

Tiber Dam Water Supply and Projected Operations



— BUREAU OF —
RECLAMATION

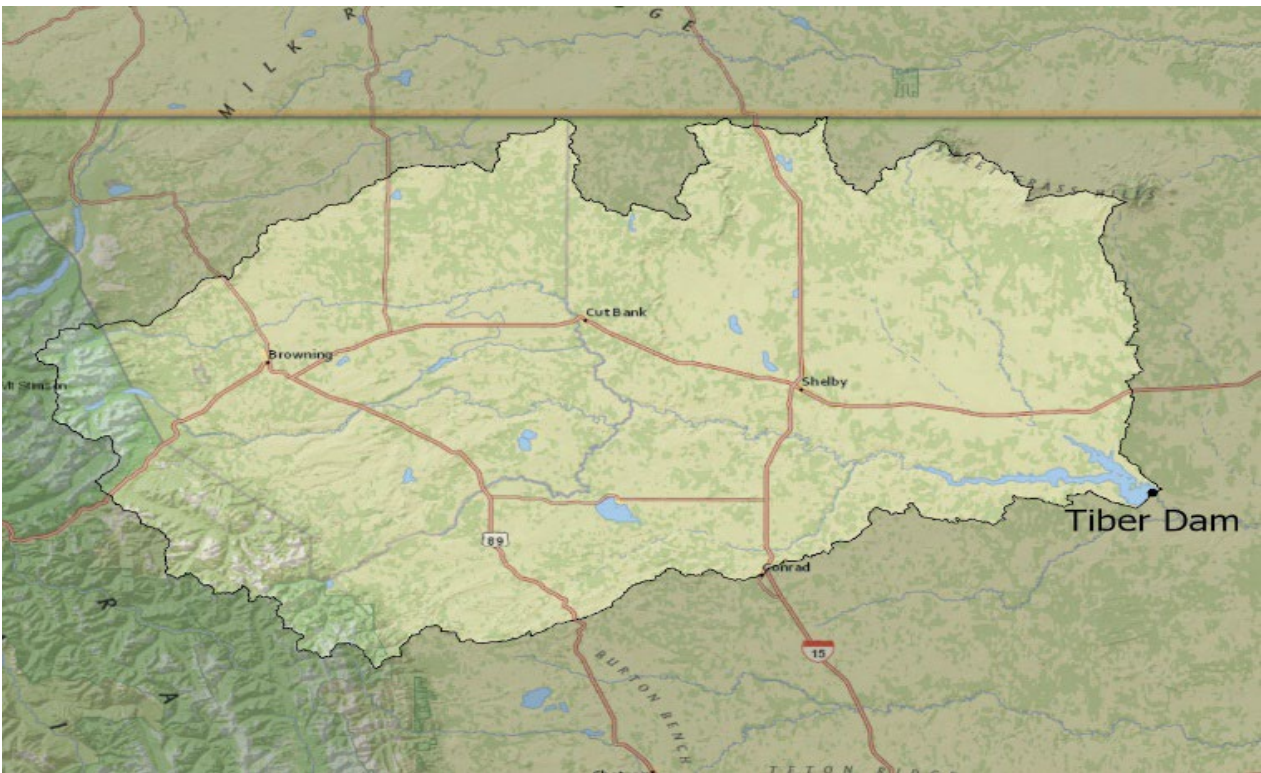
January 2023



January Operating Range			
Forecast	Minimum	Median	Maximum
Monthly Average Inflow (cfs)	160	195	285
Monthly Average River Release (cfs)	500	500	500
End of January Elevation (feet)	2981.6	2981.8	2982.2



April through July 2023 Inflow Forecast (kaf)		
April through July Volume		368
Percent of Average		98
Water Year	Historic Inflow	Rank
2022	338	40
2021	262	53
2020	486	21
2019	460	26
30 Year Average		377

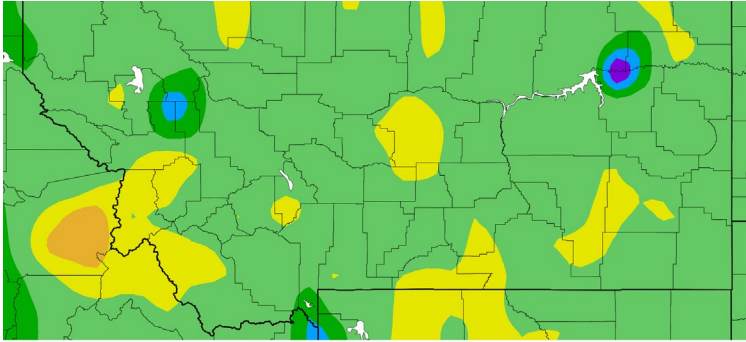


Climate Departure from Normal

December 1 through December 31, 2022

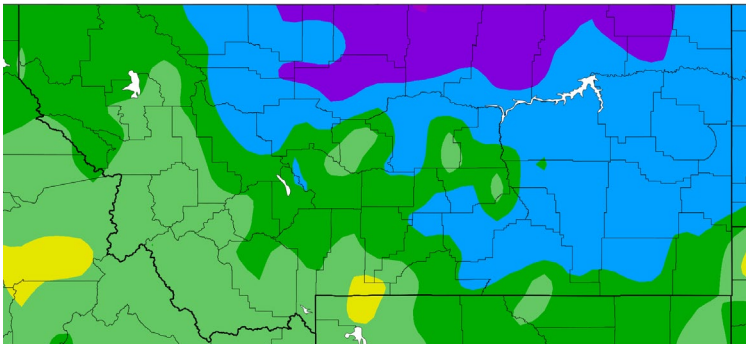
Precipitation

Departure from Normal (inches)



Temperature

Departure from Normal (°F)



HPRCC using provisional data NOAA Regional Climate Centers

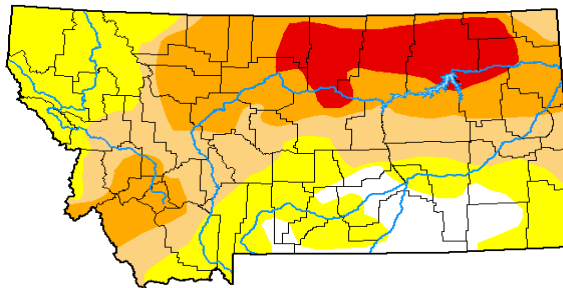
CLIMATE SUMMARY

Precipitation during December in the Marias River basin above Tiber Dam was near average. Temperatures were below average. Moderate to severe drought conditions persist in the basin.

The climate outlook for January shows an equal chance for below, near, or above average precipitation in the Marias River basin. There is a 33 to 40 percent chance temperatures will be above average.

Montana Drought Monitor Map

January 3, 2023



Intensity:

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

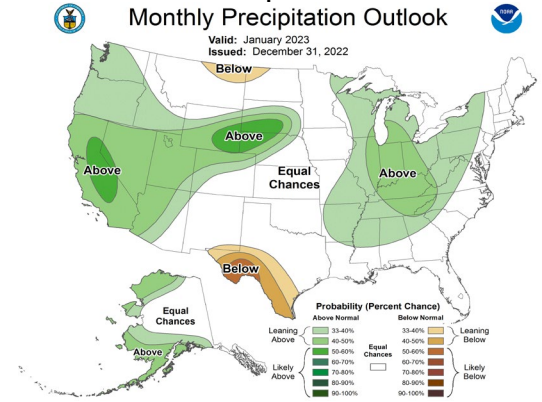


January Climate Outlook

Precipitation

Monthly Precipitation Outlook

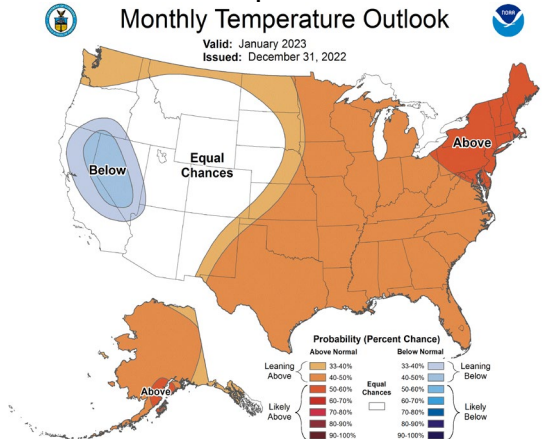
Valid: January 2023
Issued: December 31, 2022



Temperature

Monthly Temperature Outlook

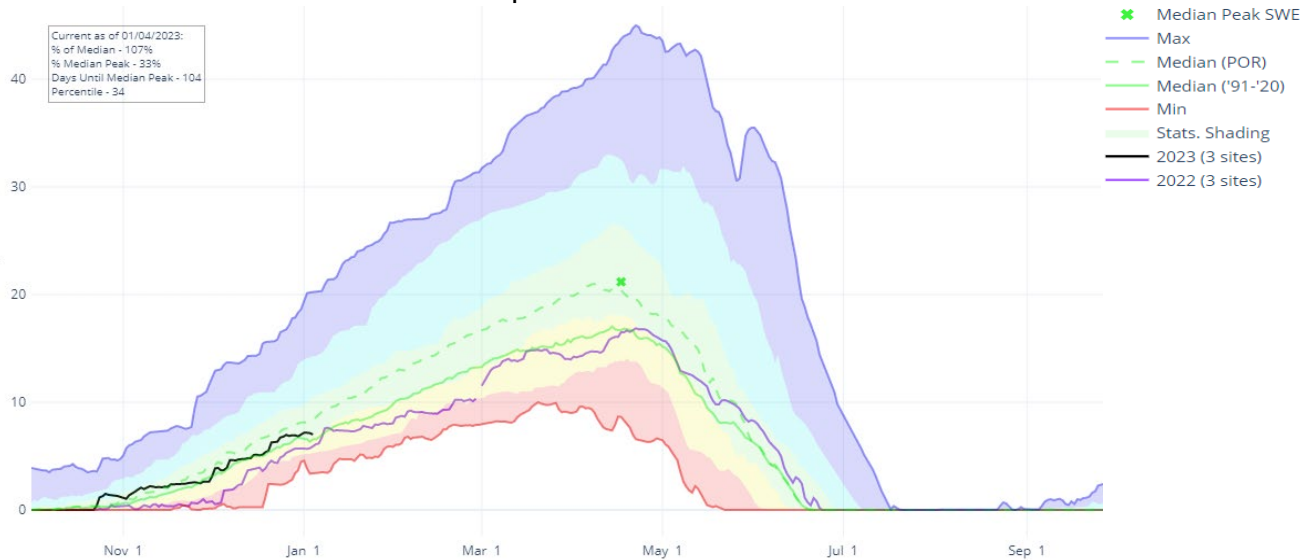
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SNOWPACK SUMMARY

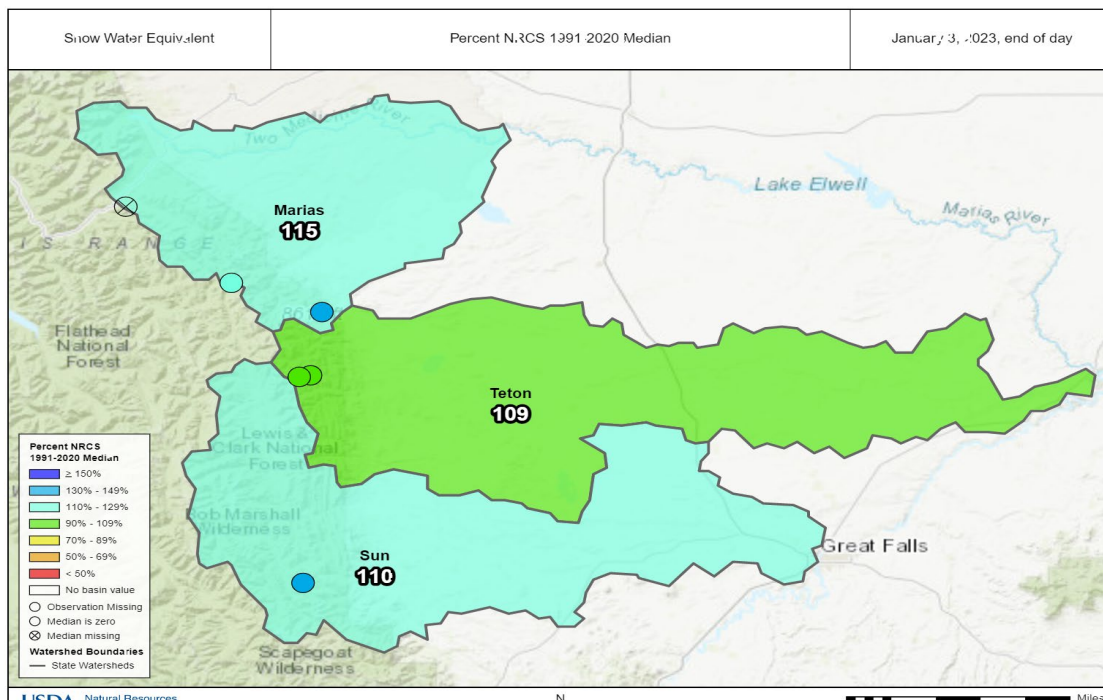
The snow water equivalent (SWE) graphs are a composite of two SNOTEL sites within the Marias River Basin managed by the Natural Resources Conservation Service (NRCS).

Snow Water Equivalent in the Marias River Basin



NRCS Montana Snow Survey Website: <https://www.nrcs.usda.gov/wps/portal/nrcs/mt/snow/>

Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th Percentiles
 Normal ('81-'10) – Official median calculated from 1981-2010 data
 Normal (POR) – Unofficial mean calculated from Period of Record data

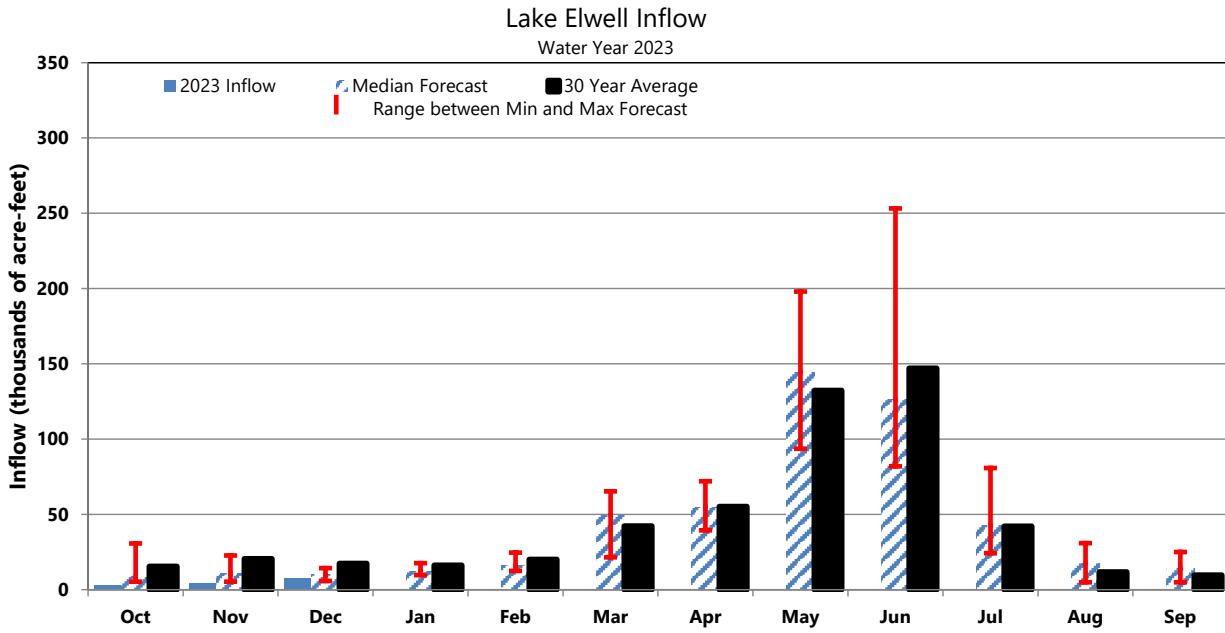


FORECAST SUMMARY

Current and historic inflow, NRCS SNOTEL, and other data are used to compute an inflow forecast into Lake Elwell.

December Forecast Review

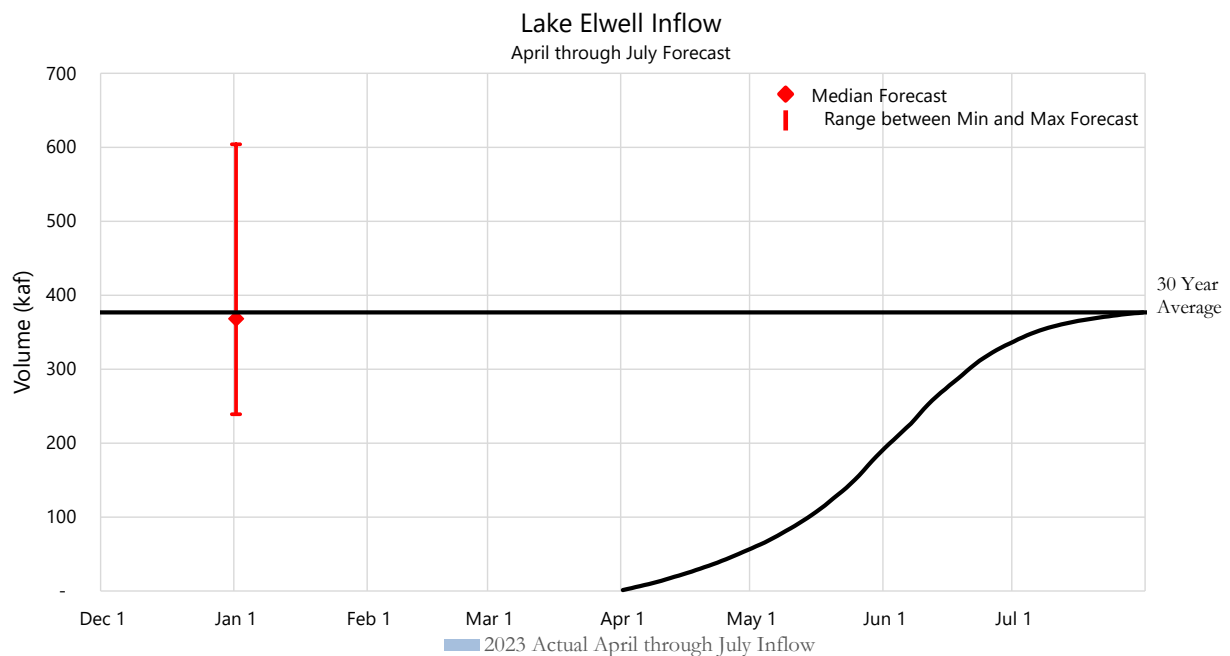
	Median Forecast (kaf)	Actual (kaf)	Difference (kaf)	Actual (% of Avg)
December Inflow	9.9	7.7	(2.2)	44



April through July Inflow Forecast for January 1

	Median Forecast (kaf)	% of Average	Minimum Forecast (kaf)	Maximum Forecast (kaf)
April through July Inflow	368	98	239	604

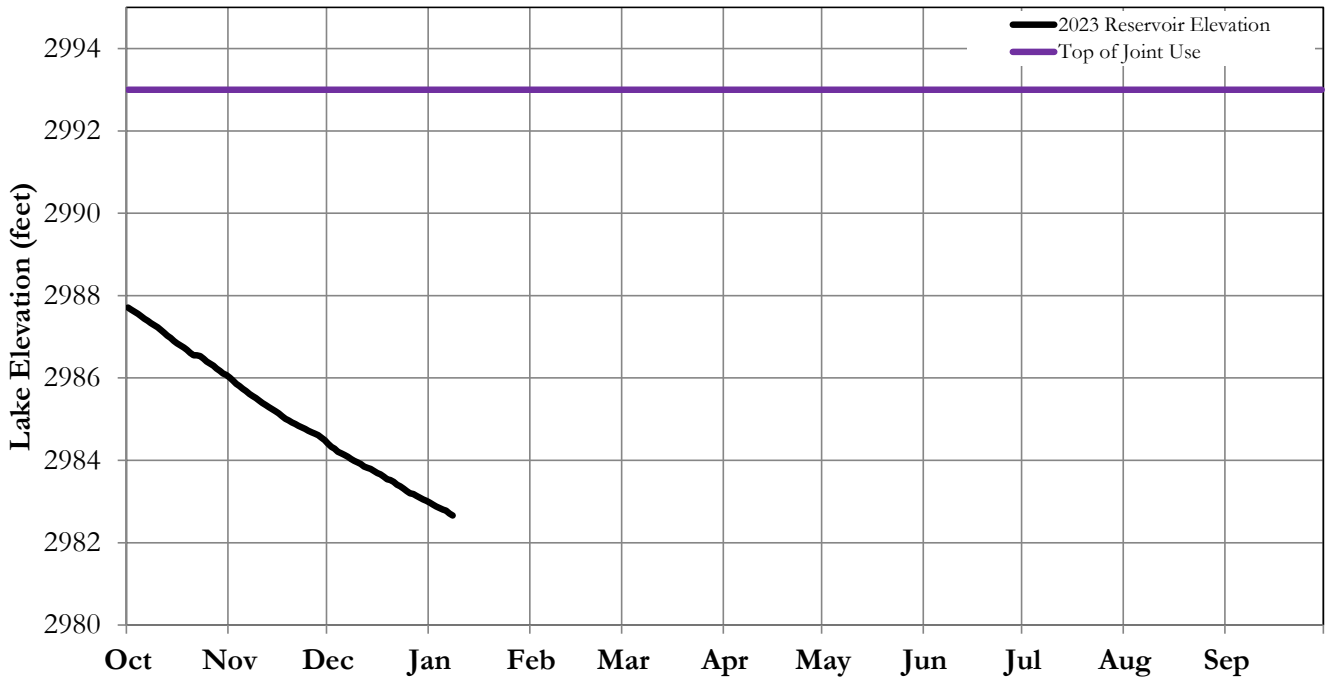
Historic Maximum (1975)	1,030 kaf	Historic Minimum (1977)	96 kaf	30 Yr Average	377 kaf
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OPERATIONS REVIEW (October 1, 2022 through December 31, 2022)

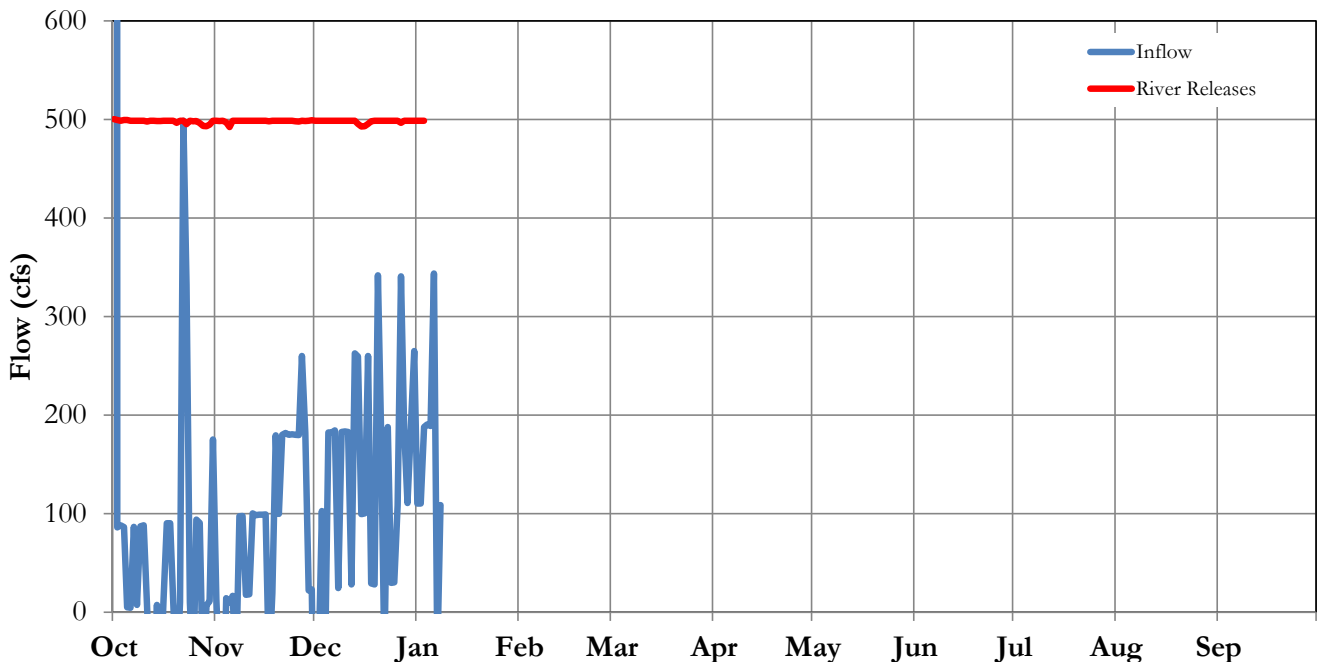
January 1 Storage Conditions				
	Elevation feet	Storage acre-feet	Percent of Average	Percent Full
Lake Elwell	2983.0	753,056	100	81

Lake Elwell Operations for Water Year 2023



Average December Inflow			Average December Release		
	Monthly Avg cfs	Percent of Average		Monthly Avg cfs	Percent of Average
Inflow into Lake Elwell	125	44	Release to Marias River	500	95

Lake Elwell Inflow and Release



OPERATIONS OUTLOOK (January 1, 2023 through December 31, 2023)

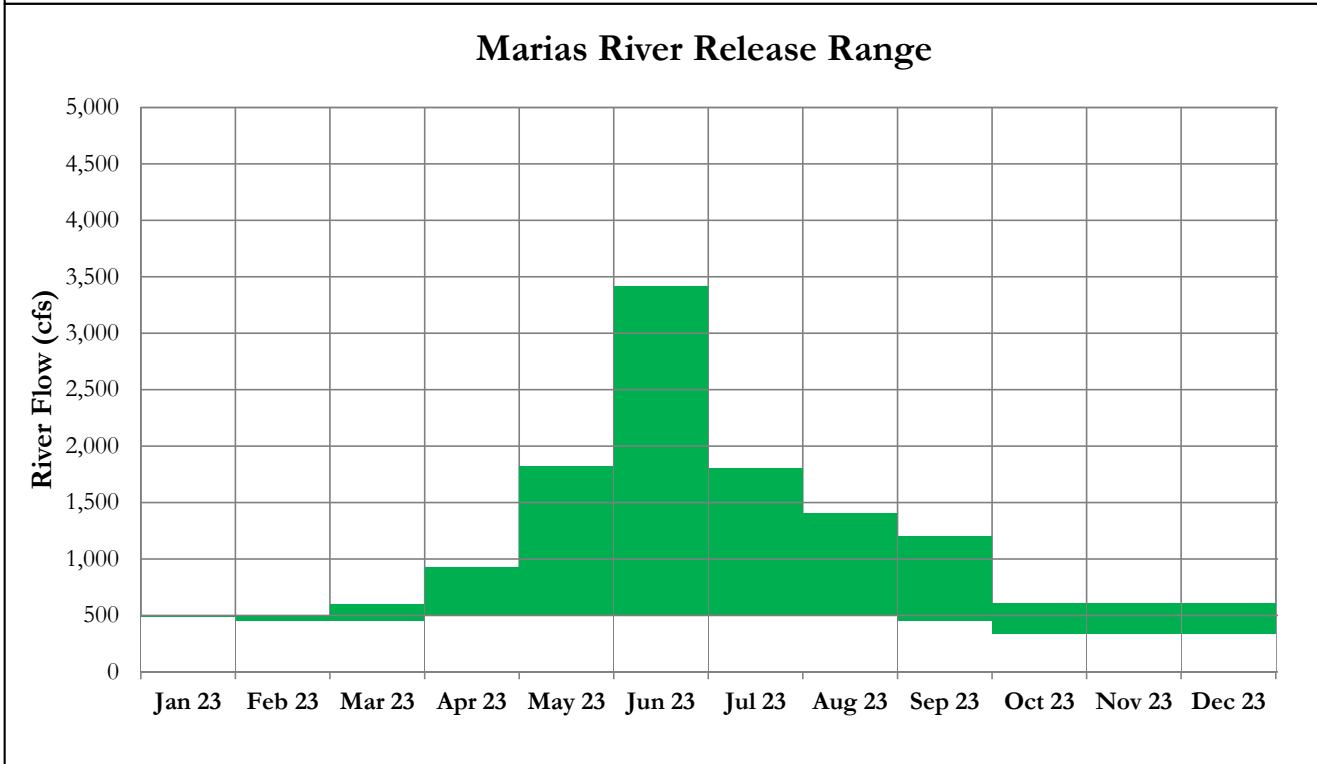
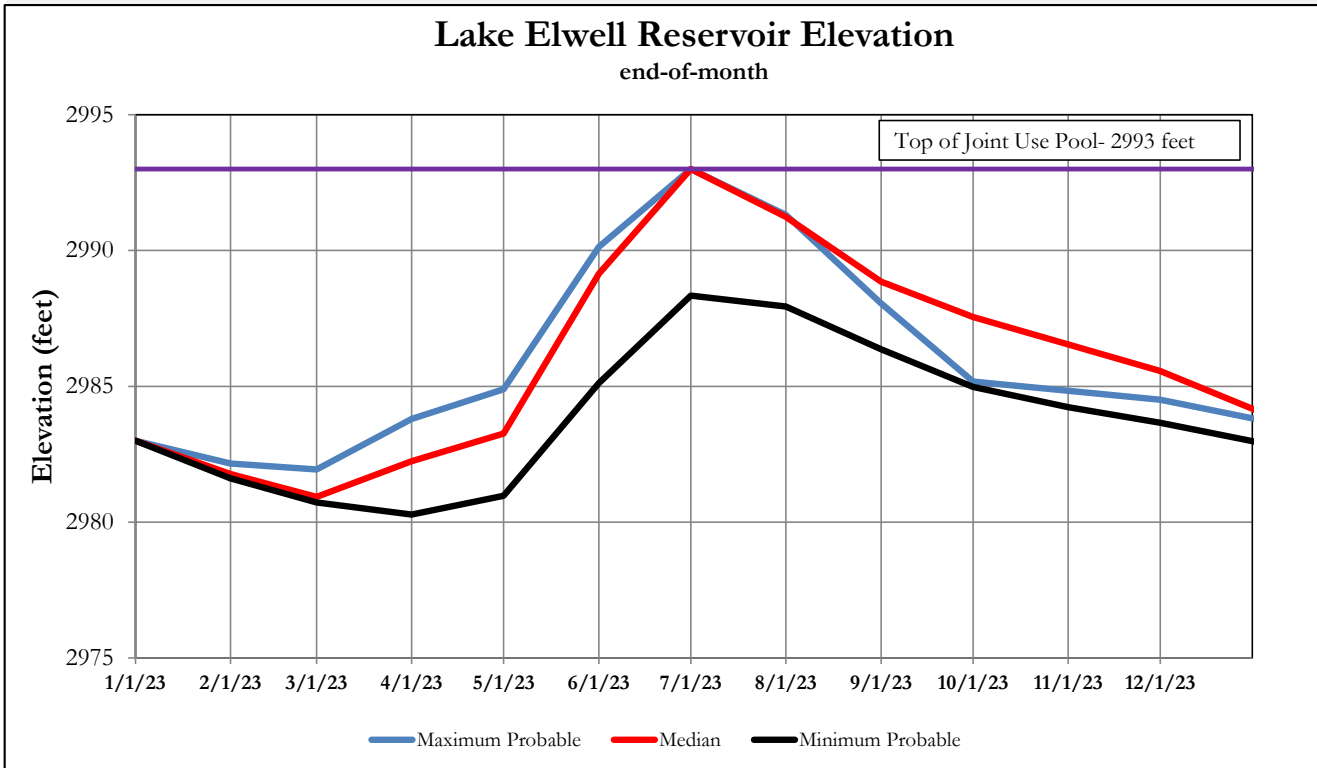
LAKE ELWELL (TIBER RESERVOIR) MONTHLY OPERATIONS

Initial Content 753,056 acre-feet Elevation 2983.02 feet

Median Inflow Conditions (April - July 368 kaf)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Inflow (kaf)	12.0	15.9	49.5	54.7	144.5	126.1	42.7	17.5	14.3	20.6	20.0	14.3	532.1
Monthly Release (kaf)	30.7	27.8	30.7	39.1	49.9	59.2	73.8	58.4	35.7	36.9	35.7	36.9	514.8
Monthly Inflow (cfs)	195	286	805	919	2,350	2,119	694	285	240	335	336	233	
Dam Release (cfs)	499	501	499	657	812	995	1,200	950	600	600	600	600	
End-of-Month Content (kaf)	734.4	722.5	741.3	756.9	851.5	918.4	887.3	846.4	825.0	808.7	793.0	770.4	
End-of-Month Elevation (feet)	2981.8	2980.9	2982.2	2983.3	2989.2	2993.0	2991.2	2988.9	2987.6	2986.5	2985.6	2984.1	
Net Change in Content	-18.7	-11.9	18.8	15.6	94.6	66.9	-31.1	-40.9	-21.4	-16.3	-15.7	-22.6	17.3
Minimum Inflow Conditions (April - July 239 kaf)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Inflow (kaf)	9.7	12.5	21.5	39.4	93.6	81.9	24.2	4.9	4.9	8.4	10.7	9.3	321.0
Monthly Release (kaf)	30.7	25.0	27.7	29.8	30.7	29.8	30.7	30.7	26.8	20.2	19.6	20.2	321.9
Monthly Inflow (cfs)	158	225	350	662	1,522	1,376	394	80	82	137	180	151	
Dam Release (cfs)	499	450	450	501	499	501	499	499	450	329	329	329	
End-of-Month Content (kaf)	732.1	719.6	713.4	723.0	785.9	838.0	831.5	805.7	783.8	772.0	763.1	752.2	
End-of-Month Elevation (feet)	2981.6	2980.7	2980.3	2981.0	2985.1	2988.3	2987.9	2986.4	2985.0	2984.2	2983.7	2983.0	
Net Change in Content	-21.0	-12.5	-6.2	9.6	62.9	52.1	-6.5	-25.8	-21.9	-11.8	-8.9	-10.9	-0.9
Maximum Inflow Conditions (April - July 604 kaf)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Inflow (kaf)	17.6	24.6	65.3	72.0	198.0	253.2	80.8	30.9	25.0	31.9	30.7	26.1	856.1
Monthly Release (kaf)	30.7	27.8	36.9	54.9	112.1	203.0	110.7	86.1	71.4	37.2	36.0	37.2	844.0
Monthly Inflow (cfs)	286	443	1,062	1,210	3,220	4,255	1,314	503	420	519	516	424	
Dam Release (cfs)	499	501	600	923	1,823	3,412	1,800	1,400	1,200	605	605	605	
End-of-Month Content (kaf)	740.0	736.8	765.2	782.3	868.2	918.4	888.5	833.3	786.9	781.6	776.3	765.2	
End-of-Month Elevation (feet)	2982.2	2981.9	2983.8	2984.9	2990.1	2993.0	2991.3	2988.1	2985.2	2984.8	2984.5	2983.8	
Net Change in Content	-13.1	-3.2	28.4	17.1	85.9	50.2	-29.9	-55.2	-46.4	-5.3	-5.3	-11.1	12.1

OPERATIONS OUTLOOK (January 1, 2023 through December 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.



Contact Us

Anellise Deters
adeters@usbr.gov
 406-247-7318

Clayton Jordan
cjordan@usbr.gov
 406-247-7334

Stephanie Micek
smicek@usbr.gov
 406-247-7320

Chris Gomer
cgomer@usbr.gov
 406-247-7307

Monthly Operating Plans, Current Conditions, Snowpack and Other Water Management Information

https://www.usbr.gov/en/lakes/reservoirs/wareports/main_menu.html