

# Yellowtail Dam Water Supply and Projected Operations



— BUREAU OF —  
RECLAMATION

**November 2024**



About 200 miles (322 km) across  
Bighorn River Basin Map Source: DEMIS Mapserver

<b>November Operating Range</b>			
<b>Forecast</b>	<b>Minimum</b>	<b>Median</b>	<b>Maximum</b>
<b>Monthly Average Inflow (cfs)</b>	1,715	1,825	1,940
<b>Monthly Average River Release (cfs)</b>	2,240	2,240	2,240
<b>End of November Elevation (feet)</b>	3630.0	3630.7	3631.4
<b>November 2024 Inflow Forecast (kaf)</b>			
November Volume			109
Percent of Average			86
<b>Water Year</b>	<b>Historic Inflow</b>	<b>Rank</b>	
2024	176	12	
2023	106	47	
2022	117	42	
2021	111	45	
<b>30 Year Average</b>	126		

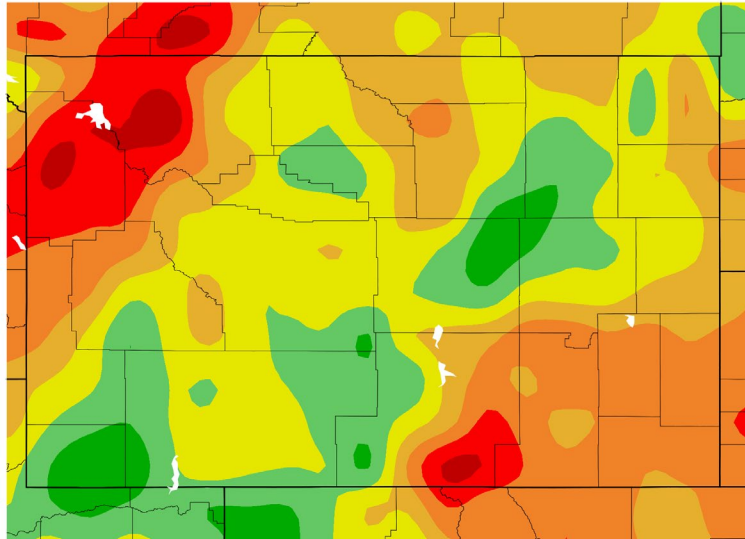


# Climate Departure from Normal

October 1 through October 31, 2024

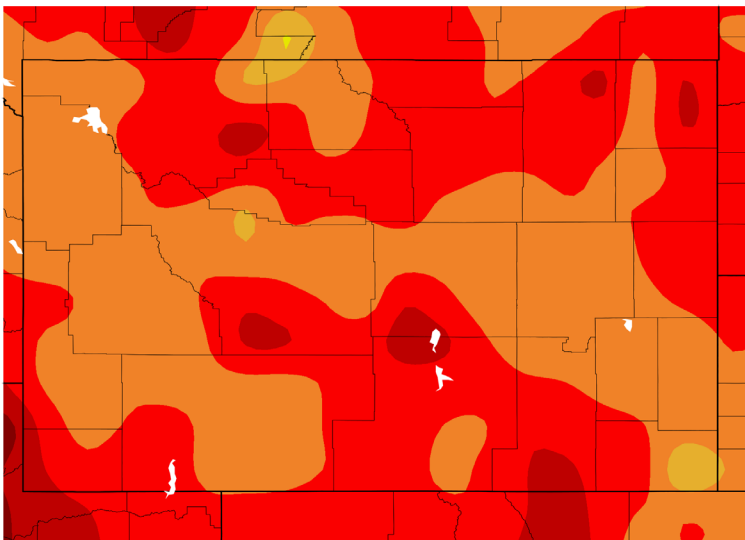
## Precipitation

Departure from Normal (inches)



Departure from Normal (°F)

## Temperature



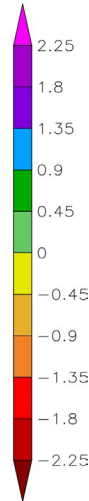
HPKCC using provisional data from NOAA Regional Climate Centers

# CLIMATE SUMMARY

Precipitation in the Bighorn River Basin above Yellowtail Dam was overall below average for October. Temperatures were above average.

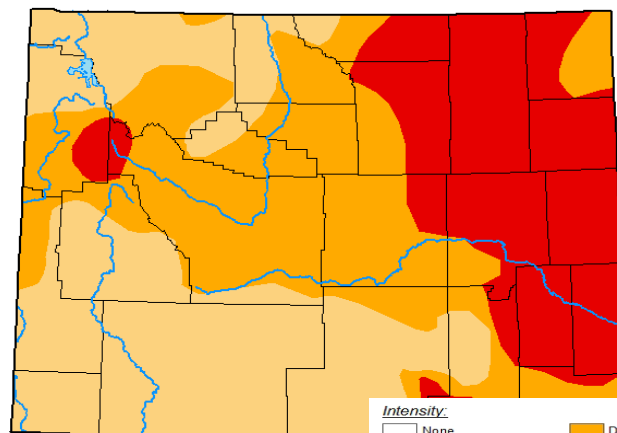
The climate outlook for November shows there is an equal chance precipitation and the temperature will be either below, above, or near average during November in the Bighorn River Basin.

The drought monitor map shows drought conditions in the Bighorn River Basin range from moderate to severe.



## Wyoming Drought Monitor Map

November 5, 2024



droughtmonitor.unl.edu

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

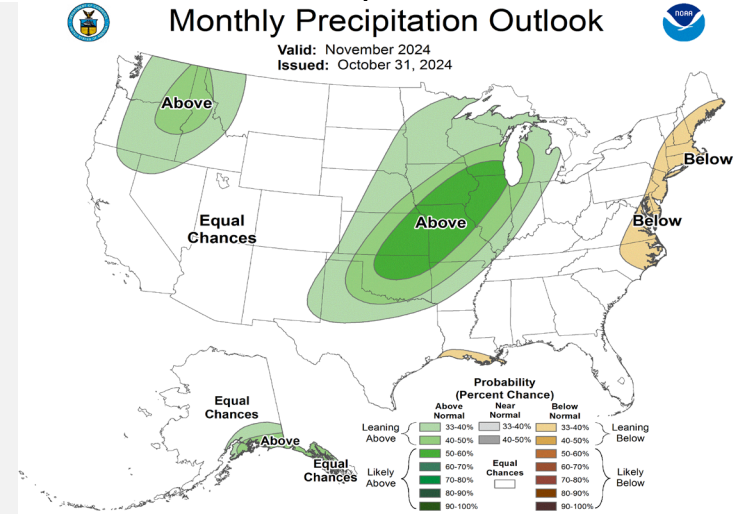
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

# November Climate Outlook

## Precipitation

### Monthly Precipitation Outlook

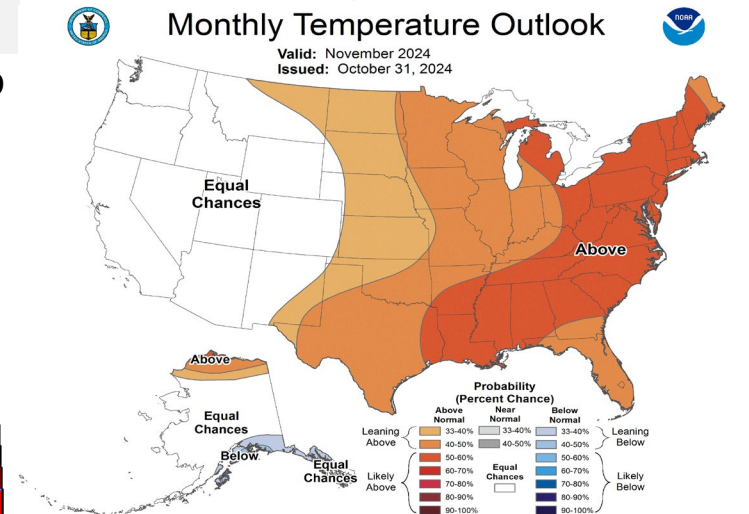
Valid: November 2024  
Issued: October 31, 2024



## Temperature

### Monthly Temperature Outlook

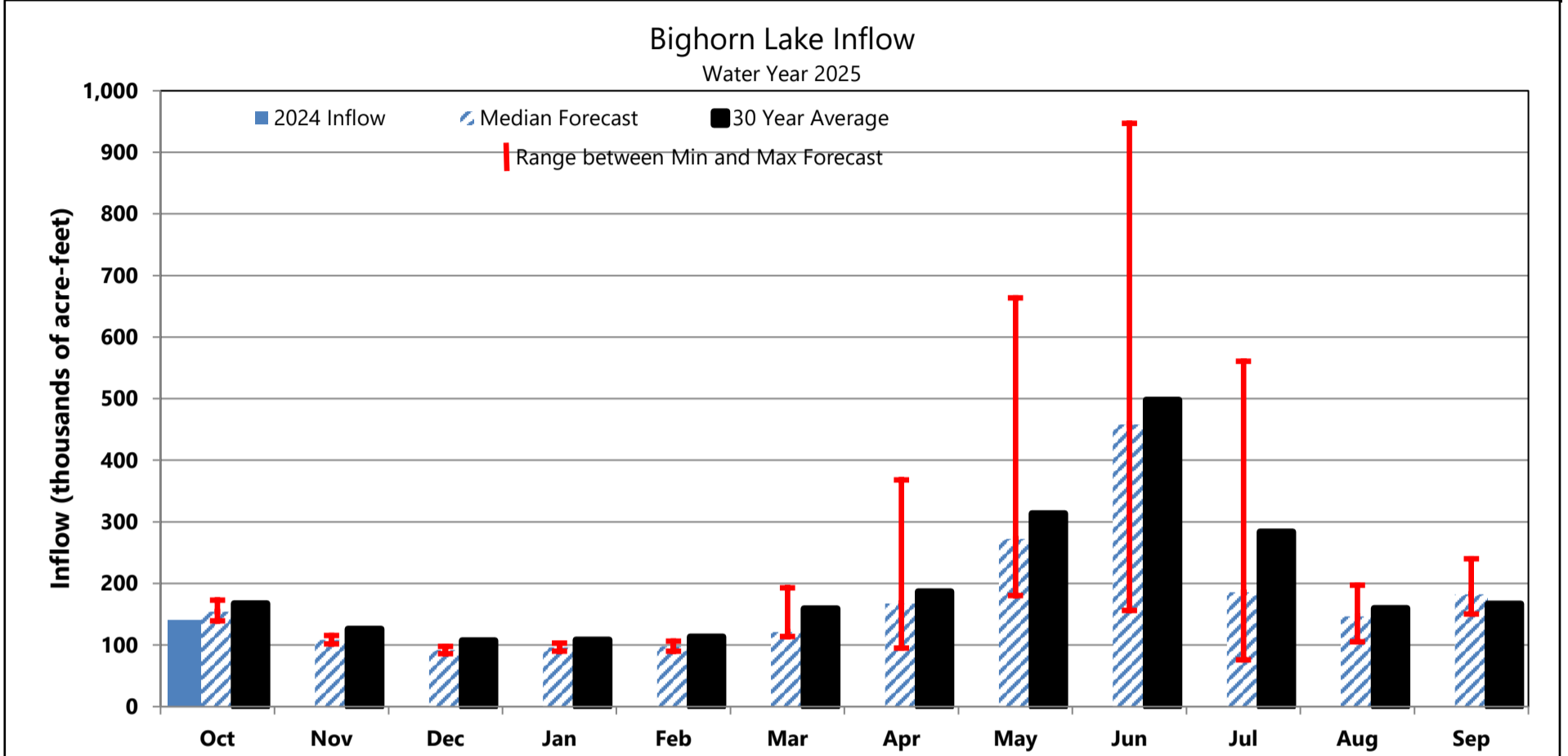
Valid: November 2024  
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# FORECAST SUMMARY

Streamflow data, climate data, and planned releases from Boysen and Buffalo Bill Reservoirs are used to compute an inflow forecast for Bighorn Lake. Actual October inflow was near the minimum inflow forecast.

October Forecast Review				
	Median Forecast (kaf)	Actual (kaf)	Difference (kaf)	Actual (% of Avg)
October Inflow	154.1	141.0	(13.1)	84

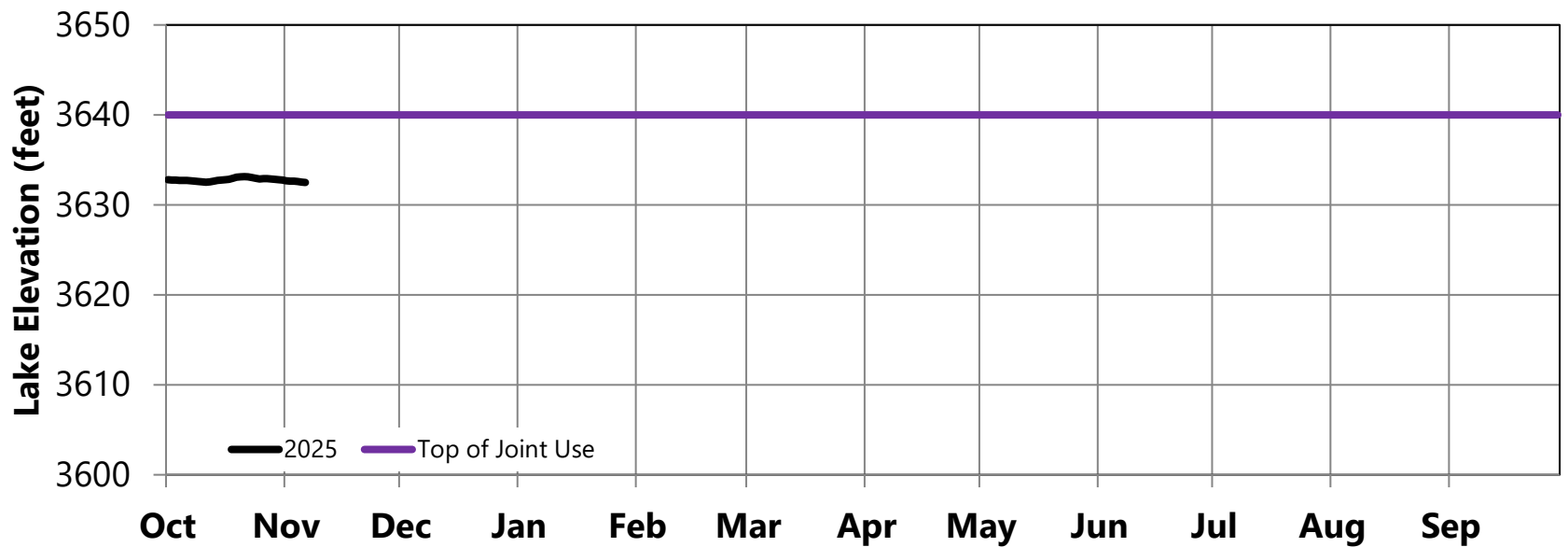


# OPERATIONS REVIEW (October 1, 2024 through October 31, 2024)

Releases to the Bighorn River decreased to 2,300 cfs during October based on expected winter releases. The elevation of Bighorn Lake decreased by 0.1 feet during October.

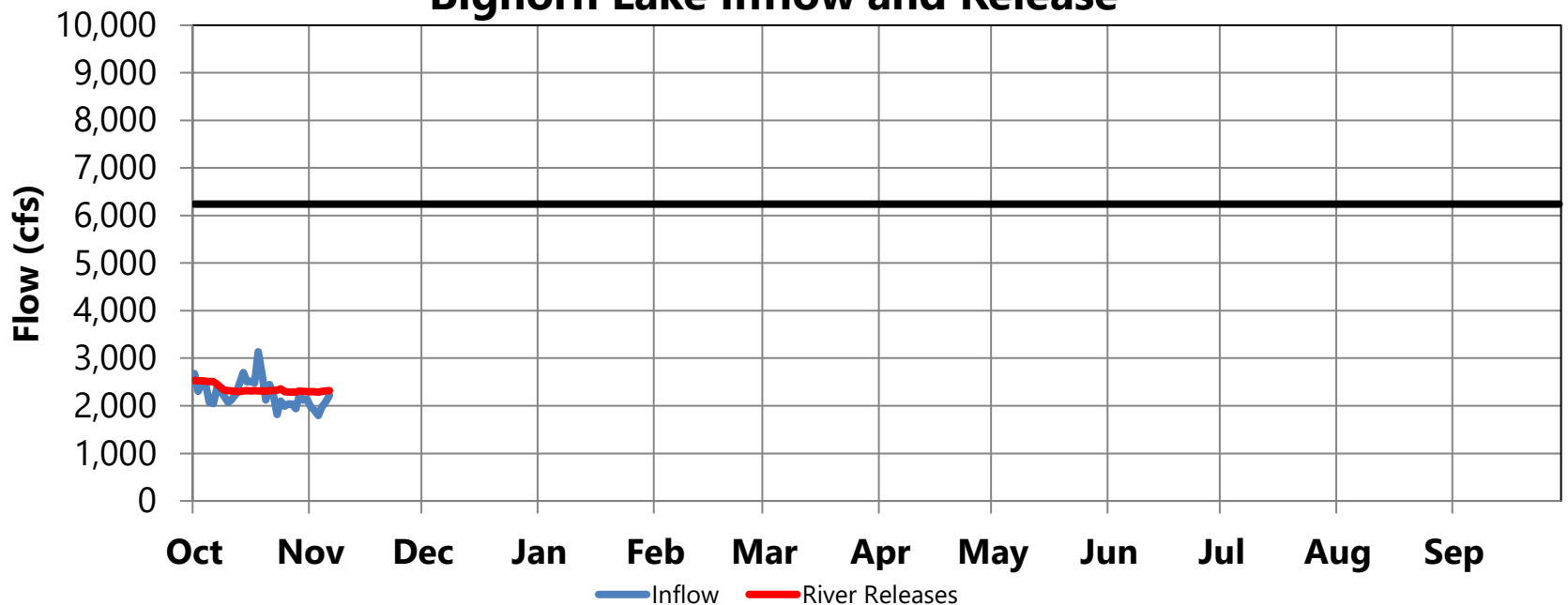
November 1 Storage Conditions				
	Elevation feet	Storage acre-feet	Percent of Average	Percent Full
Bighorn Lake	3632.8	923,680	104	91
Buffalo Bill	5371.3	368,975	86	57
Boysen	4713.8	547,309	97	74

## Bighorn Lake Operations Water Year 2025



	Average October Inflow		Average October Release		
	Monthly Avg cfs	Percent of Average	Monthly Avg cfs	Percent of Average	
Bighorn Lake	2,295	84	Bighorn River	2,360	90
Buffalo Bill	350	71	Buffalo Bill Total Release	865	120
Boysen	455	48	Boysen Release	875	101

## Bighorn Lake Inflow and Release



# OPERATIONS OUTLOOK (November 1, 2024 through March 31, 2025)

Winter releases to the Bighorn River are set in early November. The winter release is based on end of October storage in the Bighorn Lake, end of March 2025 storage target of 3617 feet, planned releases from Boysen and Buffalo Bill during November through March, and forecasted gains for November through March. This year's initial winter release is 2,210 cfs. Releases to the Bighorn River will be adjusted up and down through the winter based on actual inflows into Bighorn Lake.

## Median Inflow Conditions

	Nov	Dec	Jan	Feb	Mar
Boysen Release (cfs)	700	699	699	700	699
Buffalo Bill Release (cfs)	203	203	203	203	203
Tributary Gain (cfs)	921	590	667	861	1,070
Monthly Inflow (cfs)	1,824	1,492	1,569	1,764	1,972
Monthly Inflow (kaf)	108.5	91.8	96.5	97.9	121.3
Monthly Release (kaf)	133.3	135.9	135.9	122.8	153.7
Afterbay Release (cfs)	2,240	2,210	2,210	2,210	2,500
River Release (cfs)	2,240	2,210	2,210	2,210	2,500
End-of-Month Content (kaf)	903.1	863.2	828.1	807.2	779.0
End-of-Month Elevation (feet)	3630.7	3626.2	3621.6	3618.6	3614.1

## Minimum Inflow Conditions

	Nov	Dec	Jan	Feb	Mar
Boysen Release (cfs)	701	699	699	700	699
Buffalo Bill Release (cfs)	205	205	205	205	205
Tributary Gain (cfs)	807	494	561	715	948
Monthly Inflow (cfs)	1,713	1,398	1,465	1,620	1,852
Monthly Inflow (kaf)	101.9	86.0	90.1	90.0	113.9
Monthly Release (kaf)	133.3	132.8	129.7	114.4	115.5
Afterbay Release (cfs)	2,240	2,160	2,110	2,060	1,879
River Release (cfs)	2,240	2,160	2,110	2,060	1,879
End-of-Month Content (kaf)	896.5	853.9	818.6	798.0	800.7
End-of-Month Elevation (feet)	3630.0	3625.1	3620.3	3617.2	3617.6

## Maximum Inflow Conditions

	Nov	Dec	Jan	Feb	Mar
Boysen Release (cfs)	701	699	699	700	1,299
Buffalo Bill Release (cfs)	205	205	205	205	644
Tributary Gain (cfs)	1,035	686	774	1,008	1,194
Monthly Inflow (cfs)	1,941	1,590	1,678	1,913	3,137
Monthly Inflow (kaf)	115.5	97.8	103.2	106.3	192.9
Monthly Release (kaf)	133.3	139.0	142.0	138.8	198.3
Afterbay Release (cfs)	2,240	2,260	2,310	2,500	3,226
River Release (cfs)	2,240	2,260	2,310	2,500	3,226
End-of-Month Content (kaf)	910.1	873.2	838.6	810.0	808.8
End-of-Month Elevation (feet)	3631.4	3627.4	3623.1	3619.0	3618.8

# OPERATIONS OUTLOOK (November 1, 2024 through March 31, 2025)

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)

	Nov	Dec	Jan	Feb	Mar
Median Forecast	0	0	0	0	0
Minimum Forecast	0	0	0	0	0
Maximum Forecast	0	0	0	0	0

## Power Generation Outlook

Current Number of Units Available: 4 of 4

Approximate Yellowtail Powerplant Turbine Capacity: 8,200 cfs

Approximate Yellowtail Powerplant Scheduled Generation Limit: 6,200 cfs

### Yellowtail Powerplant Release (cfs)

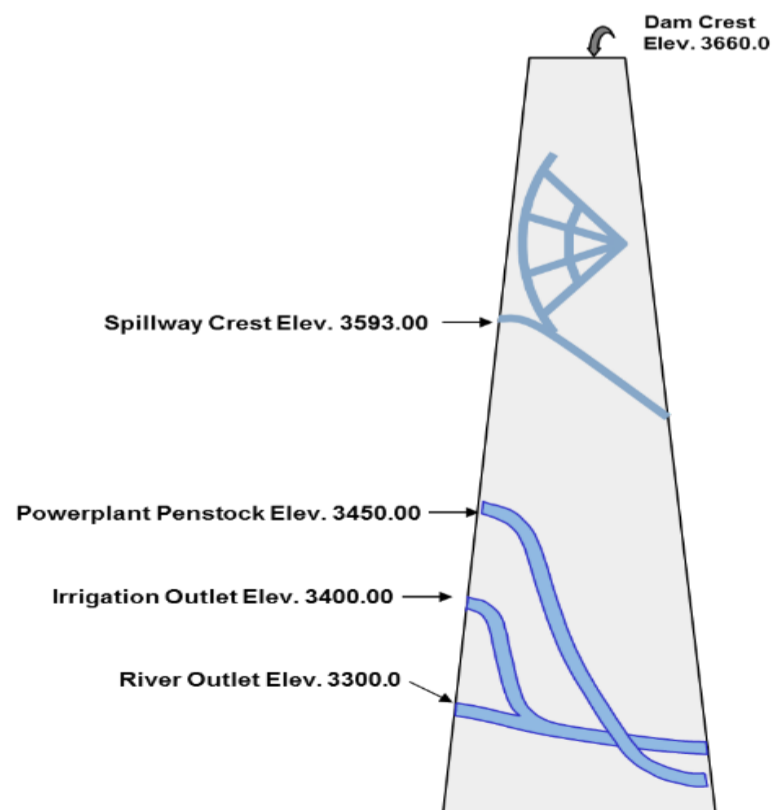
	Nov	Dec	Jan	Feb	Mar
Median Forecast	2,170	2,140	2,140	2,140	2,430
Minimum Forecast	2,170	2,090	2,040	1,990	1,809
Maximum Forecast	2,170	2,190	2,240	2,430	3,156

### Yellowtail Powerplant Generation (gwh)

	Nov	Dec	Jan	Feb	Mar
Median Forecast	47	48	48	44	55
Minimum Forecast	47	47	46	41	41
Maximum Forecast	47	49	51	49	71

### Yellowtail Spill (cfs)

	Nov	Dec	Jan	Feb	Mar
Median Forecast	0	0	0	0	0
Minimum Forecast	0	0	0	0	0
Maximum Forecast	0	0	0	0	0

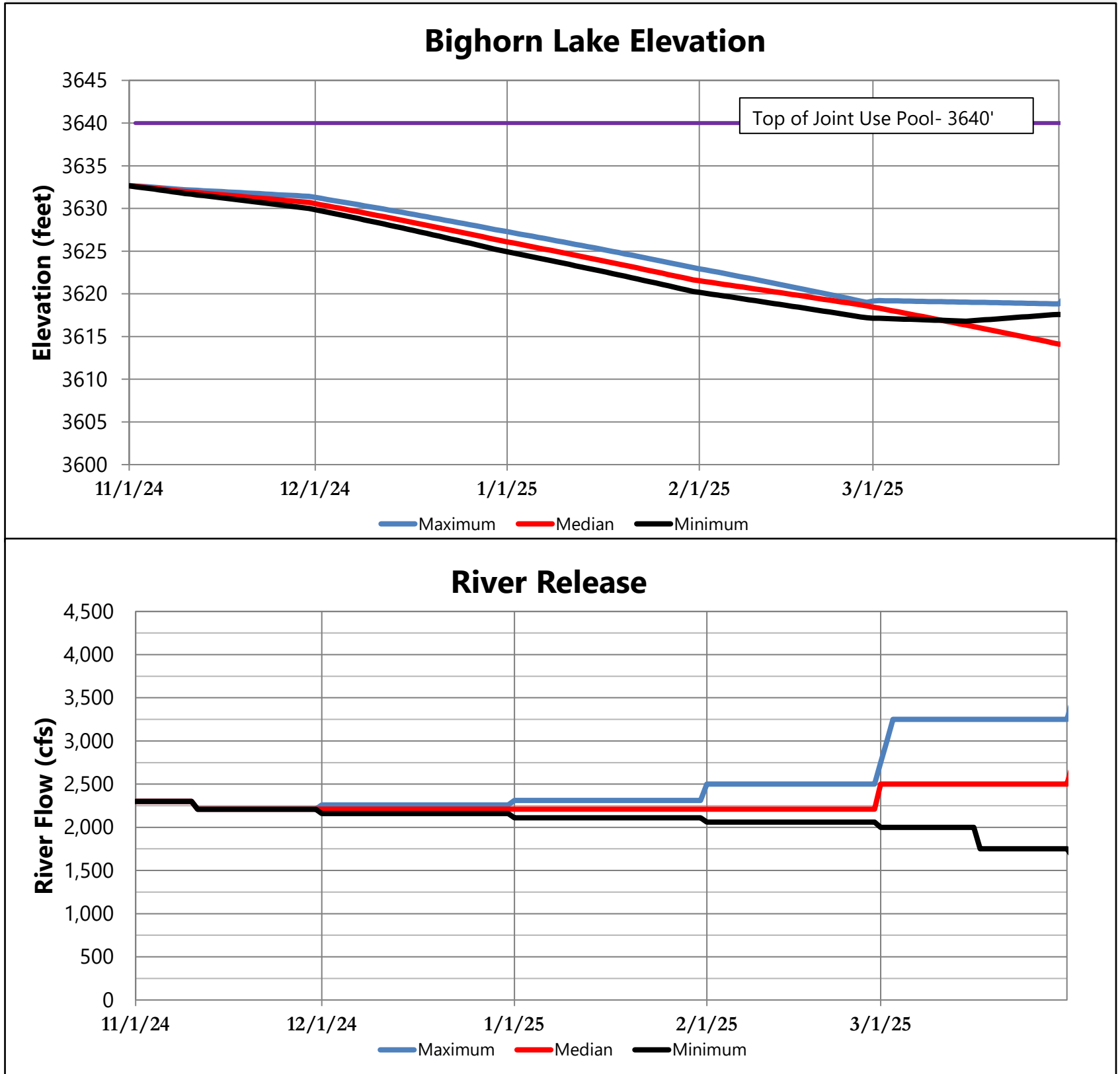


## Release Outlook by Outlet

Yellowtail Powerplant bypass releases are not anticipated between now and end of March under all three inflow forecasts.

# OPERATIONS OUTLOOK (November 1, 2024 through March 31, 2025)

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.



## Contact Us

Clayton Jordan  
[cjordan@usbr.gov](mailto:cjordan@usbr.gov)  
406-247-7334

Chris Gomer  
[cgomer@usbr.gov](mailto:cgomer@usbr.gov)  
406-247-7307

Monthly Operating Plans, Current Conditions, Snowpack and Other Water Management Information  
[https://www.usbr.gov/gp/lakes\\_reservoirs/warepts/main\\_menu.html](https://www.usbr.gov/gp/lakes_reservoirs/warepts/main_menu.html)