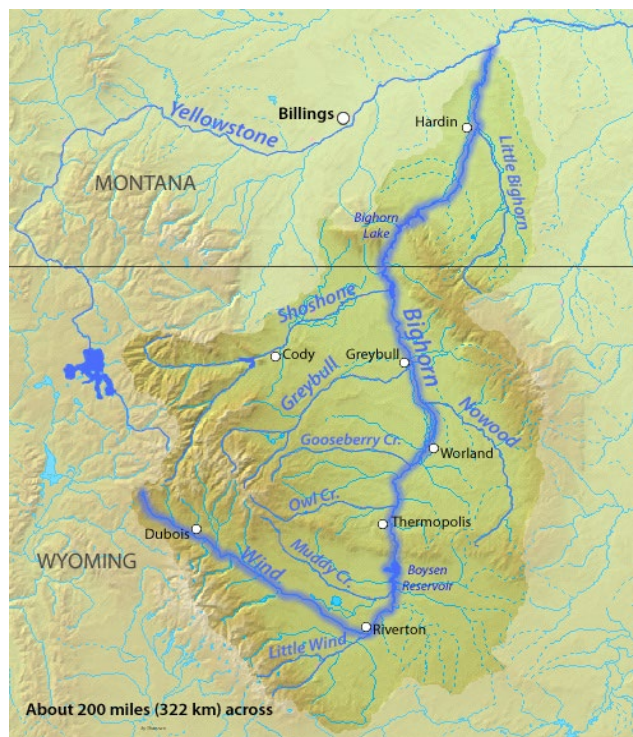


Yellowtail Dam Water Supply and Projected Operations



— BUREAU OF —
RECLAMATION

August 2022



Bighorn River Basin Map Source: DEMIS Mapserver

August Operating Range			
Forecast	Minimum	Median	Maximum
Monthly Average Inflow (cfs)	1,660	2,080	2,910
Monthly Average River Release (cfs)	2,260	2,505	2,720
End of August Elevation (feet)	3630.1	3631.4	3635.4
August 2022 Inflow Forecast (kaf)			
August Volume			128
Percent of Average			83
Water Year	Historic Inflow	Rank	
2021	141	32	
2020	133	35	
2019	207	14	
2018	171	23	
30 Year Average	155		

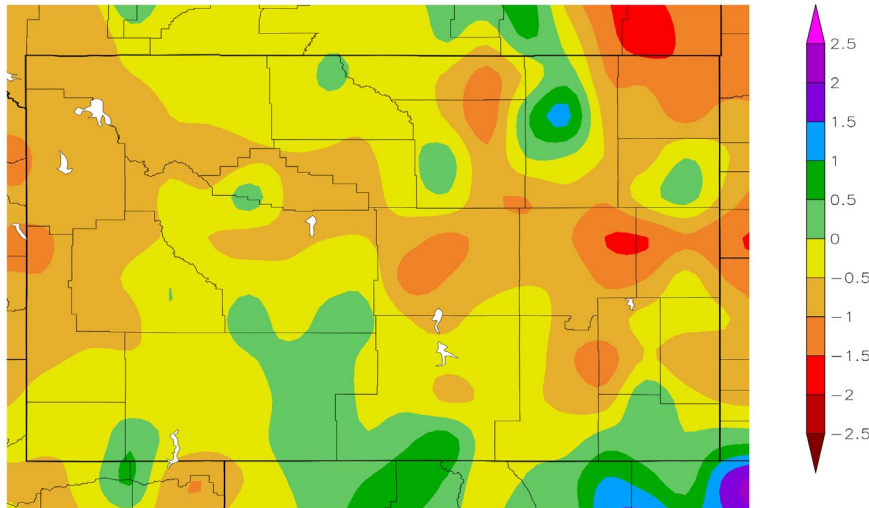


Climate Departure from Normal

July 1 through July 31, 2022

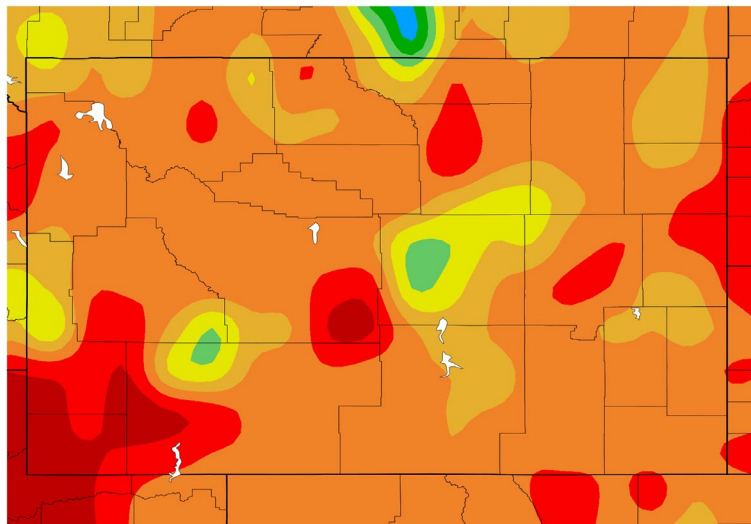
Precipitation

Departure from Normal (inches)



Temperature

Departure from Normal (°F)



CLIMATE SUMMARY

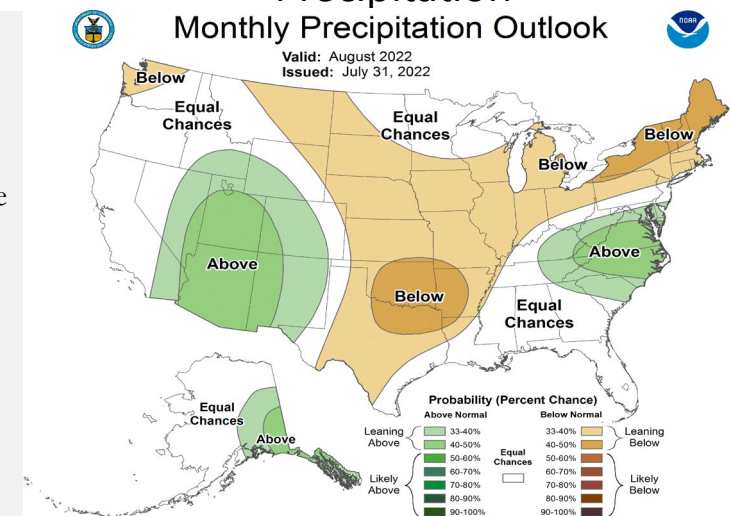
Precipitation was below average for most of the Bighorn Basin during July, with a few small portions of the basin having slightly above average precipitation. Temperatures were above average. Abnormally dry conditions persist throughout most of the Basin.

The climate outlook shows there is a 33 to 40 percent chance precipitation will be above average during August. Above normal temperatures are favored.

August Climate Outlook

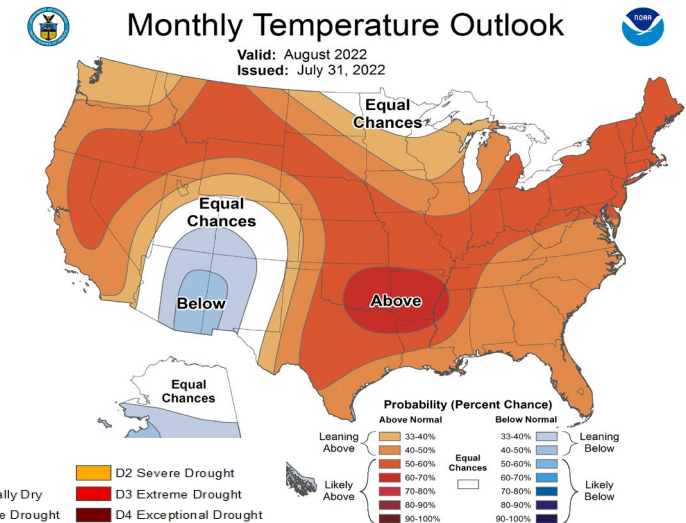
Precipitation Monthly Precipitation Outlook

Valid: August 2022
Issued: July 31, 2022



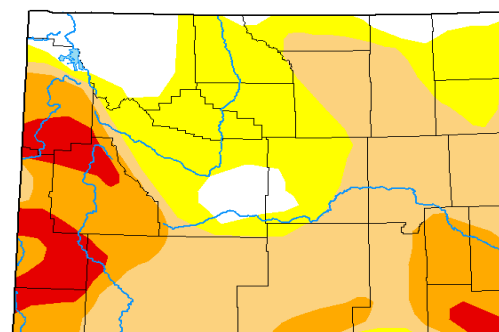
Temperature Monthly Temperature Outlook

Valid: August 2022
Issued: July 31, 2022



Wyoming Drought Monitor Map

July 26, 2022



Intensity

None

D0 Abnormally Dry

D1 Moderate Drought

D2 Severe Drought

D3 Extreme Drought

D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions.

Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

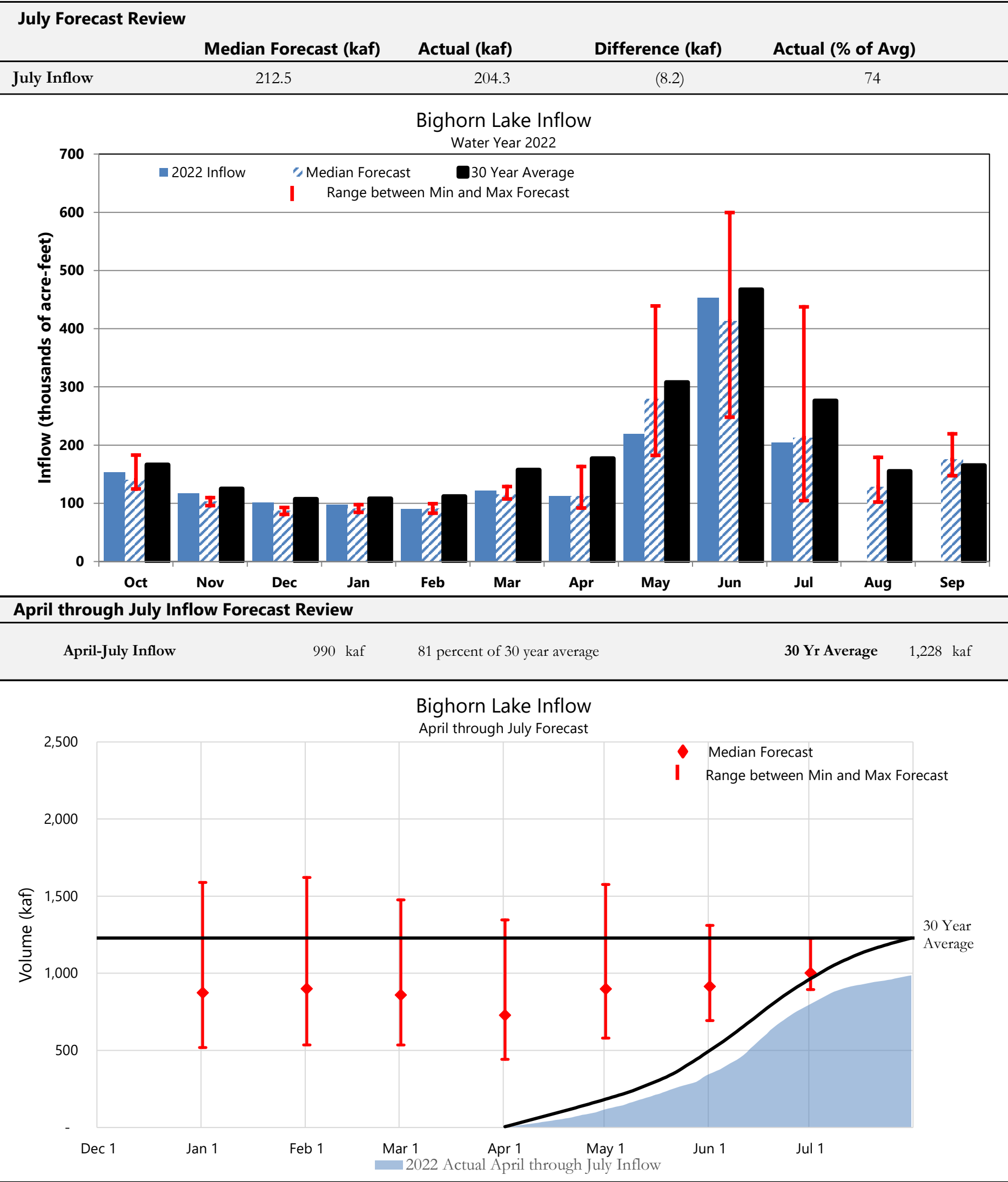


droughtmonitor.unl.edu

HPRCC using provisional data from NOAA Regional Climate Centers

FORECAST SUMMARY

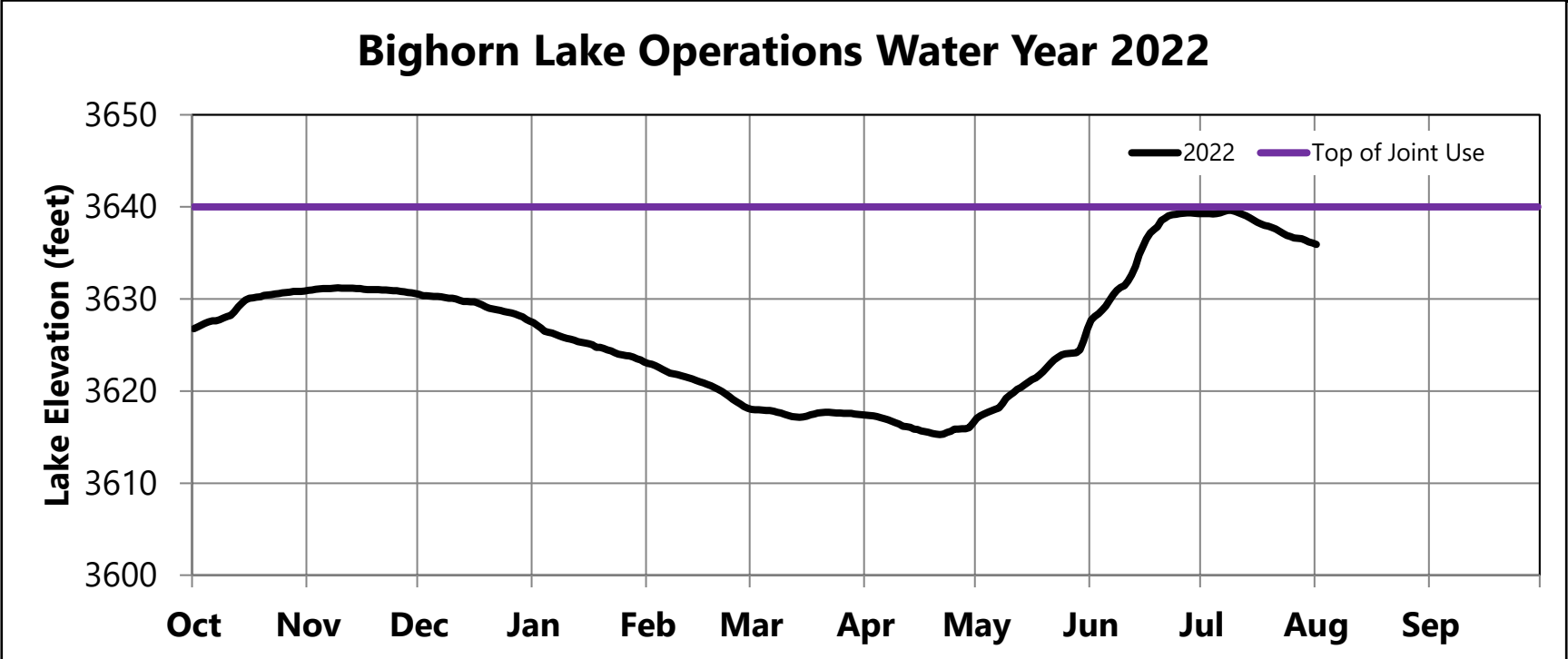
Streamflow data and planned releases from Boysen and Buffalo Bill Reservoirs are used to compute an inflow forecast for Bighorn Lake. Actual July inflow was slightly below the median inflow forecast.



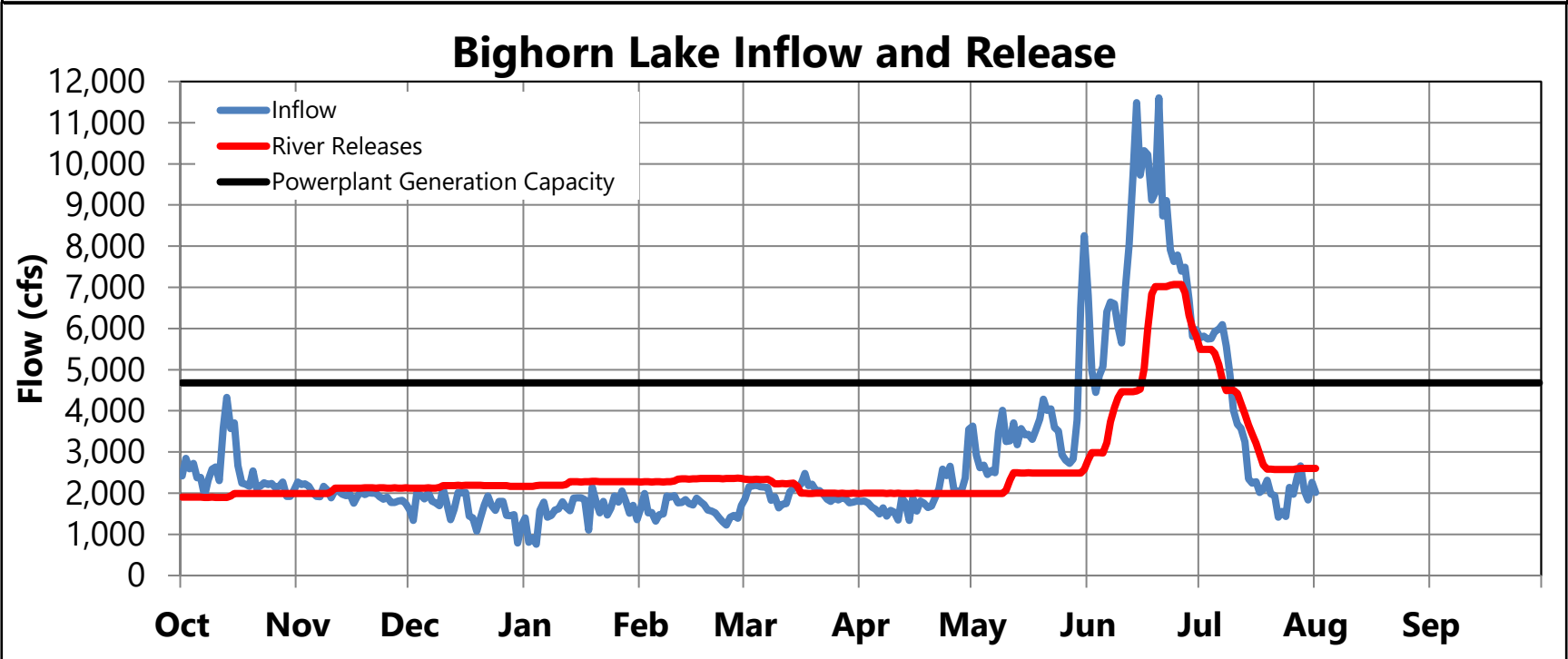
OPERATIONS REVIEW (October 1, 2021 through July 31, 2022)

River releases at the beginning of July were 5,500 cfs and were decreased to 2,600 cfs during July based on forecasted inflow and storage in Bighorn Lake. The storage in Bighorn Lake decreased by 3 feet during July.

August 1 Storage Conditions				
	Elevation feet	Storage acre-feet	Percent of Average	Percent Full
Bighorn Lake	3636.1	961,103	106	95
Buffalo Bill	5389.0	610,878	107	94
Boysen	4722.6	694,902	114	94



Average July Inflow			Average July Release		
	Monthly Avg cfs	Percent of Average		Monthly Avg cfs	Percent of Average
Bighorn Lake	3,325	74	Bighorn River	3,640	83
Buffalo Bill	2,740	97	Buffalo Bill Total Release	2,885	101
Boysen	1,255	58	Boysen Release	1,740	70



OPERATIONS OUTLOOK (August 1, 2022 through March 31, 2023)

Releases will be reduced to 2,500 cfs in the beginning of August under all inflow conditions. Releases will be adjusted as needed based on actual inflows and the March 31, 2023 storage target of 3617 feet. Forecasted end of March elevations depend on April through July inflows forecasted for 2023. Storage in Bighorn Lake is expected to decrease until September under all inflow conditions.

Median Inflow Conditions								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Boysen Release (cfs)	1,251	1,250	1,150	800	800	800	799	800
Buffalo Bill Release (cfs)	1,862	1,600	725	205	205	205	205	205
Tributary Gain (cfs)	-1,031	92	973	921	590	668	861	1,072
Monthly Inflow (cfs)	2,082	2,942	2,848	1,926	1,595	1,673	1,865	2,077
Monthly Inflow (kaf)	128.0	175.1	175.1	114.6	98.1	102.9	103.6	127.7
Monthly Release (kaf)	183.3	166.0	153.1	143.2	147.9	147.9	133.6	157.2
Afterbay Release (cfs)	2,981	2,790	2,490	2,406	2,406	2,406	2,406	2,556
River Release (cfs)	2,504	2,450	2,450	2,406	2,406	2,406	2,406	2,556
End-of-Month Content (kaf)	910.1	923.3	949.6	925.2	879.7	838.9	812.8	787.6
End-of-Month Elevation (feet)	3631.4	3632.7	3635.1	3632.9	3628.2	3623.1	3619.4	3615.5
Minimum Inflow Conditions								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Boysen Release (cfs)	1,150	1,101	899	600	600	600	600	699
Buffalo Bill Release (cfs)	1,862	1,600	696	205	205	205	205	205
Tributary Gain (cfs)	-1,350	-222	728	776	470	533	675	916
Monthly Inflow (cfs)	1,662	2,479	2,323	1,581	1,275	1,338	1,480	1,820
Monthly Inflow (kaf)	102.2	147.5	142.8	94.1	78.4	82.3	82.2	111.9
Monthly Release (kaf)	169.9	139.8	129.4	119.3	123.2	123.2	111.3	107.6
Afterbay Release (cfs)	2,763	2,350	2,104	2,004	2,004	2,004	2,004	1,750
River Release (cfs)	2,260	2,000	2,004	2,004	2,004	2,004	2,004	1,750
End-of-Month Content (kaf)	897.7	909.5	927.3	906.3	865.7	829.1	803.9	812.4
End-of-Month Elevation (feet)	3630.1	3631.4	3633.1	3631.0	3626.5	3621.8	3618.1	3619.4
Maximum Inflow Conditions								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Boysen Release (cfs)	1,451	1,250	1,150	1,027	1,000	1,000	999	1,000
Buffalo Bill Release (cfs)	2,036	1,924	753	622	355	355	357	1,195
Tributary Gain (cfs)	-576	513	1,258	1,118	769	836	1,104	1,296
Monthly Inflow (cfs)	2,911	3,687	3,161	2,767	2,124	2,191	2,460	3,491
Monthly Inflow (kaf)	179.0	219.4	194.4	164.6	130.6	134.7	136.6	214.7
Monthly Release (kaf)	191.9	185.8	177.9	201.5	208.8	208.8	208.3	246.0
Afterbay Release (cfs)	3,121	3,123	2,893	3,387	3,395	3,395	3,750	4,000
River Release (cfs)	2,721	2,893	2,893	3,387	3,395	3,395	3,750	4,000
End-of-Month Content (kaf)	952.5	990.2	1,011.1	978.3	904.5	834.7	766.9	739.9
End-of-Month Elevation (feet)	3635.4	3638.4	3640.0	3637.5	3630.9	3622.6	3612.1	3607.2

OPERATIONS OUTLOOK (August 1, 2022 through March 31, 2023)

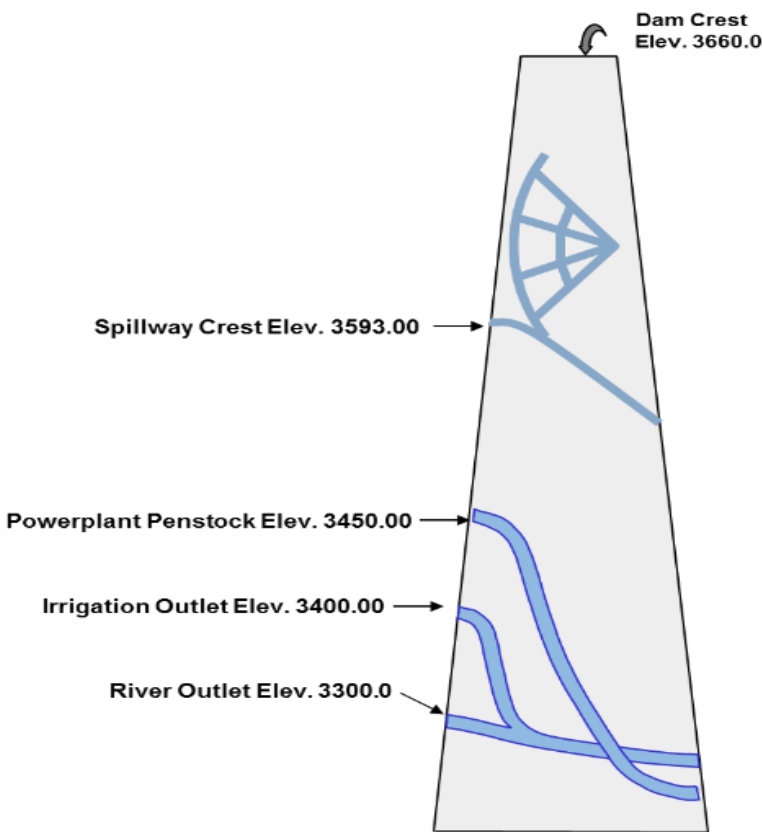
There is approximately 70 cfs of gain between Yellowtail Dam and Yellowtail Afterbay Dam from springs flowing into Yellowtail Afterbay. Total release from Yellowtail Dam is 70 cfs less than total release from Yellowtail Afterbay Dam.

Irrigation Demands Outlook								
Bighorn Canal (cfs)								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Median Forecast	477	340	40	0	0	0	0	0
Minimum Forecast	503	350	100	0	0	0	0	0
Maximum Forecast	400	230	0	0	0	0	0	0

Power Generation Outlook								
Current Number of Units Available: 3 of 4								
Approximate Yellowtail Powerplant Turbine Capacity: 6,150 cfs								
Approximate Yellowtail Powerplant Scheduled Generation Limit: 4,680 cfs								
Yellowtail Powerplant Release (cfs)								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Median Forecast	2,911	2,720	2,420	2,336	2,336	2,336	2,336	2,486
Minimum Forecast	2,693	2,280	2,034	1,934	1,934	1,934	1,934	1,680
Maximum Forecast	3,051	3,053	2,823	3,317	3,325	3,325	3,680	3,930

Yellowtail Powerplant Generation (gwh)								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Median Forecast	73.4	66.0	60.0	55.8	57.3	56.8	50.8	59.9
Minimum Forecast	133.6	107.0	98.6	91.0	93.5	92.5	82.6	79.9
Maximum Forecast	76.9	74.6	72.1	80.8	82.9	81.7	78.9	90.9

Yellowtail Spill (cfs)								
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Median Forecast	0	0	0	0	0	0	0	0
Minimum Forecast	0	0	0	0	0	0	0	0
Maximum Forecast	0	0	0	0	0	0	0	0

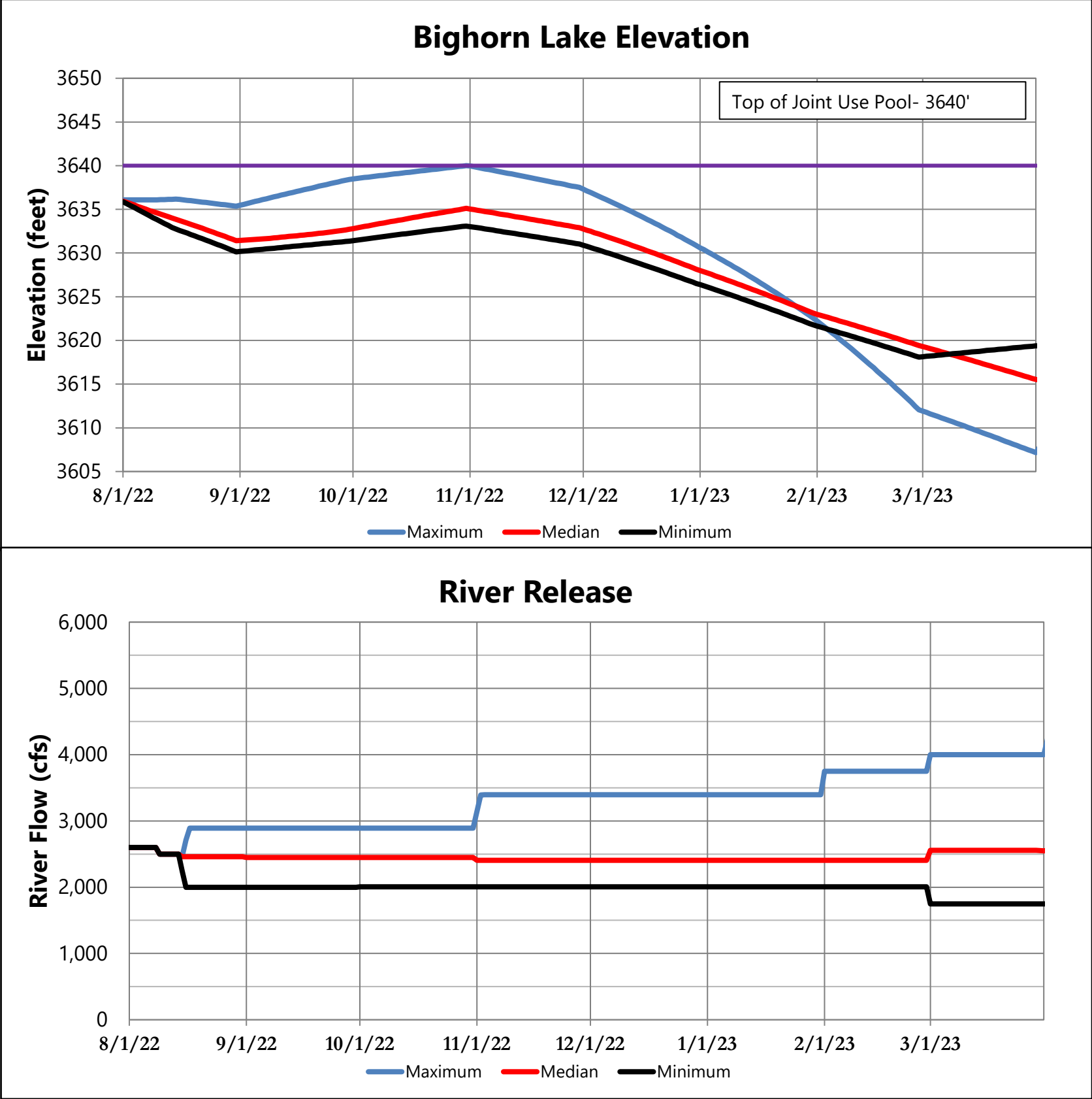


Release Outlook by Outlet

All releases are currently going through the powerplant and are expected to go through the powerplant under all inflow conditions.

OPERATIONS OUTLOOK (August 1, 2022 through March 31, 2023)

Projected elevations and the range of river releases are based on the median, minimum, and maximum inflow forecasts. End-of-month elevations and river releases vary based on the difference between forecasted inflow scenarios.



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