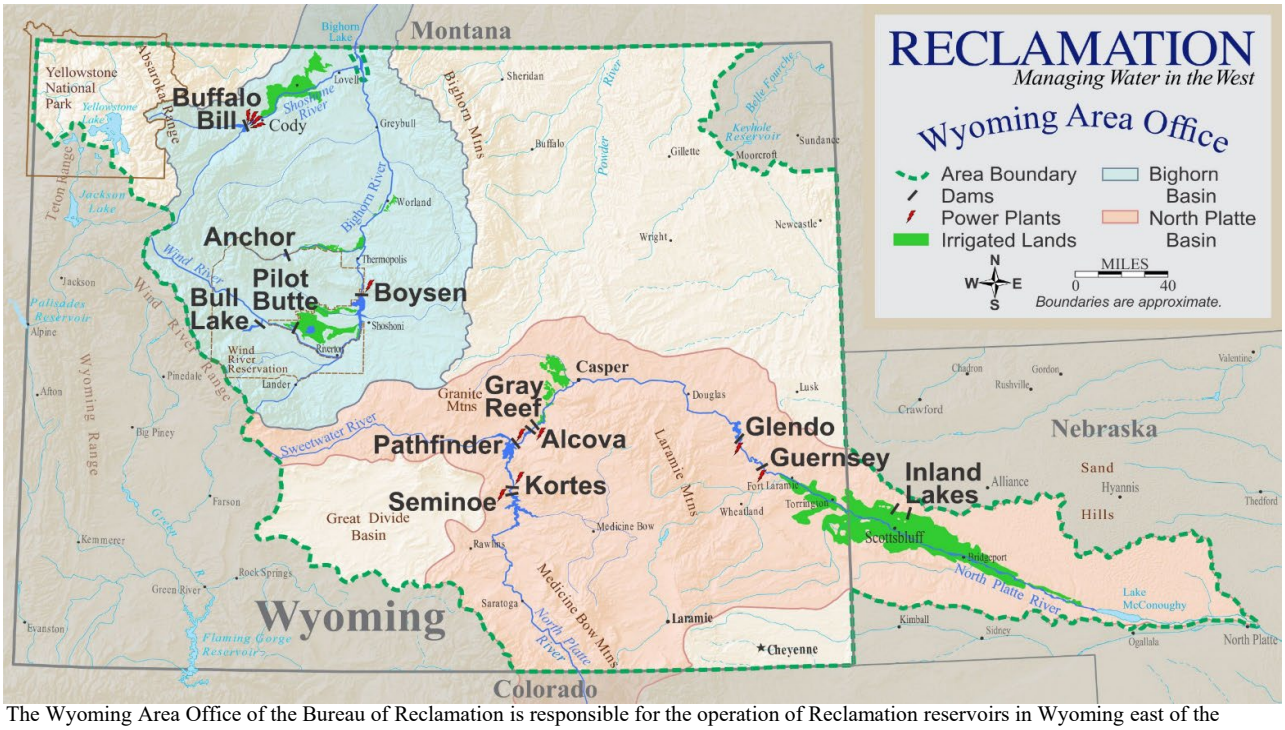
Bighorn Basin Water Supply and Utilization Report
Wyoming Area Office
Report for December 2023



The Wyoming Area Office of the Bureau of Reclamation is responsible for the operation of Reclamation reservoirs in Wyoming east of the Continental Divide except for Keyhole Reservoir. Four off-stream reservoirs in Nebraska commonly referred to as the Inland Lakes also fall within the Wyoming Area. The North Platte River Basin Reservoirs have a combined storage capacity of 2,800,000 acre-feet. The major reservoirs in the Shoshone and Wind/Bighorn Basins have a combined storage capacity of 1,600,000 acre-feet.

Bureau of Reclamation
Missouri Basin Region
Wyoming Area Office
Mills, Wyoming

January 2024

Report for December 2023
WATER SUPPLY AND UTILIZATION REPORT
BIGHORN RIVER BASIN
WYOMING AREA OFFICE

This report concerns the operation of Reclamation facilities in the Shoshone and Wind/Bighorn River Basins.

Reclamation defines a water year as the time period of October 1 through September 30. Water year is abbreviated in this report as W. Yr.

Other organizations furnished information for the Water Supply and Utilization Report. Their cooperation is greatly appreciated.

This report is available on the Internet and can be accessed by following these steps:

1. **Log on to the Great Plains Home Page at http://www.usbr.gov/gp**
2. **Select Water Operations.**
3. **Select Water Management Information.**
4. **Select Water Supply Report.**
5. **Under Bighorn Basin, select the current report or reports from the previous 12 months**.

BIGHORN RIVER BASIN RESERVOIR INFLOW

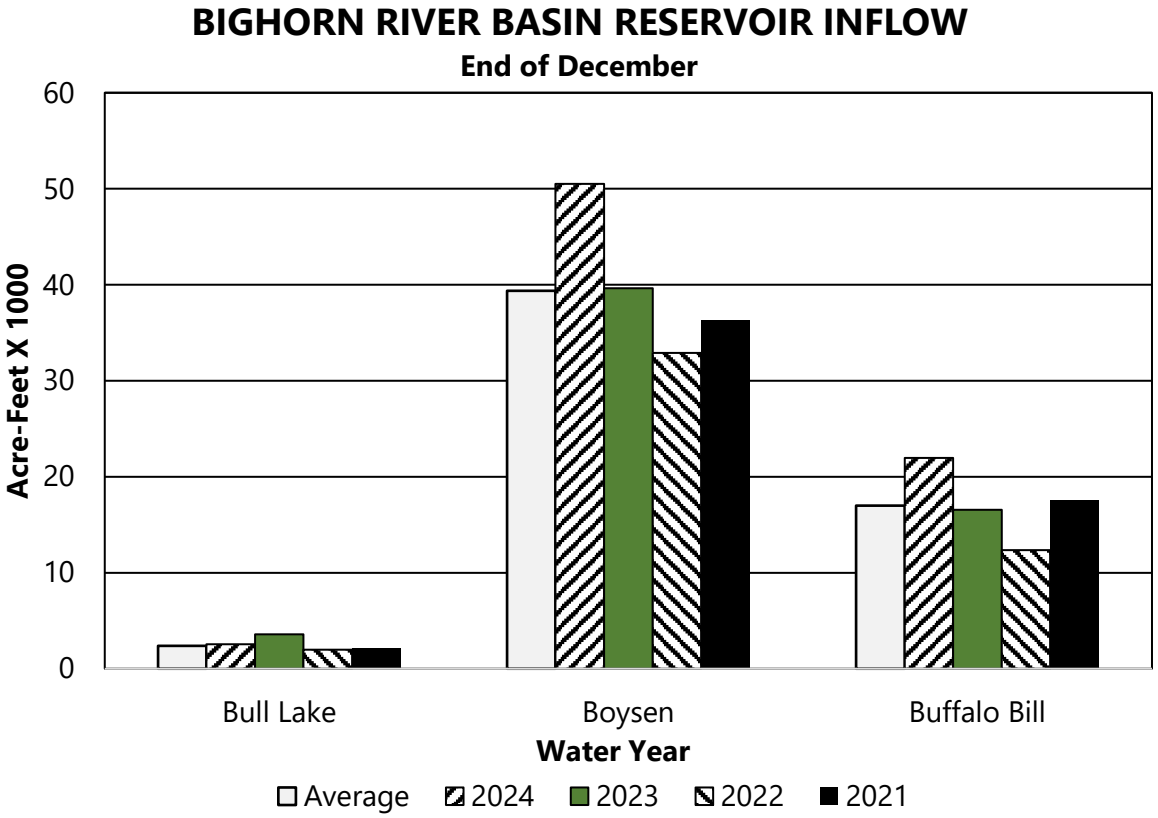
End of December Inflow and Historical Inflows, values in 1,000 acre-feet

Reservoir	W. Yr. 2024	30 Yr. Avg.	% of Avg.	W. Yr. 2023	W. Yr. 2022	W. Yr. 2021
Bull Lake	2.5	2.4	106	3.6	2.0	2.1
Boysen	50.5	39.4	128	39.6	32.9	36.3
Buffalo Bill	22.0	17.0	129	16.6	12.3	17.6

30 year average is based on the 1994- 2023 period.

End of December Accumulated Water Year Inflows in 1,000 acre-feet

Reservoir	W. Yr. 2024	30 Yr. Avg.	% of Avg.
Bull Lake	15.6	12.3	127
Boysen	205.4	145.2	141
Buffalo Bill	114.4	70.0	163



BIGHORN RIVER BASIN RESERVOIR OUTFLOW

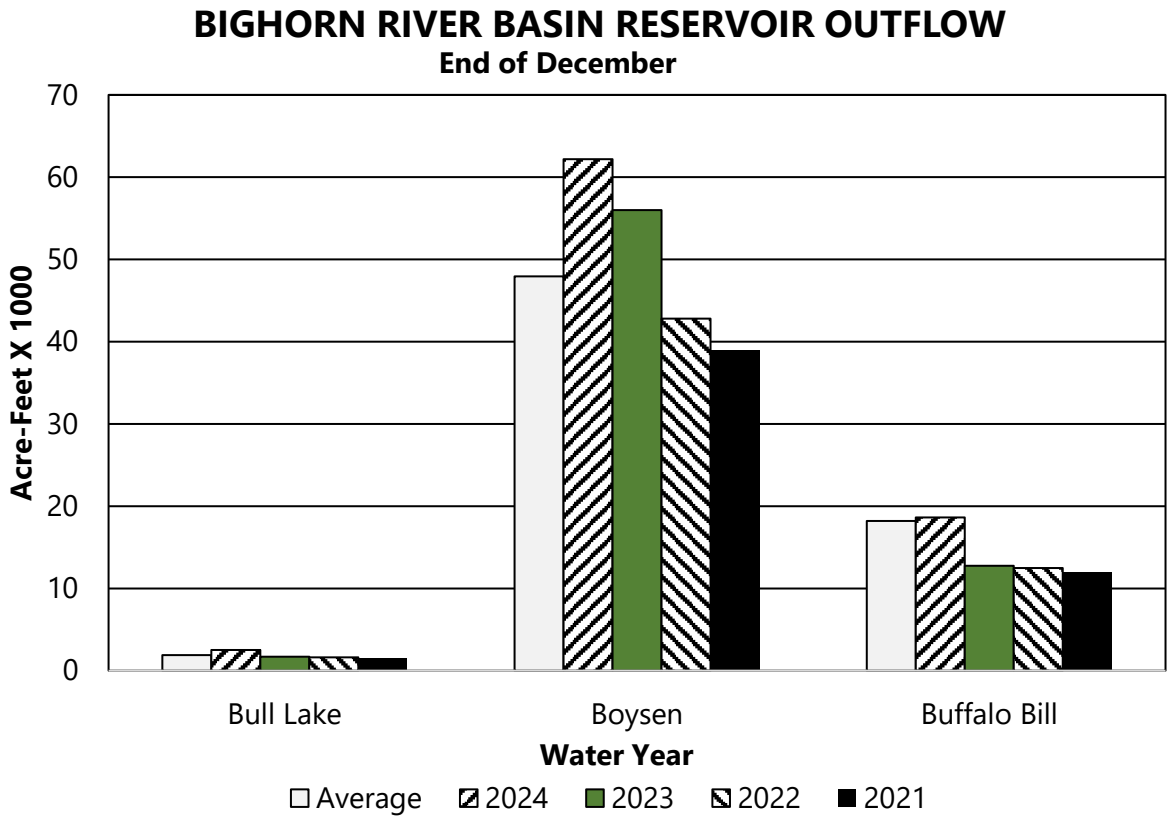
End of December Outflow and Historical Outflows, values in 1,000 acre-feet

Reservoir	W. Yr. 2024	30 Yr. Avg.	% of Avg.	W. Yr. 2023	W. Yr. 2022	W. Yr. 2021
Bull Lake	2.5	1.9	132	1.7	1.6	1.5
Boysen	62.2	47.9	130	56.0	42.8	38.9
Buffalo Bill	18.6	18.2	102	12.8	12.5	12.0

30 year average is based on the 1994- 2023 period.

End of December Accumulated Water Year Outflows in 1,000 acre-feet.

Reservoir	W. Yr. 2024	30 Yr. Avg.	% of Avg.
Bull Lake	25.5	10.7	237
Boysen	223.1	148.3	150
Buffalo Bill	89.0	82.0	108

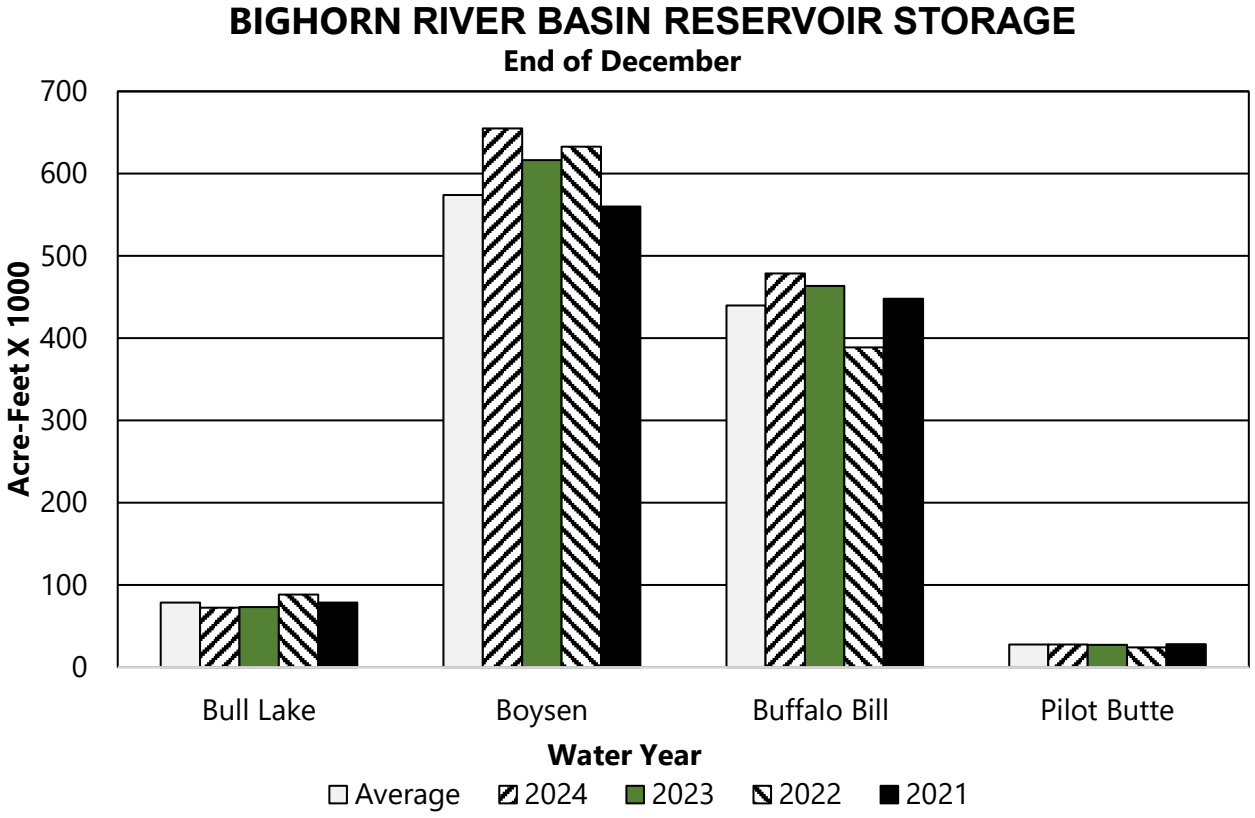


BIGHORN RIVER BASIN RESERVOIR STORAGE

End of December Storage, Historical Storage, and Storage Capacity in 1,000 acre-feet.

Reservoir	W. Yr. 2024	30 Yr. Avg.	% of Avg.	W. Yr. 2023	W. Yr. 2022	W. Yr. 2021	Total Conservation Storage Capacity	Percent of Capacity
Bull Lake	72.3	78.3	92	72.9	88.0	78.5	152.5	47
Boysen	655.1	573.9	114	616.6	632.6	560.0	741.6	88
Buffalo Bill	478.5	439.9	109	463.3	388.8	447.8	646.6	74
Pilot Butte	27.4	27.5	100	27.2	24.1	28.1	33.7	81

30 year average is based on the 1994- 2023 period.



BIGHORN RIVER BASIN RESERVOIR GENERATION

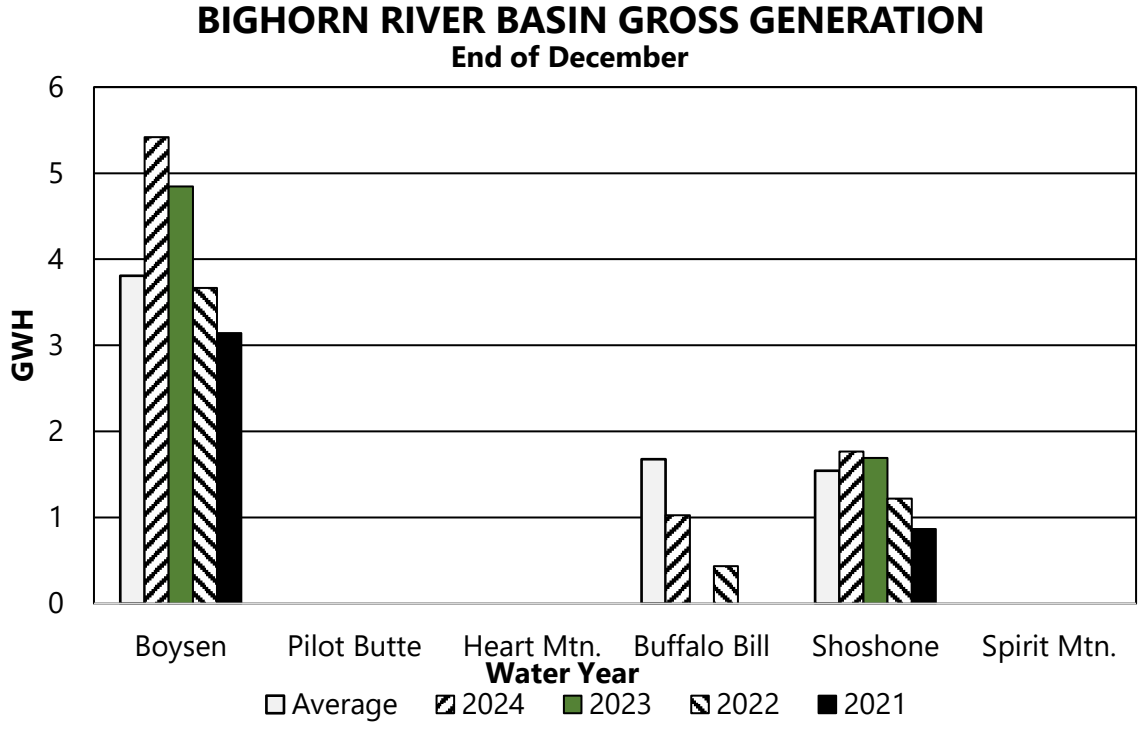
End of December Gross Generation and Historical Generation in giga-watt hours (GWH).

Reservoir	W. Yr. 2024	30 Yr. Avg.	% of Avg.	W. Yr. 2023	W. Yr. 2022	W. Yr. 2021
Boysen	5.4	3.8	142.2	4.8	3.7	3.1
Pilot Butte	0.0	0.0	0.0	0.0	0.0	0.0
Heart Mtn.	0.0	0.0	0.0	0.0	0.0	0.0
Buffalo Bill	1.0	1.7	61.2	0.0	0.4	0.0
Shoshone	1.8	1.5	114.4	1.7	1.2	0.9
Spirit Mtn.	0.0	0.0	0.0	0.0	0.0	0.0

Th 30 year average is based on the 1994 - 2023 period. Pilot Butte Powerplant is currently in "mothballed" status and does not generate electricity. Spirit Mountain average is based on the 1996 - 2023 period.

End of December Accumulated Gross Generation Water Year in GWH.

	Powerplant	W. Yr. 2024	30 Yr. Avg.	% of Avg.
	Boysen	17.6	10.8	163.2
	Pilot Butte	0	0.2	0
	Heart Mtn.	2.0	1.1	183.3
	Buffalo Bill	5.5	7.2	77.2
#	**Shoshone**	4.9	4.7	103.7
	Spirit Mtn.	1.6	1.2	130.3



BIGHORN SNOWPACK WATER CONTENT

January 1st Snow Water Equivalent — SWE in inches

WATERSHED	W. Yr. 2024	30 Yr. Median	% of Median	W. Yr. 2023	W. Yr. 2022	W. Yr. 2021
Bull Lake Reservoir	4.3	5.5	78%	6.2	6.1	3.8
Boysen Reservoir	4.9	6.3	77%	6.6	6.5	4.9
Buffalo Bill Reservoir	6.2	8.5	74%	8.7	7.7	7.9

Boysen Reservoir Watershed

SWE in inches

Snotel Stations (Elevation)	Water Content	30 Yr. Median
Burroughs Creek (8,750)	3.8	6.4
Hobbs Park (10,100)	6.6	6.2
Kirwin (9,800)	5.9	5.6
Little Warm (9,620)	3.5	4.4
Togwotee Pass (9,580)	6.2	10.8
Townsend Creek (8,700)	3.5	4.2
Younts Peak (8,350)	4.5	6.8
Watershed Average	**4.9**	**6.3**

Buffalo Bill Reservoir Watershed

SWE in inches

Snotel Stations (Elevation)	Water Content	30 Yr. Median
Blackwater (9,780)	9.6	11
Evening Star (9,200)	8.2	12.4
Marquette (8,760)	6.2	3.5
Sylvan Lake (8,420)	6.2	9
Sylvan Road (8,120)	2.8	5.8
Togwotee Pass (9,580	6.2	10.8
Younts Peak (8,350)	4.5	6.8
Watershed Average	**6.2**	**8.5**

Bull Lake Reservoir Watershed

SWE in inches

Snotel Stations (Elevation)	Water Content	30 Yr. Median
Elkhart Park (8,400)	2.7	5.8
Hobbs Park (10,100)	6.6	6.2
Little Warm (9,620)	3.5	4.4
Watershed Average	**4.3**	**5.5**

SWE (Snow Water Content is the amount of water in the snowpack expressed in inches).
Median for the 1991-2020 period.

January 1 BIGHORN WATER SUPPLY FORECAST

April through July Forecast and Historical Runoff Volumes KAF

Forecast Points	April - July Forecast Reasonable Minimum	April - July Forecast Expected	April - July Forecast Reasonable Maximum	30 Yr. April - July Avg.	Expected % of Avg.	Actual April - July Runoff W. Yr. 2023	Actual April - July Runoff W. Yr. 2022	Actual April - July Runoff W. Yr. 2021
Bull Lake Reservoir	120	145	210	146	99	187	141	126
Wind River above Bull Lake Creek	300	440	750	440	100	523	349	347
Boysen Reservoir	300	650	1200	625	104	1058	488	380
Buffalo Bill Reservoir	500	750	1000	754	99	765	770	548

The probability is estimated to be 9 chances in 10 that the actual volume will fall between the reasonable minimum and reasonable maximum. Average is based on the 1993-2022 period.

Forecast Points	90%	70%	50%	% of Avg	30%	10%	30 Yr. April - July Runoff Avg.
Bull Lake Reservoir	120	135	**145**	**99**	172	210	146
Wind River above Bull Lake Creek	300	383	**440**	**100**	567	750	440
Boysen Reservoir	300	507	**650**	**104**	875	1200	625
Buffalo Bill Reservoir	500	648	**750**	**99**	852	1000	754

Average is based on the 1994-2023 period.