

Milk River Project Water Supply and Projected Operations



— BUREAU OF —
RECLAMATION

November 2022



Median Forecasted Operations	Sherburne	Fresno	Nelson
November Inflow Forecast (kaf)	5	2	0
% of Average	68	82	-
November Release Forecast (cfs)	0	45	0
November 30 Elevation Forecast (feet)	4750.6	2561.5	2212.1

Operations Review

November 1 Elevation and Storage

	Elevation (feet)	Storage (acre-feet)	Percent of Average	Percent Full
Sherburne Reservoir	4744.55	12,068	62	18
Fresno Reservoir	2561.63	42,162	99	46
Nelson Reservoir	2212.68	45,653	81	58

Past Inflows (1,000's of acre-feet)

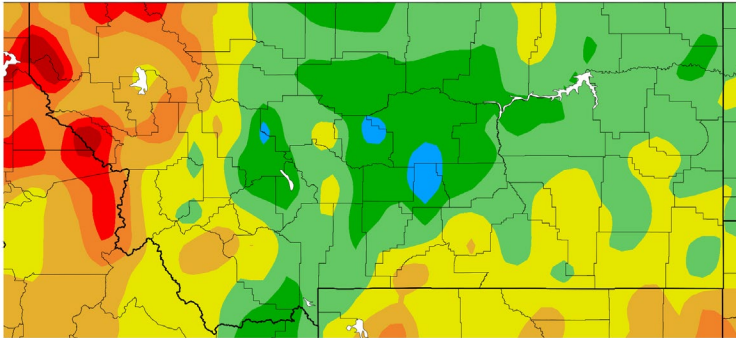
Month	Sherburne Reservoir		Fresno Reservoir	
	Inflow	% of Average	Inflow	% of Average
Water Year 2023				
October	2.4	36	8.0	127
Water Year 2022				
October	7.2	108	1.1	17
November	17.8	243	1.2	39
December	12.6	358	0.6	35
January	2.7	98	-0.2	-
February	1.6	70	0.6	14
March	3.9	102	11.6	47
April	4.8	48	37.6	119
May	27.6	89	35.6	85
June	57.3	150	43.8	89
July	25.7	141	34.1	116
August	8.5	100	32.5	112
September	4.2	76	30.4	146

Climate Departure from Normal

October 1 through October 31, 2022

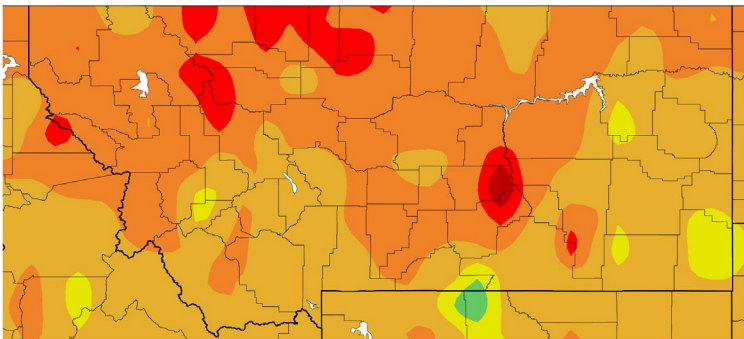
Precipitation

Departure from Normal (inches)



Temperature

Departure from Normal (°F)



HPRCC using provisional data NOAA Regional Climate Centers

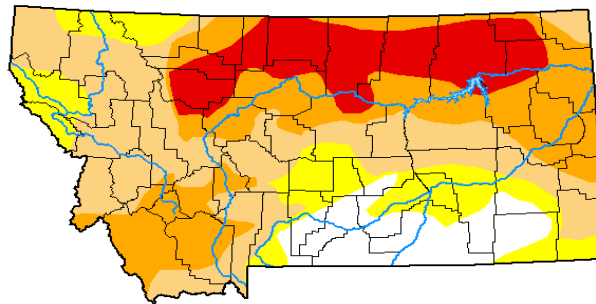
CLIMATE SUMMARY

The climate in the St. Mary and Milk River basins was warmer than average during October. It was drier than average in the St. Mary River basin and near average in the Milk River basin. Moderate to extreme drought conditions persist throughout the Milk River basin. Abnormally dry conditions remain in the St. Mary River basin.

There is a 50-60 percent chance that precipitation will be above average in the St. Mary and Milk River basins during November. There is a 40 to 50 percent chance temperatures in the St. Mary and Milk River basins will be below average.

Montana Drought Monitor Map

October 25, 2022



Intensity:

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

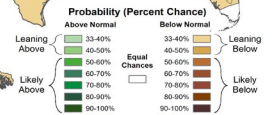
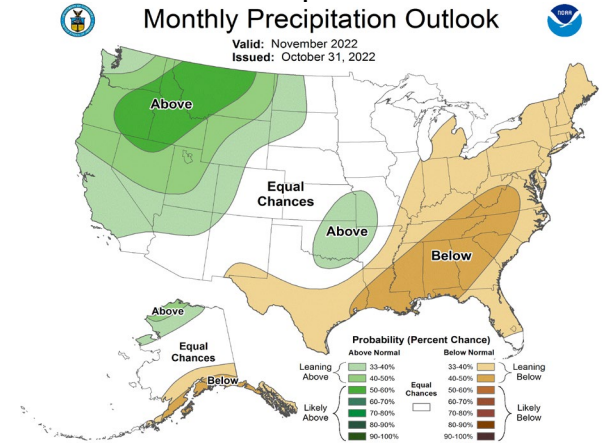


November Climate Outlook

Precipitation

Monthly Precipitation Outlook

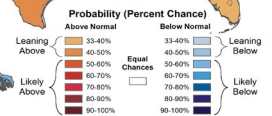
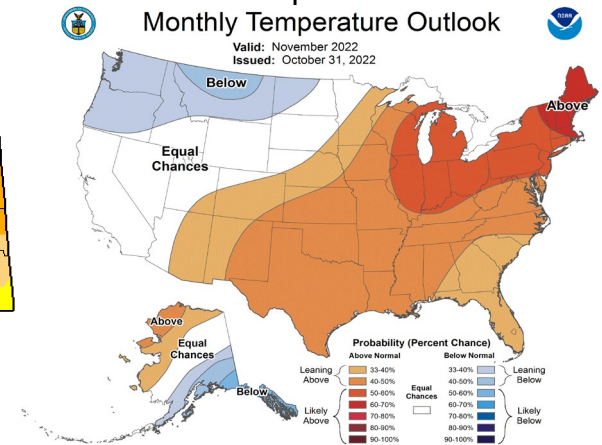
Valid: November 2022
Issued: October 31, 2022



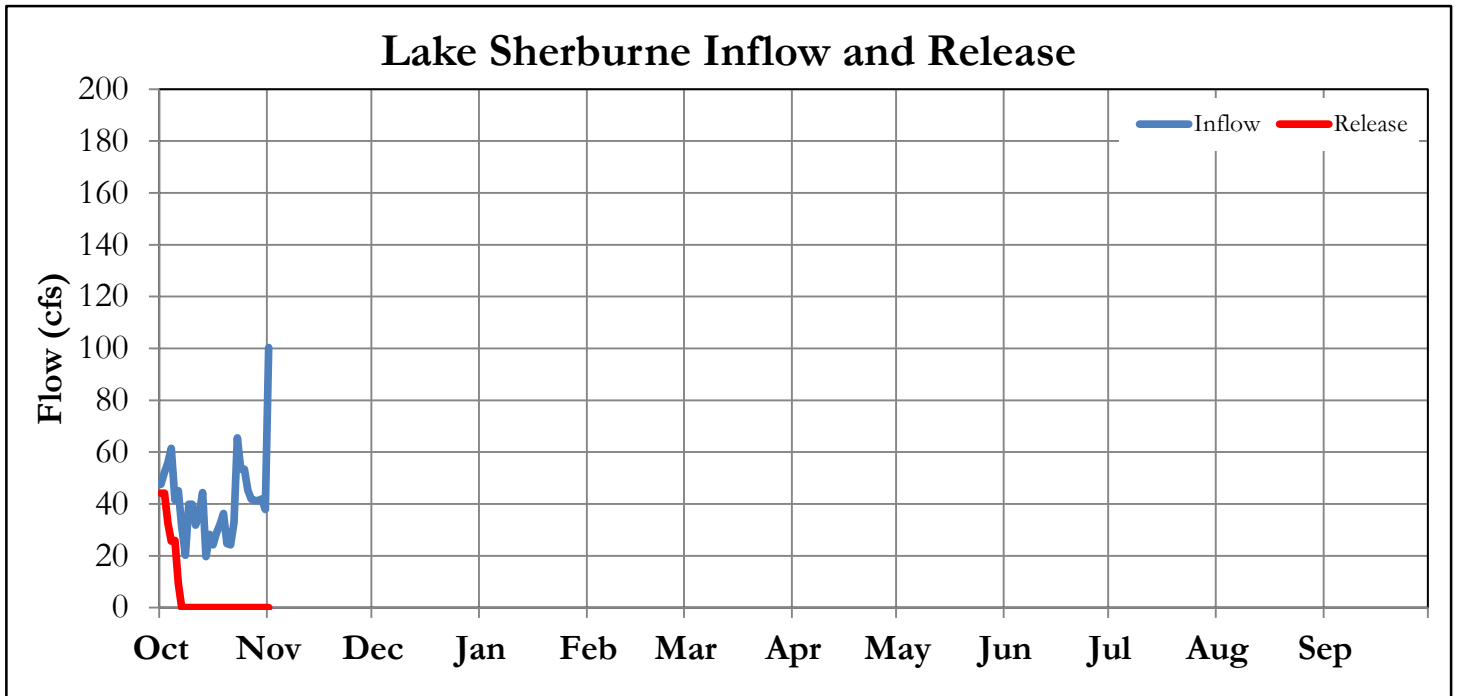
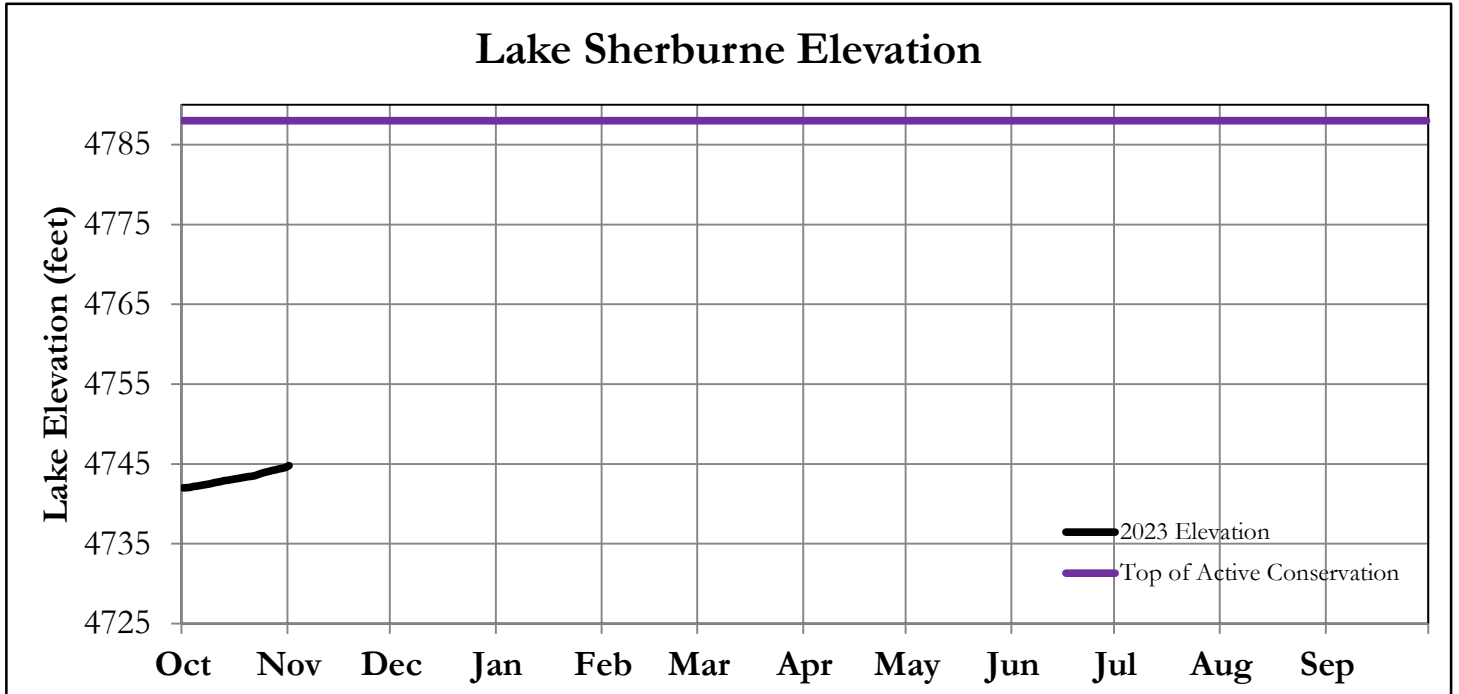
Temperature

Monthly Temperature Outlook

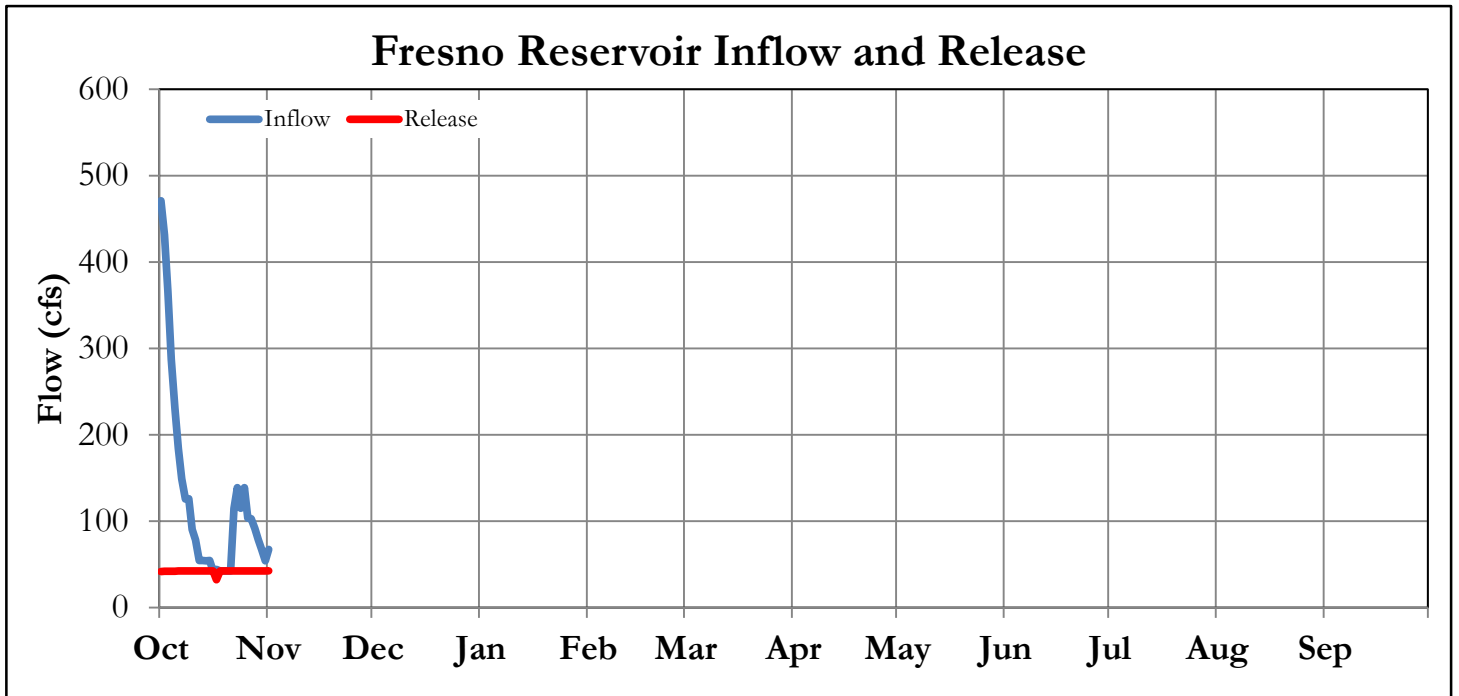
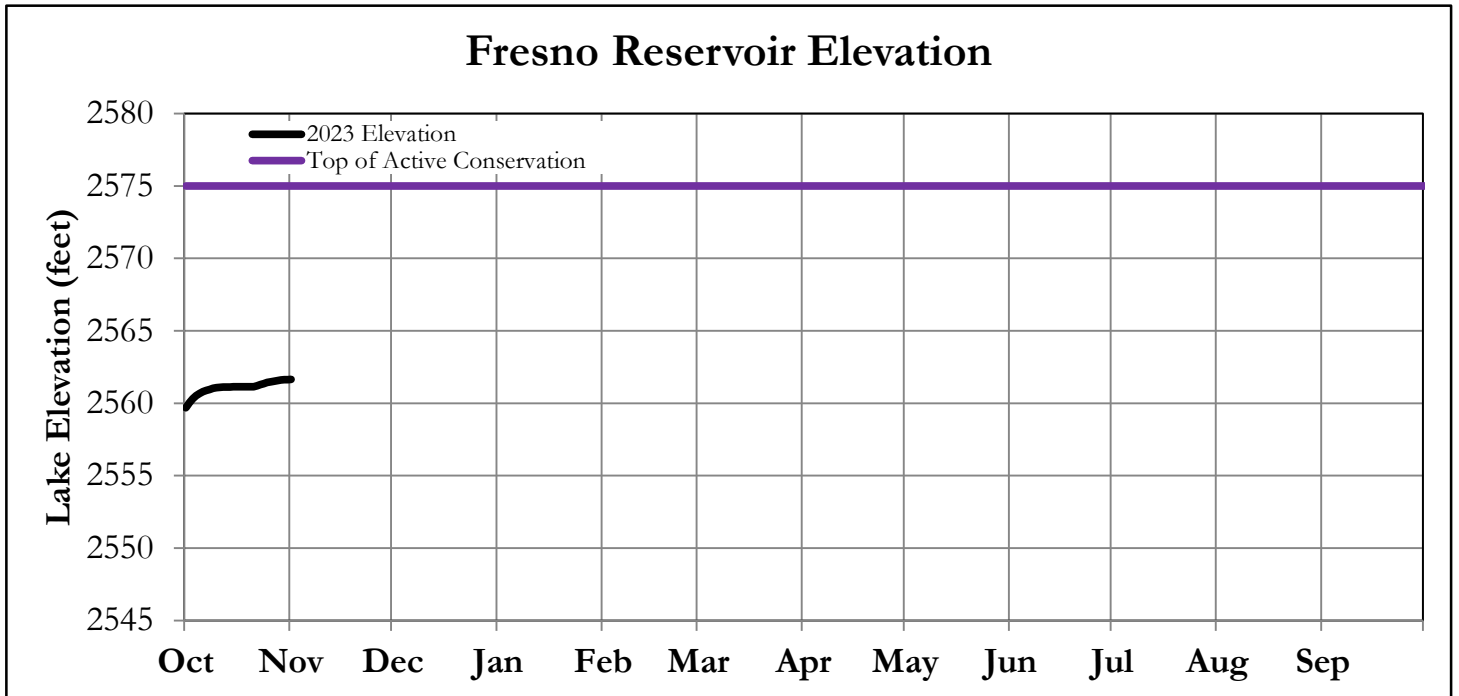
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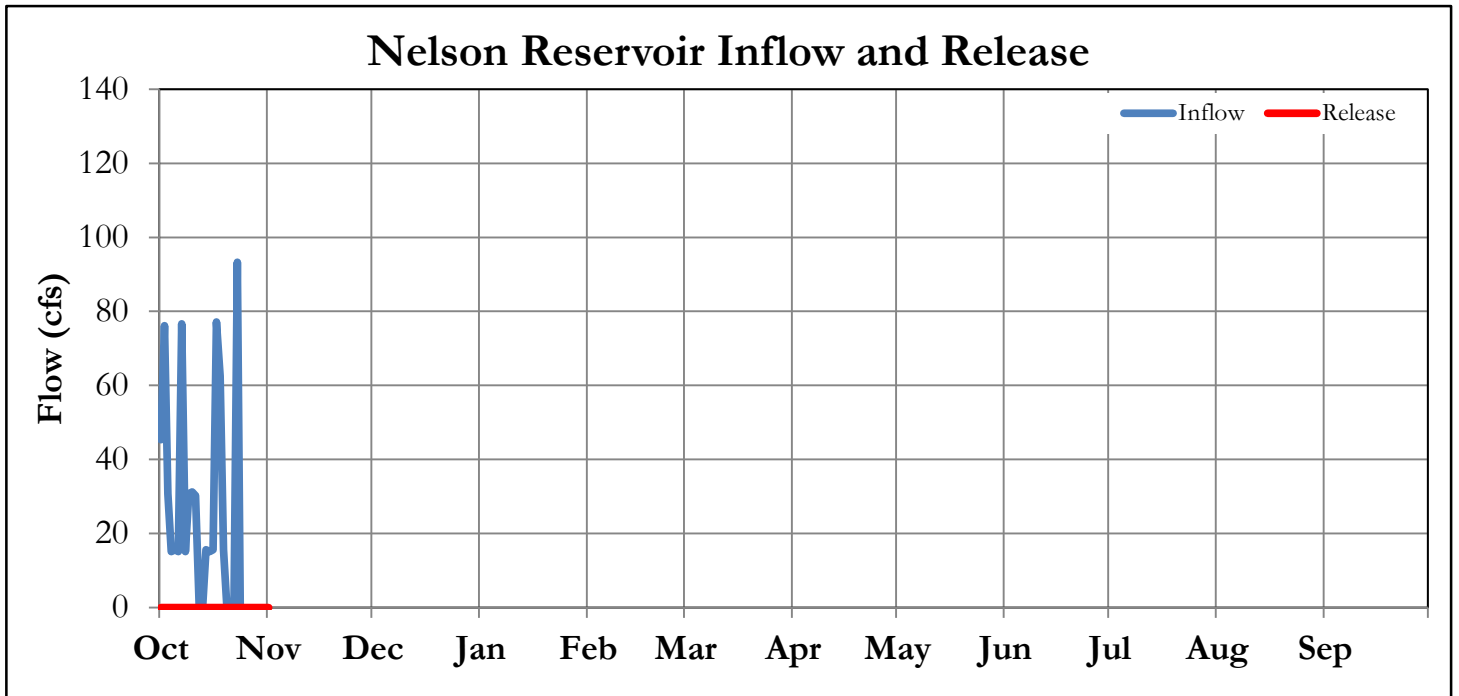
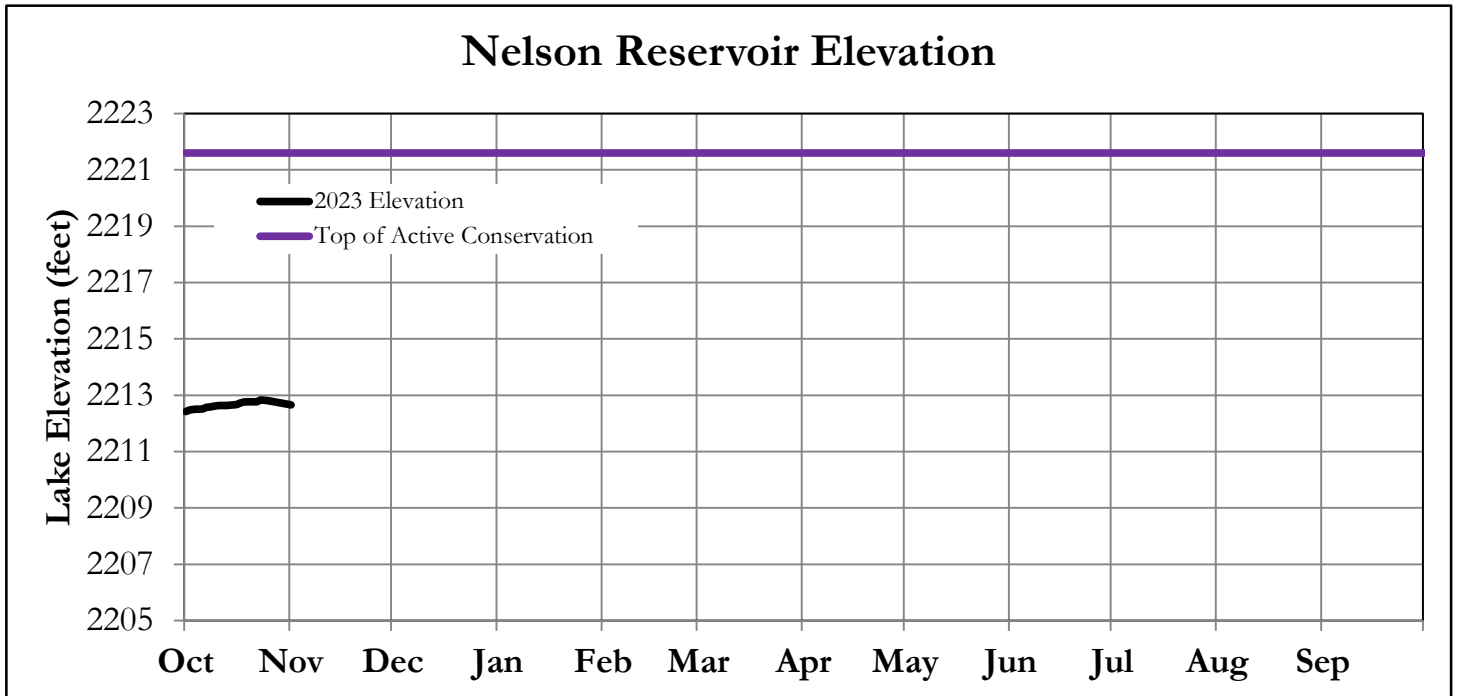
OPERATIONS REVIEW: Lake Sherburne



OPERATIONS REVIEW: Fresno Reservoir



OPERATIONS REVIEW: Nelson Reservoir



OPERATIONS OUTLOOK (November 1, 2022 through October 31, 2023)

Median Inflow Conditions													
Sherburne Reservoir	Initial Content		12,068		acre-feet								
	Elevation		4744.55		feet								
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Sherburne Inflow (kaf)	5.3	3.7	2.9	2.8	3.2	9.5	32.9	39.3	17.5	8.6	7.2	6.8	139.7
Sherburne Release (kaf)	0.0	0.0	0.0	0.0	0.3	30.8	15.9	1.5	15.6	35.3	33.3	9.8	142.5
Sherburne Release (cfs)	0	0	0	0	5	518	259	25	254	574	560	159	
Net Content Change (kaf)	5.3	3.7	2.9	2.8	2.9	-21.3	17.0	37.8	1.9	-26.7	-26.1	-3.0	-2.8
End of Month Content (kaf)	17.4	21.1	24.0	26.8	29.7	8.4	25.4	63.2	65.1	38.4	12.3	9.3	
End of Month Elevation (feet)	4750.6	4754.4	4757.2	4759.8	4762.5	4739.9	4758.6	4786.3	4787.4	4769.7	4744.8	4741.1	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
St. Mary River Runoff (kaf)	12.9	8.8	7.2	6.1	8.7	24.5	95.5	135.0	80.6	32.3	19.0	18.7	449.3
Natural Flow at Boundary (kaf)	18.2	12.5	10.1	8.9	11.9	34.0	128.4	174.3	98.1	40.9	26.2	25.5	589.0
St. Mary Canal Diversion (cfs)	0	0	0	0	50	501	600	600	600	600	550	200	
St. Mary Canal Diversion (kaf)	0.0	0.0	0.0	0.0	3.1	29.8	36.9	35.7	36.9	36.9	32.7	12.3	224.3
Fresno Reservoir	Initial Content		42,162		acre-feet								
	Elevation		2561.63		feet								
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Milk River Runoff (kaf)	2.4	2.2	1.8	4.7	14.5	15.1	7.3	5.0	0.8	0.0	2.8	4.2	60.8
From St. Mary Canal (kaf)	0.0	0.0	0.0	0.0	0.0	26.8	33.2	28.6	29.5	29.5	27.8	11.1	186.5
Fresno Inflow (kaf)	2.4	2.2	1.8	4.7	14.5	41.9	40.5	33.6	30.3	29.5	30.6	15.3	247.3
Fresno Release (kaf)	2.7	2.8	2.8	2.5	2.8	4.4	40.5	46.3	61.2	64.6	6.0	2.8	239.4
Fresno Release (cfs)	45	46	46	45	46	74	659	778	995	1051	101	46	
Net Content Change (kaf)	-0.3	-0.6	-1.0	2.2	11.7	37.5	0.0	-12.7	-30.9	-35.1	24.6	12.5	7.9
End of Month Content (kaf)	41.9	41.3	40.3	42.5	54.2	91.7	91.7	79.0	48.1	13.0	37.6	50.1	
End of Month Elevation (feet)	2561.5	2561.3	2560.9	2561.8	2565.9	2575.0	2575.0	2572.4	2564.0	2545.8	2559.7	2564.6	
Irrigation Allotment (ft/ac)	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.50	0.65	0.60	0.00	0.00	2.00
Irrigation Delivery (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	23.2	46.3	60.2	55.6	0.0	0.0	185.3
FBIIP Demand (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.0	6.0	0.0	13.0
Fresno to Dodson Gain (kaf)	0.0	0.0	0.0	0.0	17.4	18.2	12.6	16.4	6.8	2.0	5.4	2.0	80.8
Bowdoin Demand (kaf)	0.0	0.0	0.0	0.0	0.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	3.5
Transfer to Nelson (kaf)	0.0	0.0	0.0	0.0	10.0	20.0	10.0	10.0	5.0	5.0	5.0	1.0	66.0
Nelson Reservoir	Initial Content		45,653		acre-feet								
	Elevation		2212.68		feet								
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Delivery to Nelson (kaf)	0.0	0.0	0.0	0.0	9.0	18.0	9.0	9.0	4.5	4.5	4.5	0.9	59.4
Net Content Change (kaf)	-1.8	-1.8	-1.8	-1.7	7.2	16.2	2.6	-2.0	-13.5	-13.9	2.7	-0.9	-8.7
End of Month Content (kaf)	43.9	42.1	40.3	38.6	45.8	62.0	64.6	62.6	49.1	35.2	37.9	37.0	
End of Month Elevation (feet)	2212.1	2211.5	2210.8	2210.1	2212.7	2217.4	2218.1	2217.6	2213.8	2208.7	2209.8	2209.5	
Total Release (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	4.6	9.2	16.2	16.6	0.0	0.0	46.6

OPERATIONS OUTLOOK (November 1, 2022 through October 31, 2023)

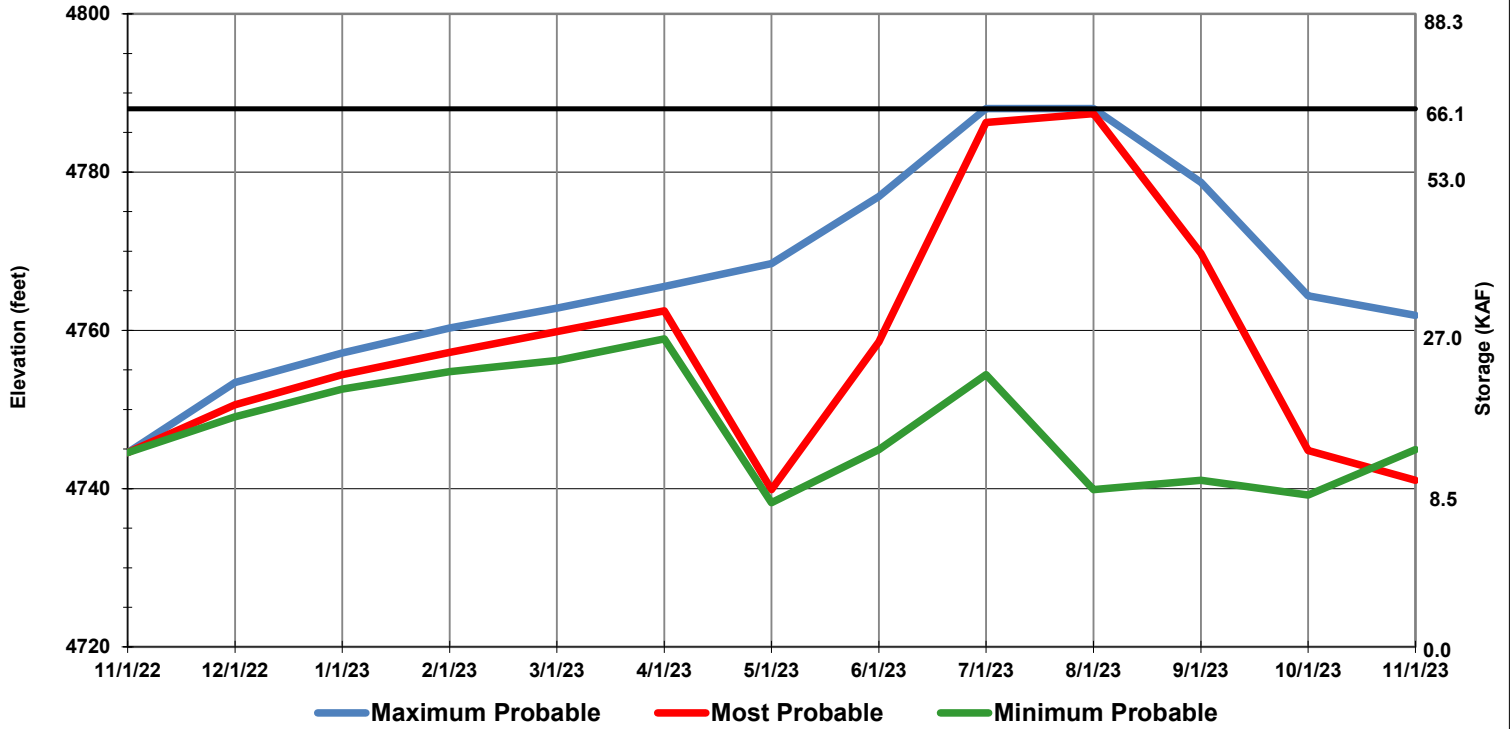
Minimum Inflow Conditions													
Sherburne Reservoir													
	Initial Content												
	Elevation		12,068 acre-feet										
	4744.55 feet												
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Sherburne Inflow (kaf)	3.9	3.3	2.2	1.4	2.9	8.5	25.1	27.2	14.4	6.4	3.9	4.5	103.7
Sherburne Release (kaf)	0.0	0.0	0.0	0.0	0.0	27.1	19.9	18.5	27.1	5.5	5.3	0.0	103.4
Sherburne Release (cfs)	0	0	0	0	0	455	324	311	441	89	89	0	
Net Content Change (kaf)	3.9	3.3	2.2	1.4	2.9	-18.6	5.2	8.7	-12.7	0.9	-1.4	4.5	0.3
End of Month Content (kaf)	16.0	19.3	21.5	22.9	25.8	7.2	12.4	21.1	8.4	9.3	7.9	12.4	
End of Month Elevation (feet)	4749.1	4752.6	4754.8	4756.2	4758.9	4738.2	4745.0	4754.4	4739.9	4741.1	4739.2	4745.0	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
St. Mary River Runoff (kaf)	4.8	4.8	4.0	4.6	4.1	7.4	68.2	81.5	42.1	21.7	14.5	8.4	266.1
Natural Flow at Boundary (kaf)	8.7	8.1	6.2	6.0	7.0	15.9	93.3	108.7	56.5	28.1	18.4	12.9	369.8
St. Mary Canal Diversion (cfs)	0	0	0	0	0	400	600	600	499	99	101	0	
St. Mary Canal Diversion (kaf)	0.0	0.0	0.0	0.0	0.0	23.8	36.9	35.7	30.7	6.1	6.0	0.0	139.2
Fresno Reservoir													
	Initial Content												
	Elevation		42,162 acre-feet										
	2561.63 feet												
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Milk River Runoff (kaf)	0.5	0.2	0.3	0.7	4.7	3.5	1.3	1.2	0.0	0.0	0.6	2.0	15.0
From St. Mary Canal (kaf)	0.0	0.0	0.0	0.0	0.0	17.9	33.2	28.6	20.0	4.0	4.8	0.0	108.5
Fresno Inflow (kaf)	0.5	0.2	0.3	0.7	4.7	21.4	34.5	29.8	20.0	4.0	5.4	2.0	123.5
Fresno Release (kaf)	2.7	2.8	2.8	2.5	2.8	10.9	26.9	46.3	33.4	6.1	6.0	2.8	146.0
Fresno Release (cfs)	45	46	46	45	46	183	437	778	543	99	101	46	
Net Content Change (kaf)	-2.2	-2.6	-2.5	-1.8	1.9	10.5	7.6	-16.5	-13.4	-2.1	-0.6	-0.8	-22.5
End of Month Content (kaf)	40.0	37.4	34.9	33.1	35.0	45.5	53.1	36.6	23.2	21.1	20.5	19.7	
End of Month Elevation (feet)	2560.7	2559.6	2558.5	2557.6	2558.5	2563.0	2565.6	2559.2	2552.4	2551.2	2550.8	2550.4	
Irrigation Allotment (ft/ac)	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.50	0.35	0.00	0.00	0.00	1.10
Irrigation Delivery (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	23.2	46.3	32.4	0.0	0.0	0.0	101.9
FBIIP Demand (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.0	6.0	0.0	13.0
Fresno to Dodson Gain (kaf)	0.0	0.0	0.0	0.0	8.7	9.1	6.3	8.2	3.4	1.0	2.7	2.0	41.4
Bowdoin Demand (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transfer to Nelson (kaf)	0.0	0.0	0.0	0.0	10.0	20.0	10.0	5.0	0.0	0.0	0.0	0.6	45.6
Nelson Reservoir													
	Initial Content												
	Elevation		45,653 acre-feet										
	2212.68 feet												
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Delivery to Nelson (kaf)	0.0	0.0	0.0	0.0	9.0	18.0	9.0	4.5	0.0	0.0	0.0	0.5	41.0
Net Content Change (kaf)	-1.8	-1.8	-1.8	-1.7	7.2	16.2	0.3	-8.0	-8.2	-1.8	-1.8	-1.3	-4.5
End of Month Content (kaf)	43.9	42.1	40.3	38.6	45.8	62.0	62.3	54.3	46.1	44.3	42.5	41.2	
End of Month Elevation (feet)	2212.1	2211.5	2210.8	2210.1	2212.7	2217.4	2217.5	2215.3	2212.8	2212.2	2211.6	2211.1	
Total Release (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	6.9	10.7	6.4	0.0	0.0	0.0	24.0

OPERATIONS OUTLOOK (November 1, 2022 through October 31, 2023)

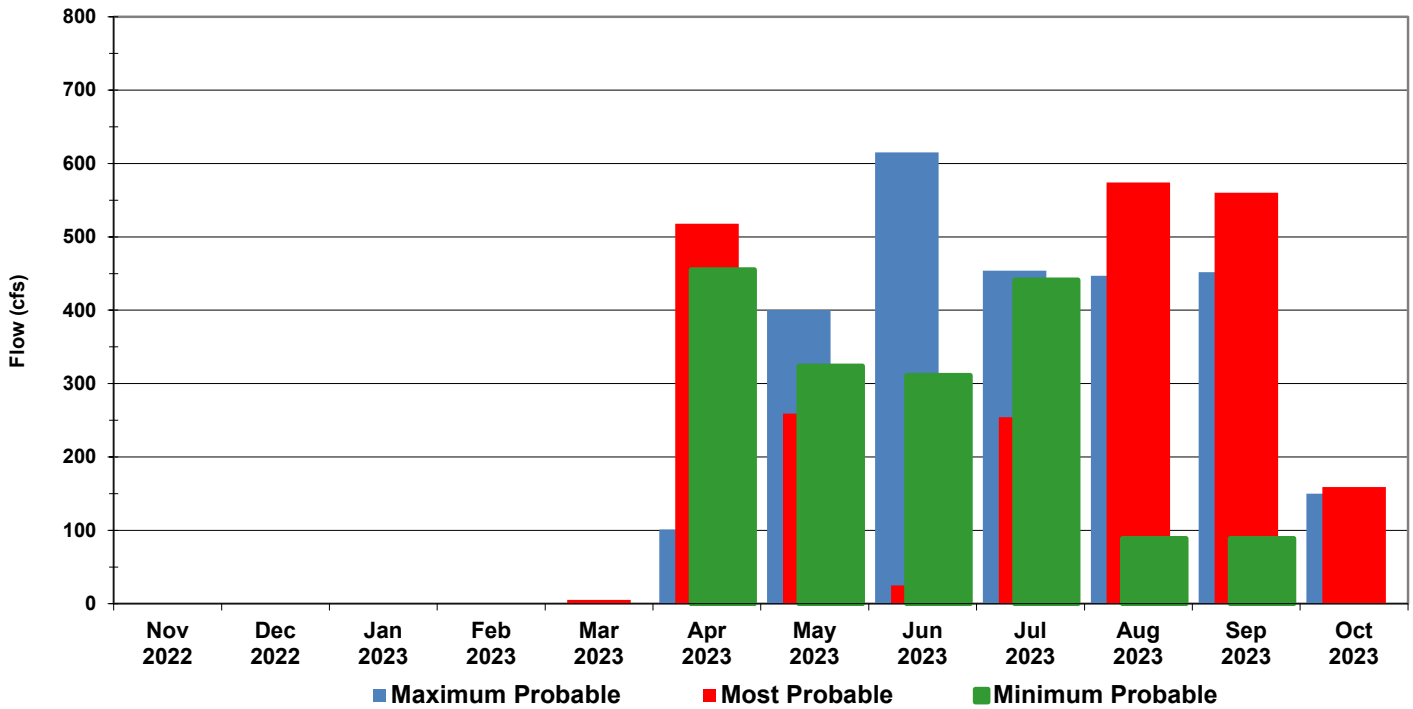
Maximum Inflow Conditions													
Sherburne Reservoir	Initial Content Elevation		12,068 acre-feet										
			4744.55	feet									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Sherburne Inflow (kaf)	8.0	3.8	3.4	2.8	3.2	9.5	36.1	54.5	27.9	12.3	7.8	6.4	175.7
Sherburne Release (kaf)	0.0	0.0	0.0	0.0	0.0	6.0	24.6	36.6	27.9	27.5	26.9	9.2	158.7
Sherburne Release (cfs)	0	0	0	0	0	101	400	615	454	447	452	150	
Net Content Change (kaf)	8.0	3.8	3.4	2.8	3.2	3.5	11.5	17.9	0.0	-15.2	-19.1	-2.8	17.0
End of Month Content (kaf)	20.1	23.9	27.3	30.1	33.3	36.8	48.3	66.2	66.2	51.0	31.9	29.1	
End of Month Elevation (feet)	4753.4	4757.1	4760.3	4762.8	4765.6	4768.5	4776.9	4788.0	4788.0	4778.7	4764.4	4761.9	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
St. Mary River Runoff (kaf)	34.6	21.2	15.8	14.4	21.7	46.1	147.5	215.6	130.5	51.7	39.3	46.3	784.7
Natural Flow at Boundary (kaf)	42.6	25.0	19.2	17.2	24.9	55.6	183.6	270.1	158.4	64.0	47.1	52.7	960.4
St. Mary Canal Diversion (cfs)	0	0	0	0	0	0	0	301	600	600	550	99	
St. Mary Canal Diversion (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.9	36.9	36.9	32.7	6.1	130.5
	Initial Content Elevation		42,162 acre-feet										
Fresno Reservoir			2561.63	feet									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Milk River Runoff (kaf)	4.4	3.4	2.1	5.1	48.4	38.5	27.4	39.2	7.0	3.7	10.3	10.0	199.5
From St. Mary Canal (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.2	31.4	33.2	29.4	5.5	114.7
Fresno Inflow (kaf)	4.4	3.4	2.1	5.1	48.4	38.5	27.4	54.4	38.4	36.9	39.7	15.5	314.2
Fresno Release (kaf)	2.7	2.8	2.8	2.5	3.1	38.5	27.4	54.4	61.2	72.9	29.5	2.8	300.6
Fresno Release (cfs)	45	46	46	45	50	647	446	914	995	1186	496	46	
Net Content Change (kaf)	1.7	0.6	-0.7	2.6	45.3	0.0	0.0	0.0	-22.8	-36.0	10.2	12.7	13.6
End of Month Content (kaf)	43.9	44.5	43.8	46.4	91.7	91.7	91.7	91.7	68.9	32.9	43.1	55.8	
End of Month Elevation (feet)	2562.3	2562.6	2562.3	2563.3	2575.0	2575.0	2575.0	2575.0	2570.0	2557.5	2562.0	2566.4	
Irrigation Allotment (ft/ac)	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.50	0.65	0.70	0.20	0.00	2.30
Irrigation Delivery (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	23.2	46.3	60.2	64.9	18.5	0.0	213.1
FBIIP Demand (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.0	6.0	0.0	13.0
Fresno to Dodson Gain (kaf)	0.0	0.0	0.0	0.0	22.6	23.7	16.4	21.3	12.0	3.0	7.0	4.0	110.0
Bowdoin Demand (kaf)	0.0	0.0	0.0	0.0	0.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	3.5
Transfer to Nelson (kaf)	0.0	0.0	0.0	0.0	10.0	20.0	15.0	10.0	5.0	5.0	12.0	5.0	82.0
	Initial Content Elevation		45,653 acre-feet										
Nelson Reservoir			2212.68	feet									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Delivery to Nelson (kaf)	0.0	0.0	0.0	0.0	9.0	18.0	13.5	9.0	4.5	4.5	10.8	4.5	73.8
Net Content Change (kaf)	-1.8	-1.8	-1.8	-1.7	7.2	16.2	7.1	-2.0	-9.2	-16.7	3.4	2.7	1.6
End of Month Content (kaf)	43.9	42.1	40.3	38.6	45.8	62.0	69.1	67.1	57.9	41.2	44.6	47.3	
End of Month Elevation (feet)	2212.1	2211.5	2210.8	2210.1	2212.7	2217.4	2219.2	2218.7	2216.3	2211.1	2212.3	2213.2	
Total Release (kaf)	0.0	0.0	0.0	0.0	0.0	0.0	4.6	9.2	11.9	19.4	5.6	0.0	50.7

LAKE SHERBURNE

LAKE SHERBURNE ELEVATION

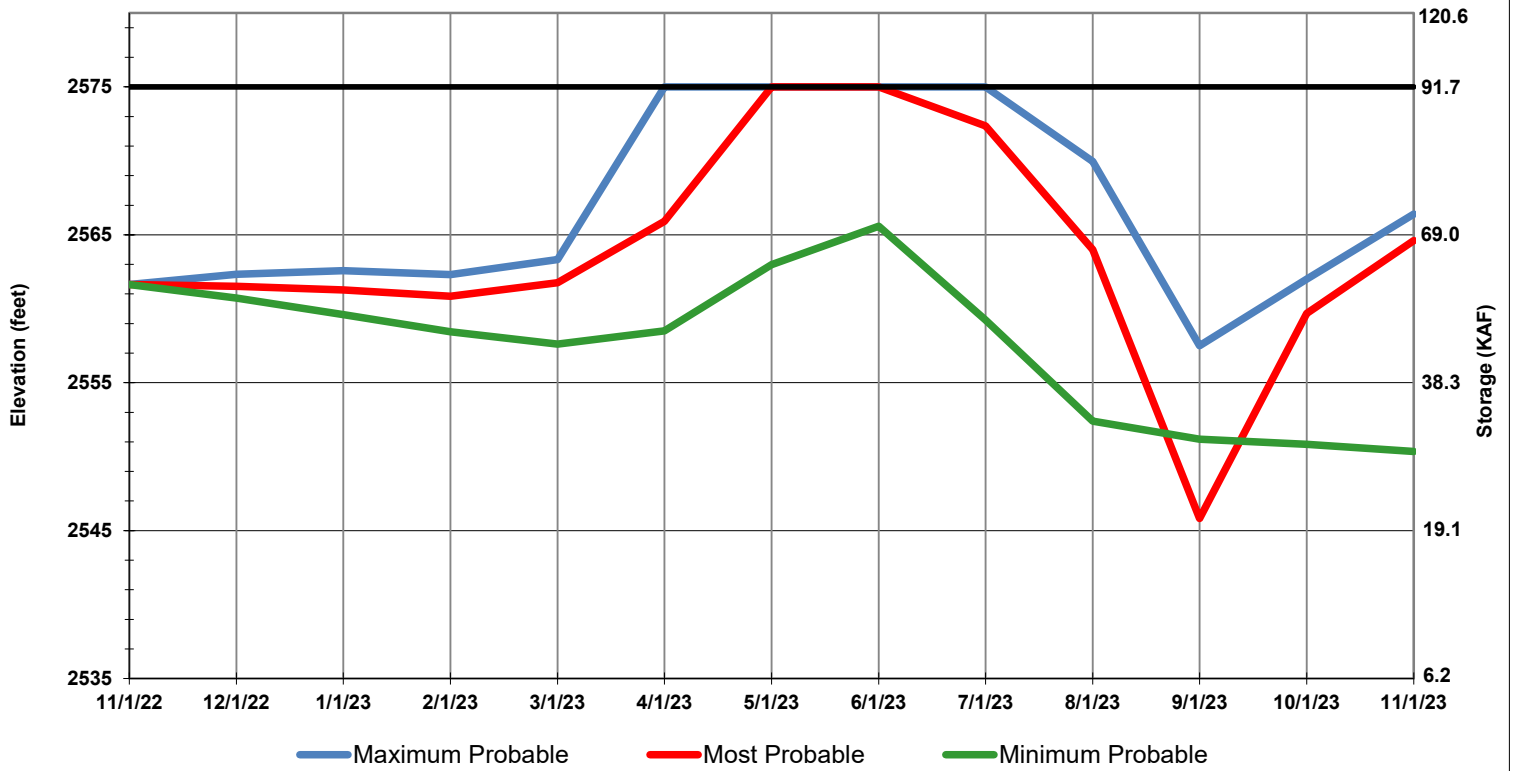


TOTAL DISCHARGE FROM LAKE SHERBURNE

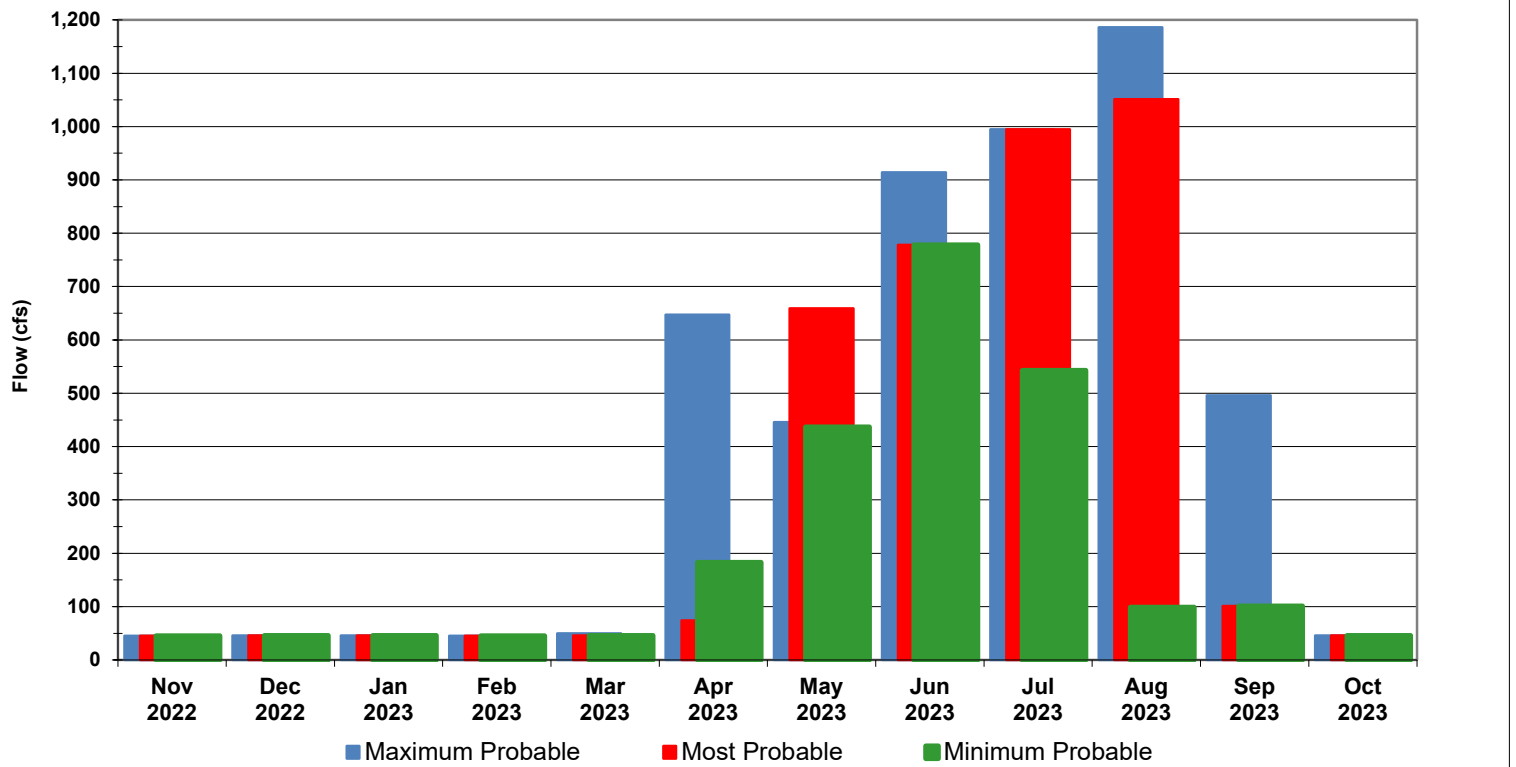


FRESNO RESERVOIR

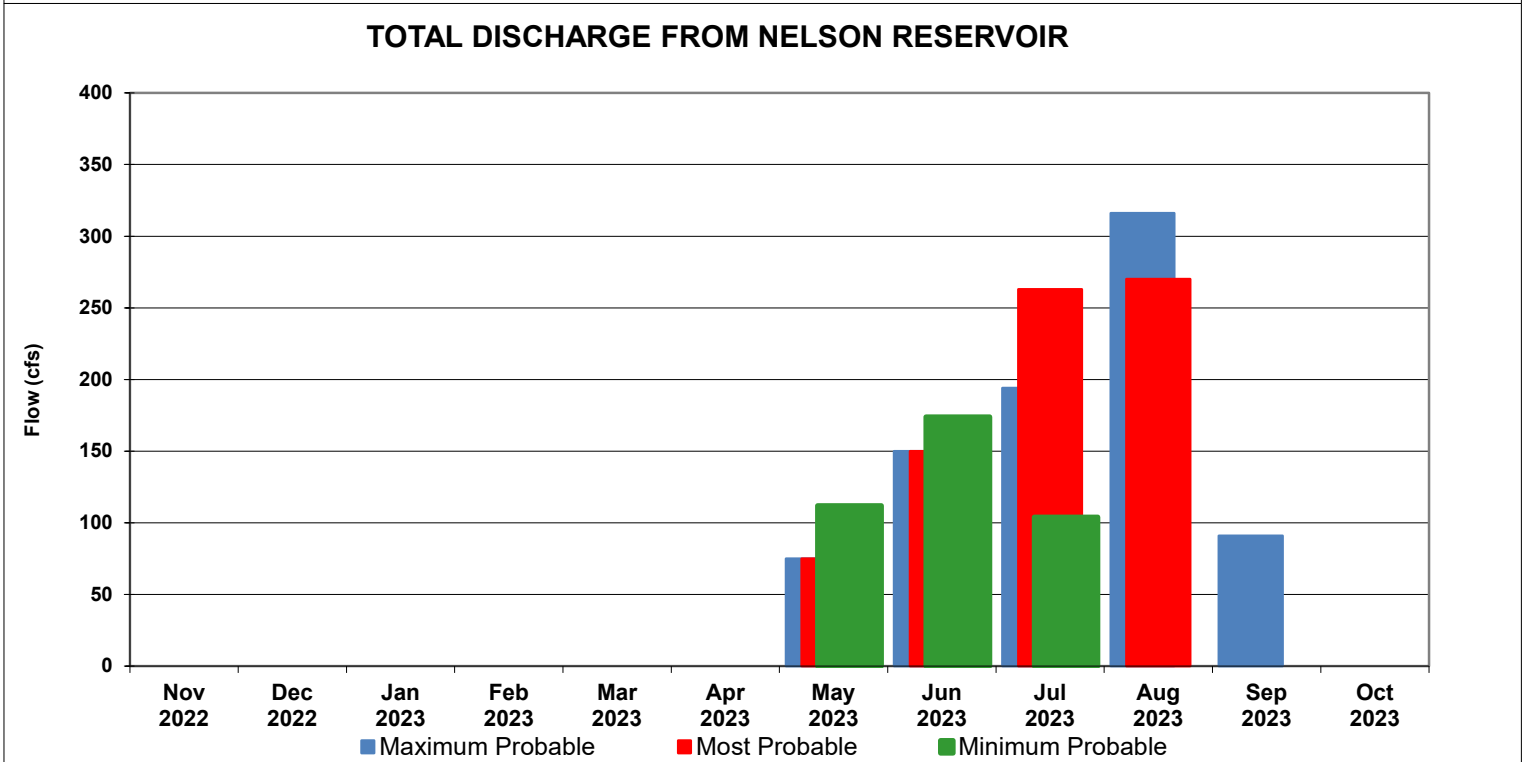
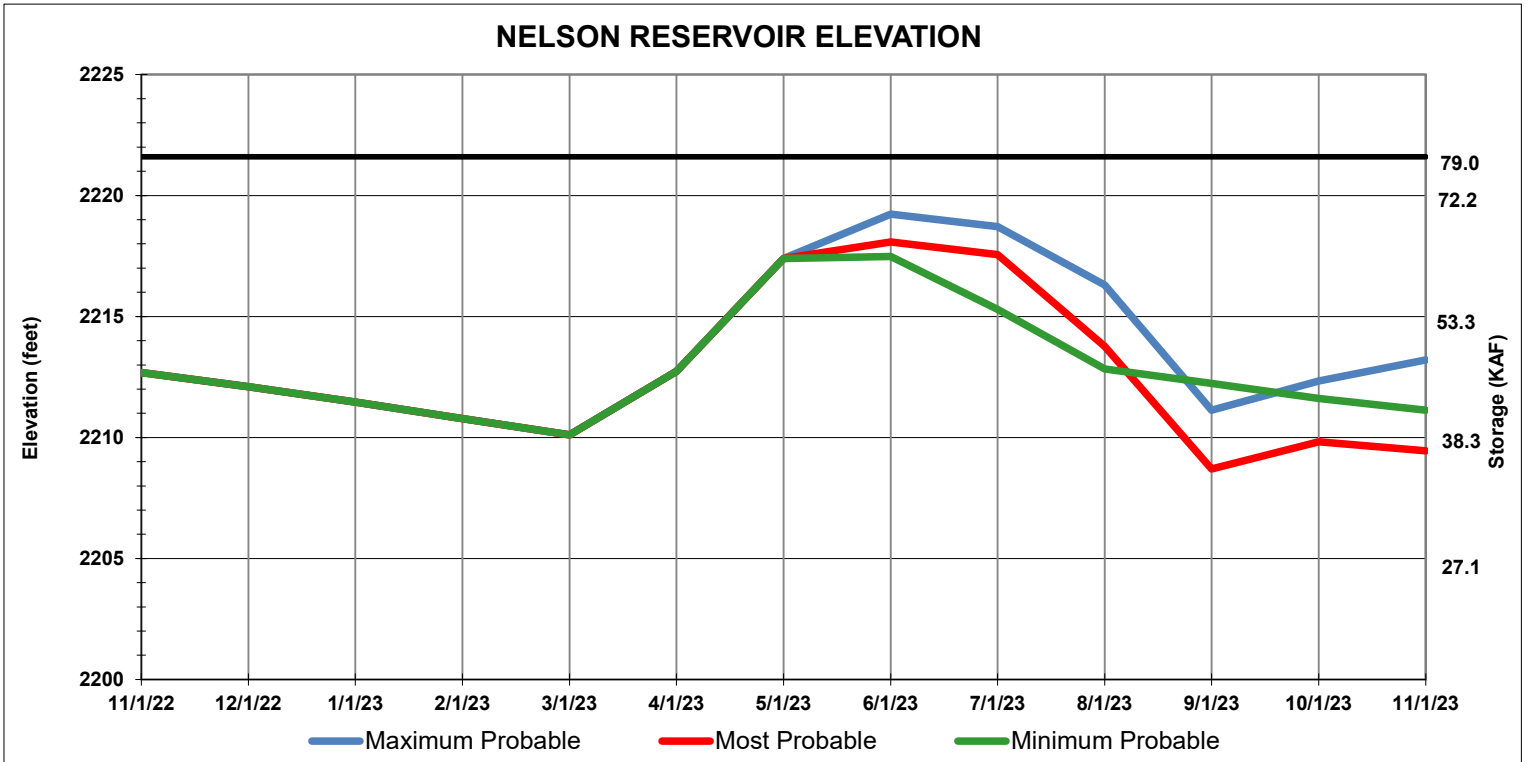
FRESNO RESERVOIR ELEVATION



TOTAL DISCHARGE FROM FRESNO RESERVOIR



NELSON RESERVOIR



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Monthly Operating Plans, Current Conditions, Snowpack and Other Water Management Information
https://www.usbr.gov/gp/lakes_reservoirs/warepts/main_menu.html