

Milk River Project Water Supply and Projected Operations



— BUREAU OF —
RECLAMATION

March 2024



Milk River Downstream of Fresno Dam

The March monthly operating plan covers actual operations from October 1, 2023, through February 29, 2024, and projected operations for March 1, 2024, through February 28, 2025. The projections are based on forecasted water supply and use.

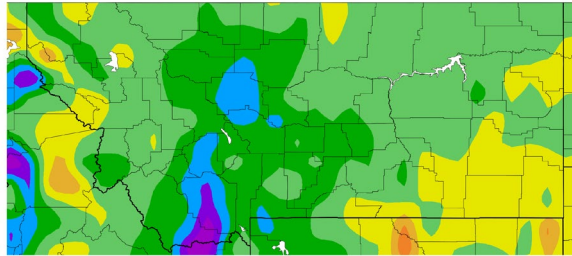
Median Forecasted Operations	Sherburne	Fresno	Nelson
March Inflow Forecast (kaf)	3	11	3
Percent of Average	83	47	70
March Release Forecast (cfs)	5	40	0
March 31 Elevation Forecast (feet)	4775.2	2556.1	2217.3

April-July Forecast	Sherburne
Inflow Forecast	82
Percent of Average	83

Climate Departure from Normal

February 1 through February 29

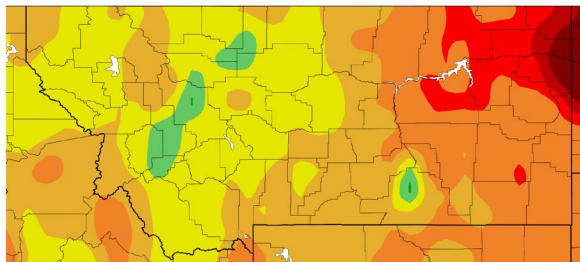
Precipitation



Departure from Normal (inches)

Temperature

Departure from Normal (°F)



HPRC using provisional data NOAA Regional Climate Centers

CLIMATE SUMMARY

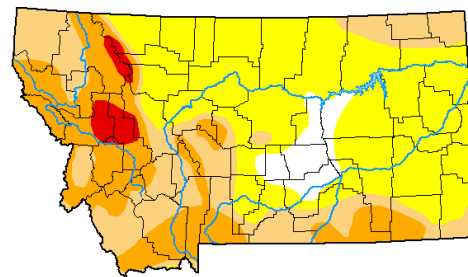
The climate in the St. Mary River and Milk River Basins was wetter than average during February. However, snowpack remains well below average. The temperature was warmer than average.

There is an equal chance precipitation and temperature will be either below, near, or above average in the St. Mary River Basin during March. There is an equal chance precipitation will be either below, near, or above average in the Milk River Basin while there is a greater chance temperature will be above average.

Drought conditions range from abnormally dry to severe.

Montana Drought Monitor Map

February 27, 2024



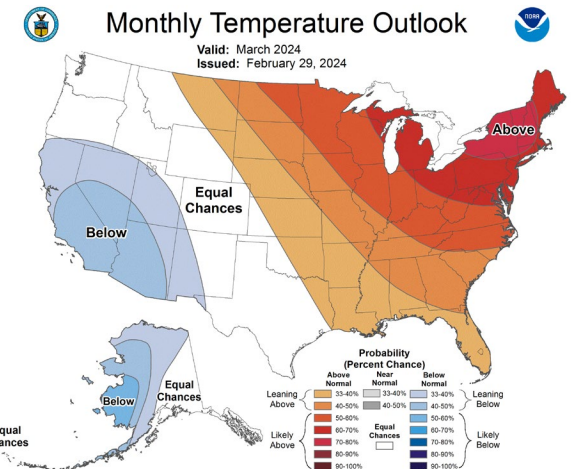
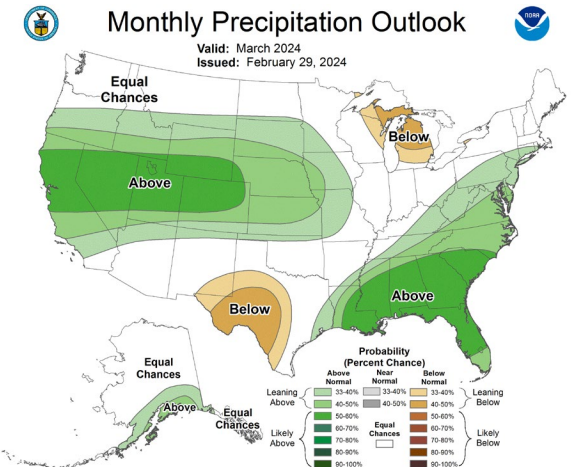
Intensity

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



droughtmonitor.unl.edu

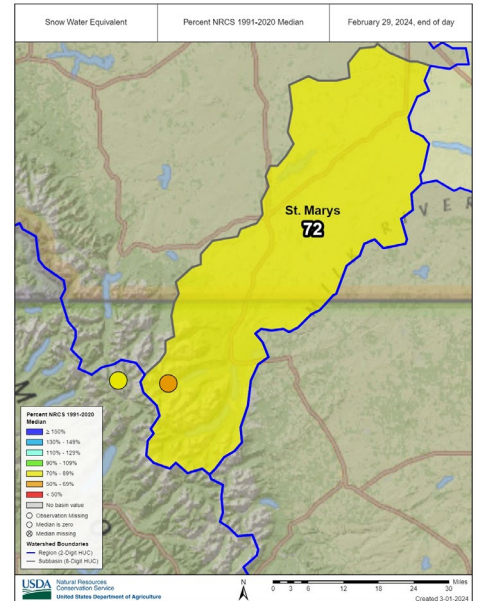
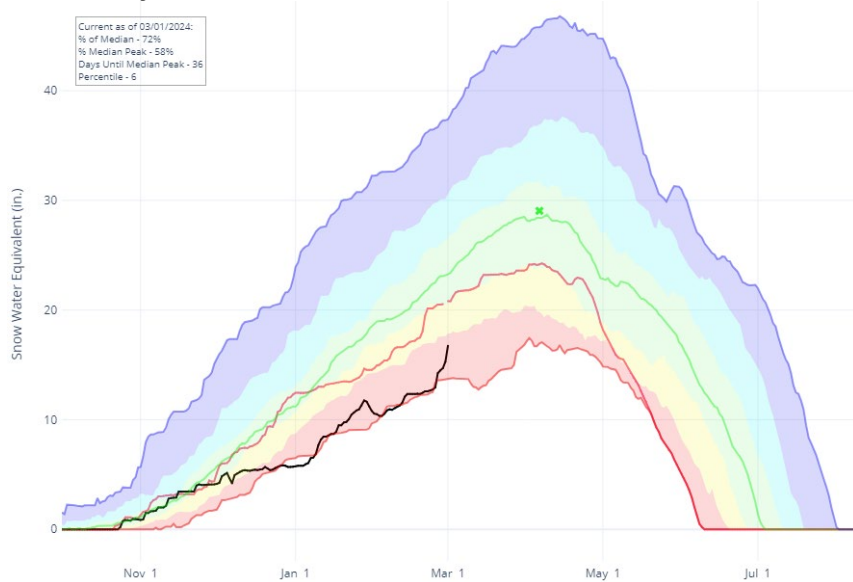
March Climate Outlook



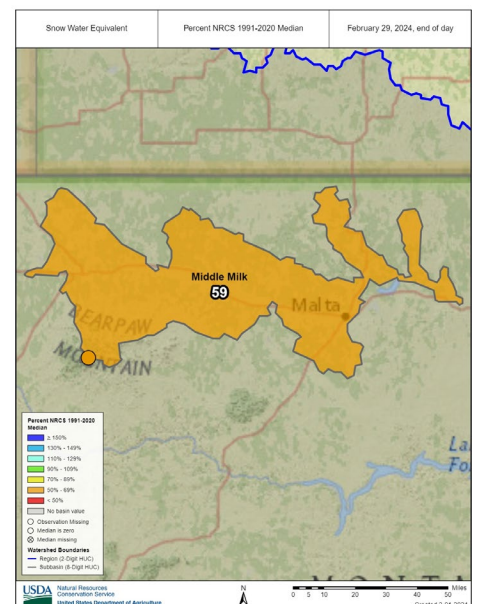
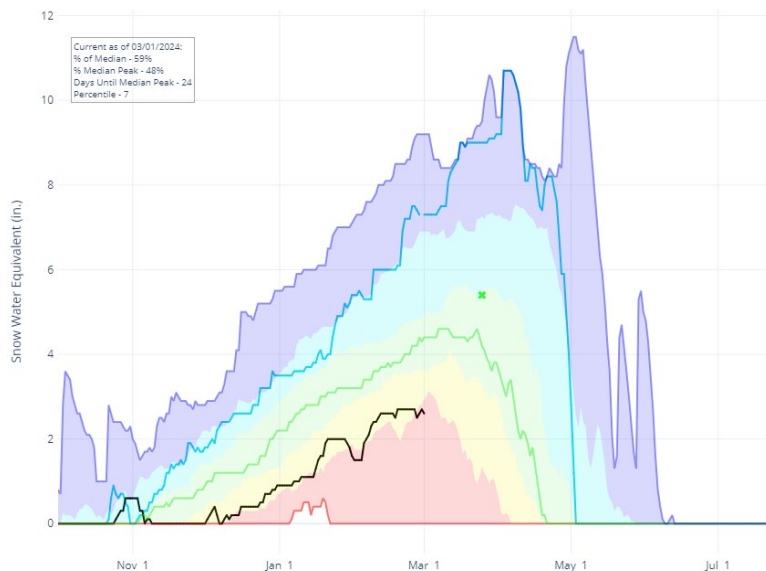
SNOWPACK SUMMARY

The snow water equivalent (SWE) graphs are a composite of SNOTEL sites within the St. Mary and Milk River Basins managed by the Natural Resources Conservation Service (NRCS).

St. Mary River Basin



Milk 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 ('91-'20) – Official median calculated from 1991-2020 data
 Normal (POR) – Unofficial mean calculated from Period of Record data

OPERATIONS REVIEW

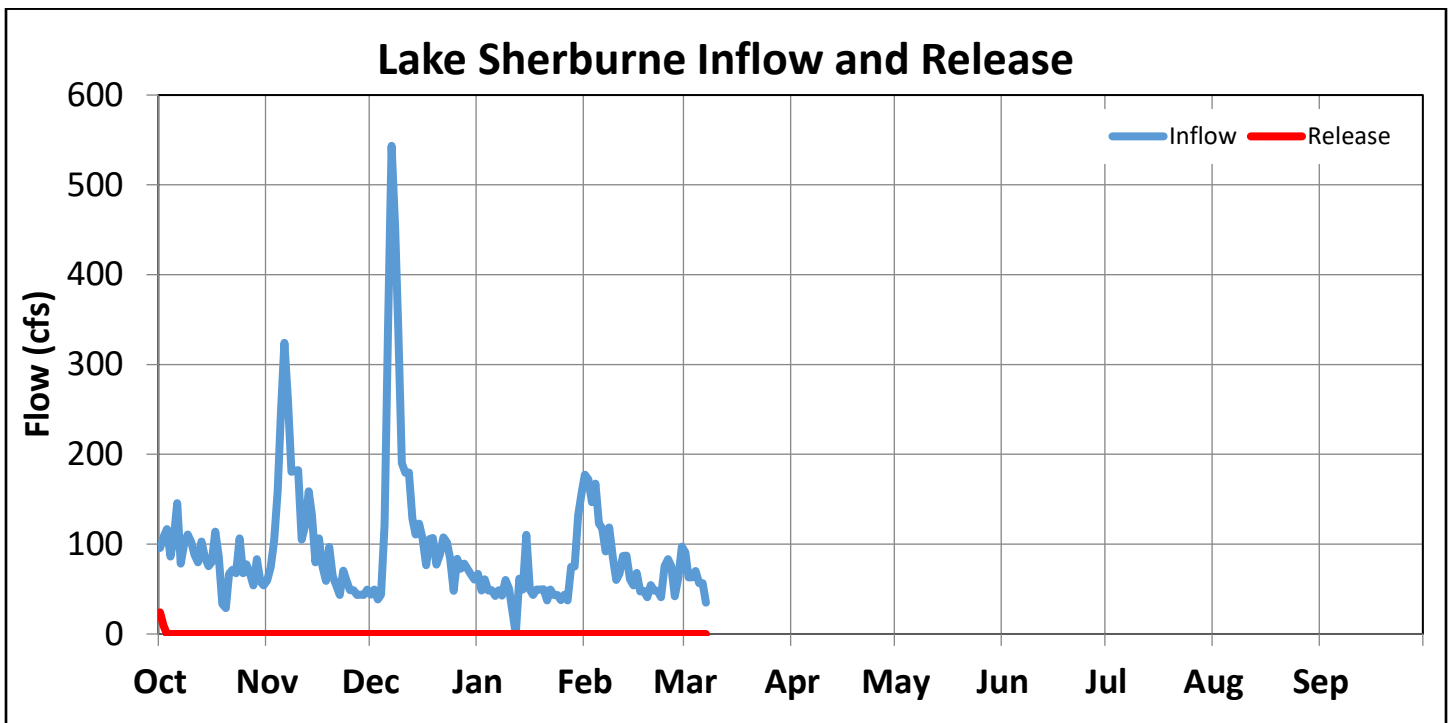
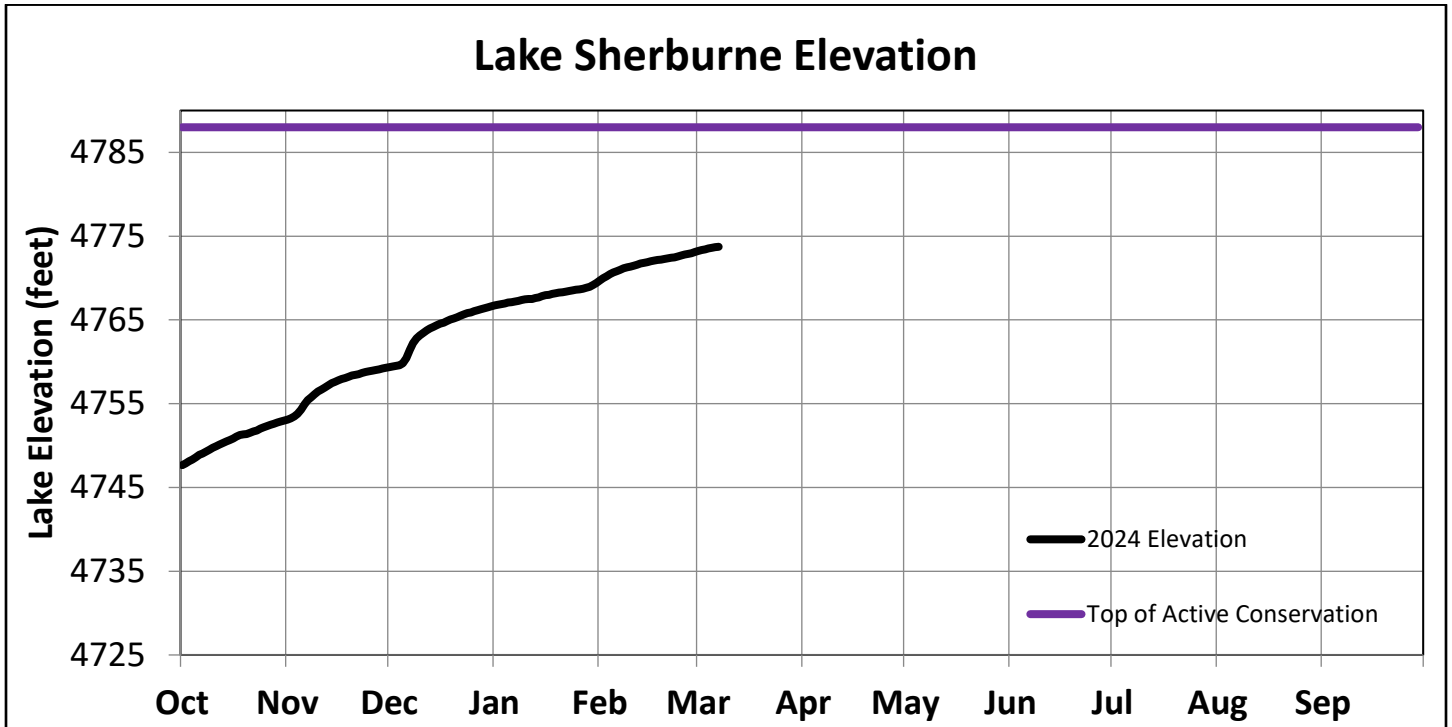
March 1 Elevation and Storage

	Elevation (feet)	Storage (acre-feet)	Percent of Average	Percent Full
Sherburne Reservoir	4773.11	42,863	129	65
Fresno Reservoir	2551.64	21,865	51	23
Nelson Reservoir	2216.54	58,786	115	75

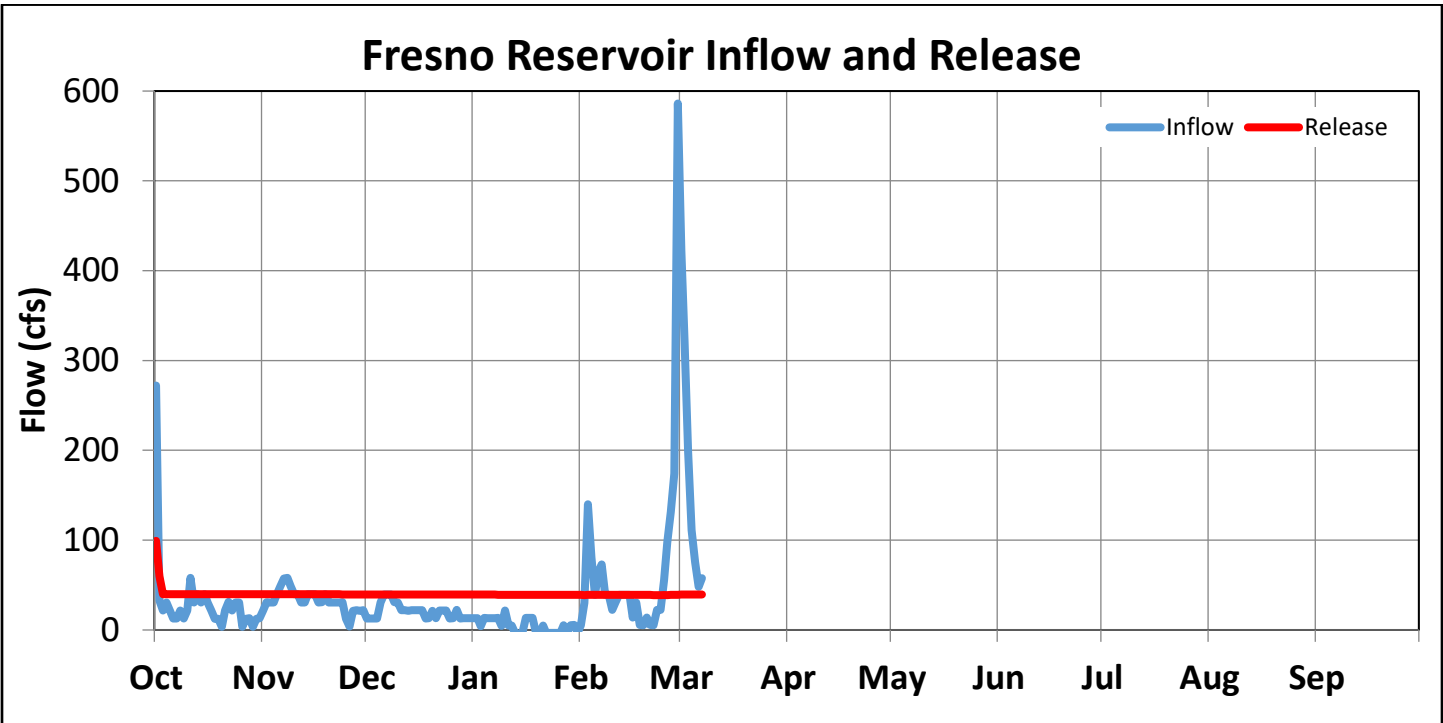
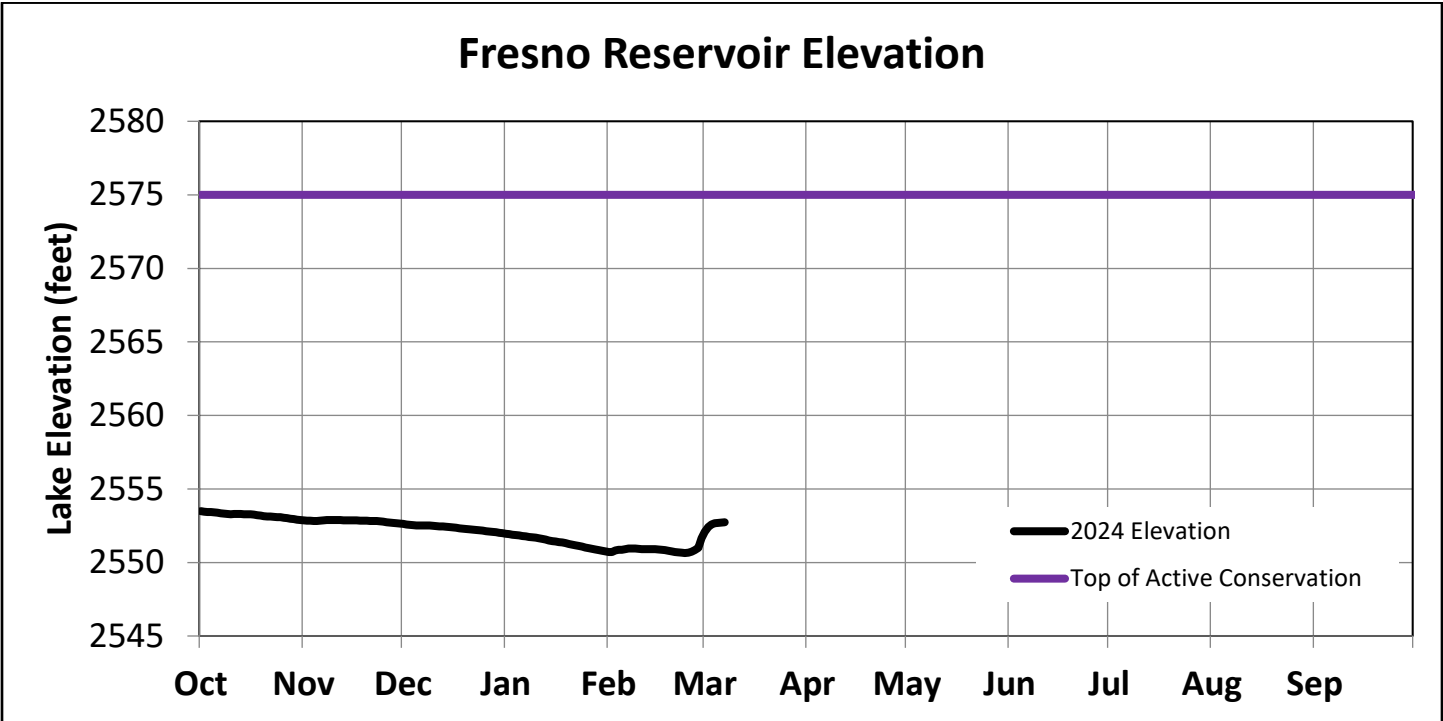
Past Inflows (1,000's of acre-feet)

Month	Sherburne Reservoir		Fresno Reservoir	
	Inflow	% of Average	Inflow	% of Average
Water Year 2024				
October	5.2	78	1.9	29
November	6.5	84	2.0	68
December	8.4	216	1.3	75
January	3.4	124	0.3	23
February	4.9	205	3.7	86
Water Year 2023				
October	2.4	36	8.0	127
November	2.9	38	1.5	51
December	2.6	67	0.7	41
January	2.3	82	0.6	46
February	1.5	63	3.2	72
March	1.6	42	1.8	7
April	5.9	61	59.1	182
May	36.2	116	27.8	66
June	21.5	54	35.4	71
July	8.5	46	17.0	57
August	7.4	87	28.6	98
September	5.5	103	6.3	29

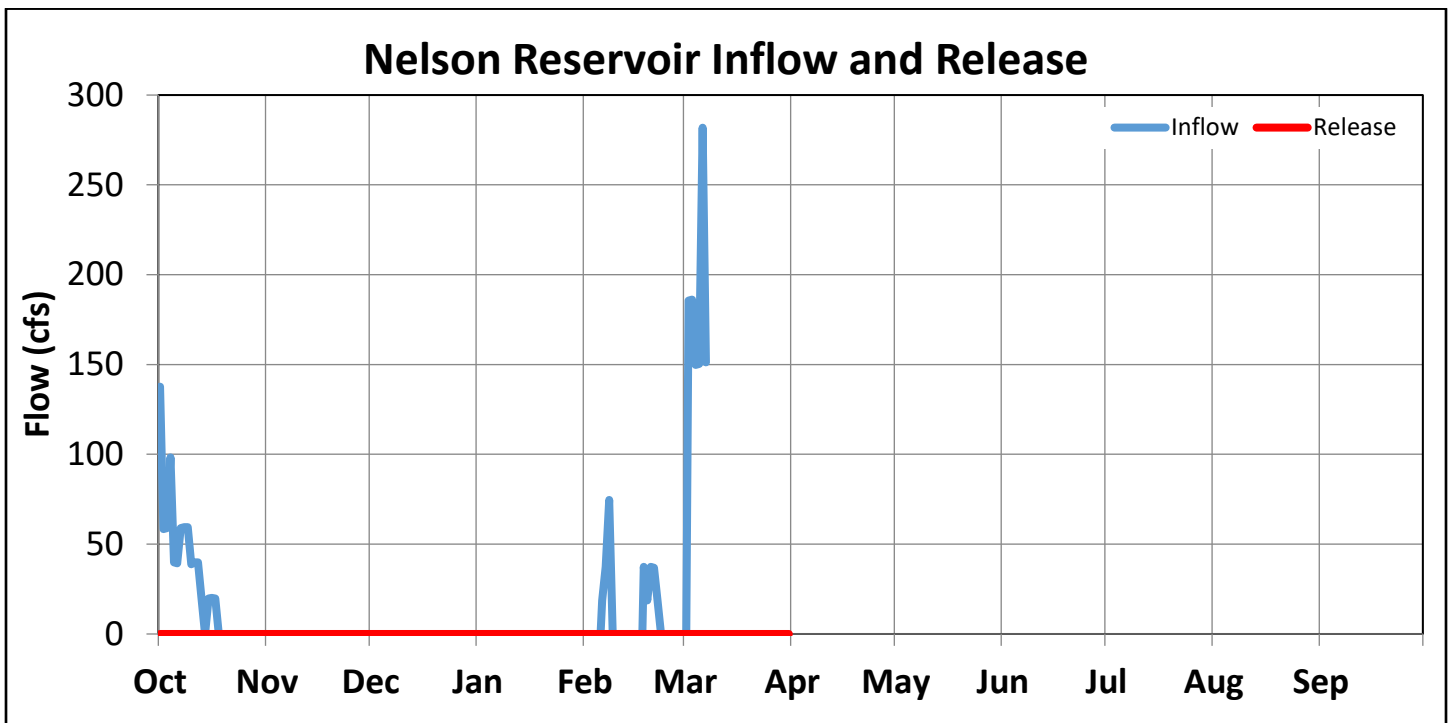
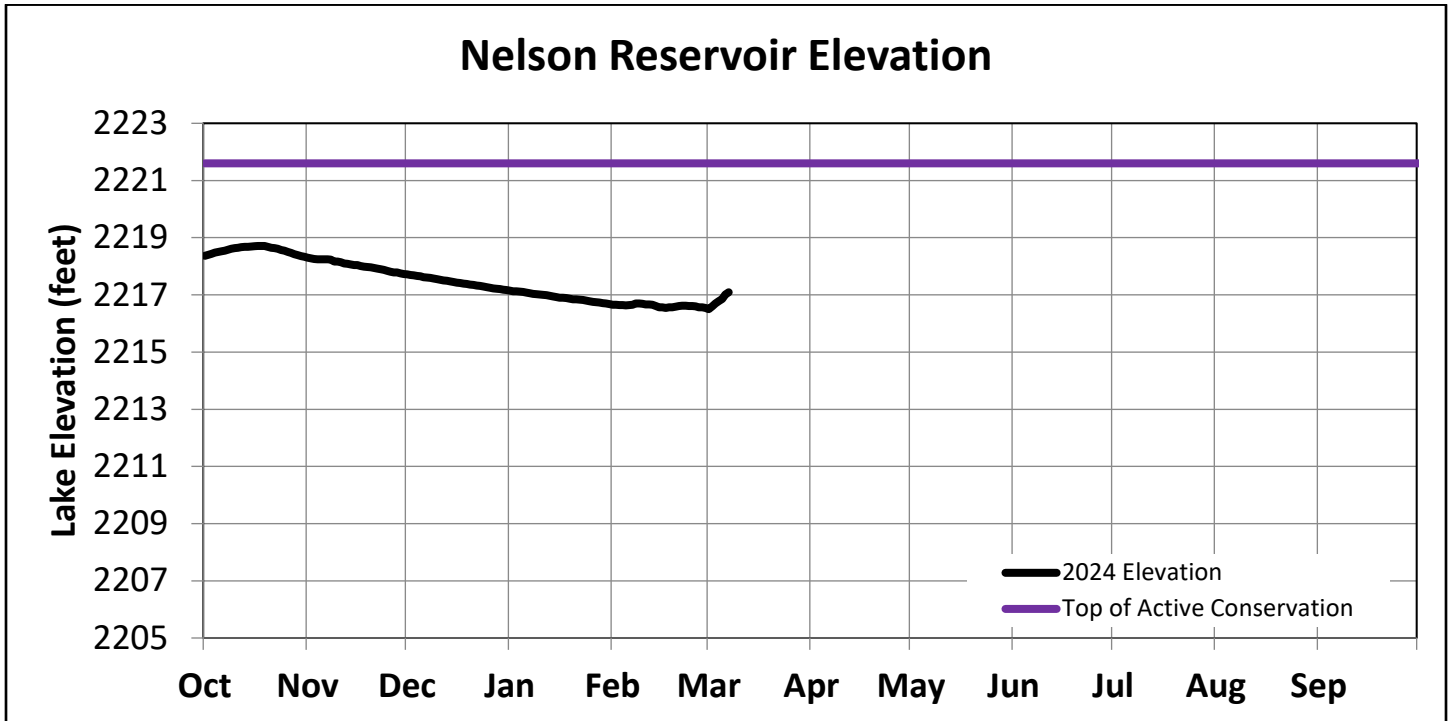
OPERATIONS REVIEW: LAKE SHERBURNE



OPERATIONS REVIEW: FRESNO RESERVOIR



OPERATIONS REVIEW: NELSON RESERVOIR



OPERATIONS OUTLOOK (March 1, 2024 through February 28, 2025)

Median Inflow Conditions

Sherburne Reservoir		Initial Content Elevation		42,863 acre-feet 4773.11 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Sherburne Inflow (kaf)	3.2	8.8	27.3	30.6	15.3	7.0	4.9	5.1	4.3	3.4	2.9	2.8	115.6
Sherburne Release (kaf)	0.3	33.0	11.2	3.3	22.5	35.1	24.7	0.0	0.0	0.0	0.0	0.0	130.1
Sherburne Release (cfs)	5	555	182	55	366	571	415	0	0	0	0	0	
Net Content Change (kaf)	2.9	-24.2	16.1	27.3	-7.2	-28.1	-19.8	5.1	4.3	3.4	2.9	2.8	-14.5
End of Month Content (kaf)	45.8	21.6	37.7	65.0	57.8	29.7	9.9	15.0	19.3	22.7	25.6	28.4	
End of Month Elevation (feet)	4775.2	4754.9	4769.2	4787.3	4783.0	4762.5	4741.9	4748.0	4752.6	4756.0	4758.7	4761.3	
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
St. Mary River Runoff (kaf)	8.7	17.3	85.9	115.2	64.7	28.3	17.9	14.9	9.8	7.2	7.2	6.1	383.2
Natural Flow at Boundary (kaf)	11.9	26.1	113.2	145.8	80.0	35.3	22.8	20.0	14.1	10.6	10.1	8.9	498.8
St. Mary Canal Diversion (cfs)	50	550	600	600	600	600	400	0	0	0	0	0	
St. Mary Canal Diversion (kaf)	3.1	32.7	36.9	35.7	36.9	36.9	23.8	0.0	0.0	0.0	0.0	0.0	206.0
Fresno Reservoir		Initial Content Elevation		21,865 acre-feet 2551.64 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Milk River Runoff (kaf)	10.6	10.5	4.9	3.5	0.3	0.4	1.9	3.3	2.2	1.4	1.8	4.7	45.5
From St. Mary Canal (kaf)	0.0	29.4	29.5	28.6	29.5	29.5	20.2	0.0	0.0	0.0	0.0	0.0	166.7
Fresno Inflow (kaf)	10.6	39.9	34.4	32.1	29.8	29.9	22.1	3.3	2.2	1.4	1.8	4.7	212.2
Fresno Release (kaf)	2.5	2.8	37.9	49.2	62.4	19.6	18.4	3.3	2.4	2.5	2.5	2.2	205.7
Fresno Release (cfs)	41	47	616	827	1015	319	309	54	40	41	41	40	
Net Content Change (kaf)	8.1	37.1	-3.5	-17.1	-32.6	10.3	3.7	0.0	-0.2	-1.1	-0.7	2.5	6.5
End of Month Content (kaf)	30.0	67.1	63.6	46.5	13.9	24.2	27.9	27.9	27.7	26.6	25.9	28.4	
End of Month Elevation (feet)	2556.1	2569.5	2568.6	2563.4	2546.5	2553.0	2555.0	2555.0	2554.9	2554.3	2553.9	2555.3	
Irrigation Allotment (ft/ac)	0.00	0.00	0.35	0.50	0.65	0.10	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Irrigation Delivery (kaf)	0.0	0.0	32.4	46.3	60.2	9.3	0.0	0.0	0.0	0.0	0.0	0.0	148.2
FBIIP Demand (kaf)	0.0	0.0	0.0	0.0	1.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	13.0
Fresno to Dodson Gain (kaf)	4.4	4.2	6.0	7.1	3.8	0.7	0.5	1.0	0.0	0.0	0.0	0.0	27.7
Bowdoin Demand (kaf)	0.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
Transfer to Nelson (kaf)	5.0	5.0	10.0	10.0	5.0	5.0	5.0	1.0	0.0	0.0	0.0	0.0	46.0
Nelson Reservoir		Initial Content Elevation		58,786 acre-feet 2216.54 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Delivery to Nelson (kaf)	4.5	4.5	9.0	9.0	4.5	4.5	4.5	0.9	0.0	0.0	0.0	0.0	41.4
Net Content Change (kaf)	2.7	2.7	-2.5	-6.7	-15.3	0.0	2.7	-0.9	-1.8	-1.8	-1.8	-1.7	-24.4
End of Month Content (kaf)	61.5	64.2	61.7	55.0	39.7	39.7	42.4	41.5	39.7	37.9	36.1	34.4	
End of Month Elevation (feet)	2217.3	2218.0	2217.3	2215.5	2210.6	2210.6	2211.6	2211.2	2210.6	2209.8	2209.1	2208.4	
Total Release (kaf)	0.0	0.0	9.7	13.9	18.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	44.3

OPERATIONS OUTLOOK (March 1, 2024 through February 28, 2025)

Minimum Inflow Conditions

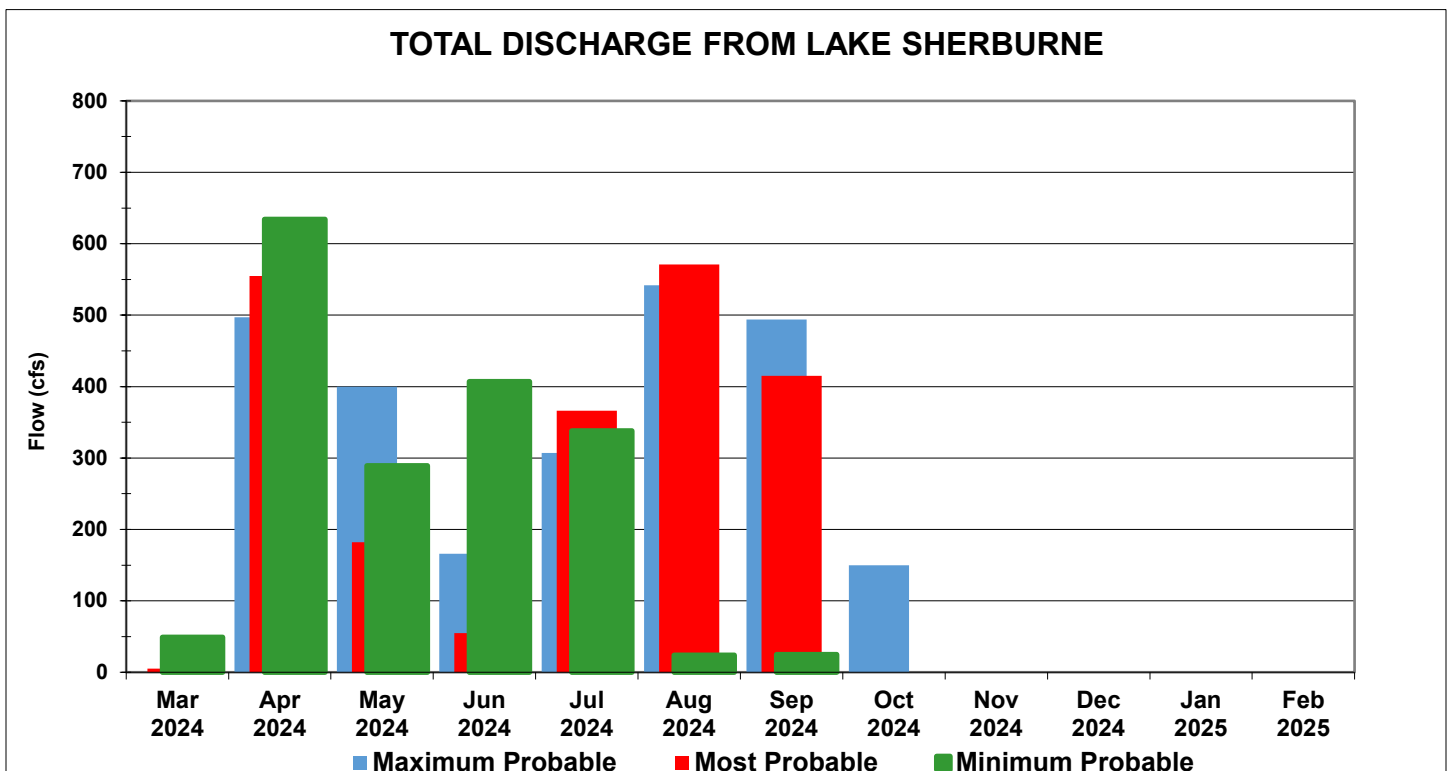
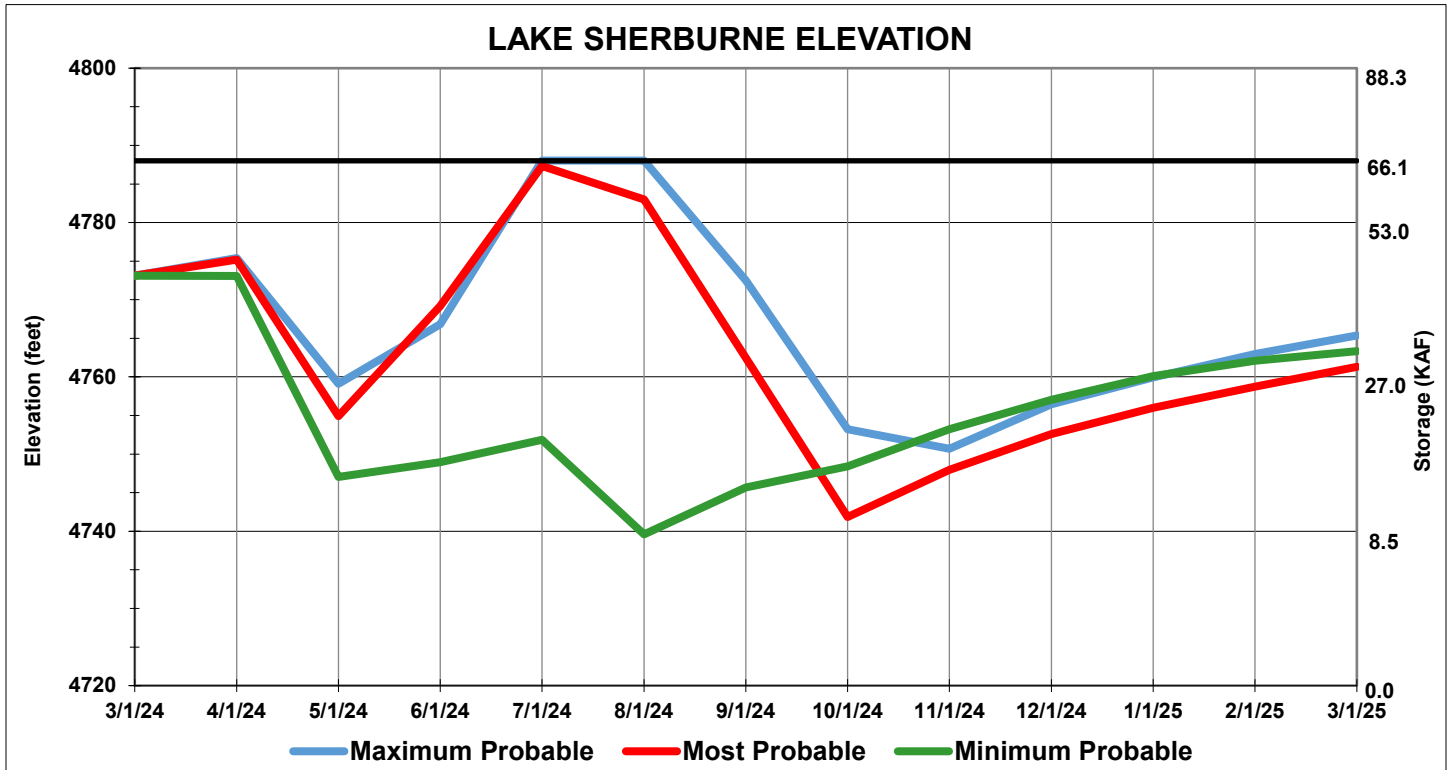
Sherburne Reservoir		Initial Content Elevation		42,863 acre-feet 4773.11 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Sherburne Inflow (kaf)	2.9	9.1	19.5	26.9	10.4	6.3	3.9	4.5	3.9	3.3	2.2	1.4	94.3
Sherburne Release (kaf)	3.0	37.7	17.8	24.2	20.8	1.5	1.5	0.0	0.0	0.0	0.0	0.0	106.5
Sherburne Release (cfs)	49	634	289	407	338	24	25	0	0	0	0	0	
Net Content Change (kaf)	-0.1	-28.6	1.7	2.7	-10.4	4.8	2.4	4.5	3.9	3.3	2.2	1.4	-12.2
End of Month Content (kaf)	42.8	14.2	15.9	18.6	8.2	13.0	15.4	19.9	23.8	27.1	29.3	30.7	
End of Month Elevation (feet)	4773.1	4747.1	4749.0	4751.9	4739.6	4745.7	4748.4	4753.2	4757.0	4760.1	4762.1	4763.3	
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
St. Mary River Runoff (kaf)	3.1	3.5	67.4	69.8	38.5	19.5	13.1	6.1	3.1	4.0	4.0	4.6	236.7
Natural Flow at Boundary (kaf)	6.0	12.6	86.9	96.7	48.9	25.8	17.0	10.6	7.0	7.3	6.2	6.0	331.0
St. Mary Canal Diversion (cfs)	50	550	600	600	400	0	0	0	0	0	0	0	
St. Mary Canal Diversion (kaf)	3.1	32.7	36.9	35.7	24.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	133.0
Fresno Reservoir		Initial Content Elevation		21,865 acre-feet 2551.64 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Milk River Runoff (kaf)	4.7	3.5	1.3	1.2	0.0	0.0	0.6	2.0	0.5	0.2	0.3	0.7	15.0
From St. Mary Canal (kaf)	0.0	29.4	33.2	28.6	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.2
Fresno Inflow (kaf)	4.7	32.9	34.5	29.8	16.0	0.0	0.6	2.0	0.5	0.2	0.3	0.7	122.2
Fresno Release (kaf)	2.5	2.4	45.4	51.4	6.1	6.1	6.0	2.5	2.4	2.5	2.5	2.2	132.0
Fresno Release (cfs)	41	40	738	864	99	99	101	41	40	41	41	40	
Net Content Change (kaf)	2.2	30.5	-10.9	-21.6	9.9	-6.1	-5.4	-0.5	-1.9	-2.3	-2.2	-1.5	-9.8
End of Month Content (kaf)	24.1	54.6	43.7	22.1	32.0	25.9	20.5	20.0	18.1	15.8	13.6	12.1	
End of Month Elevation (feet)	2552.9	2566.0	2562.3	2551.8	2557.1	2553.9	2550.8	2550.5	2549.4	2547.8	2546.3	2545.1	
Irrigation Allotment (ft/ac)	0.00	0.00	0.45	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Irrigation Delivery (kaf)	0.0	0.0	41.7	51.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.7
FBIIP Demand (kaf)	0.0	0.0	0.0	0.0	1.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	13.0
Fresno to Dodson Gain (kaf)	1.7	1.8	1.3	1.6	0.7	0.5	0.5	0.4	0.0	0.0	0.0	0.0	8.5
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)	2.0	2.0	5.0	2.0	1.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	13.5
Nelson Reservoir		Initial Content Elevation		58,786 acre-feet 2216.54 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Delivery to Nelson (kaf)	1.8	1.8	4.5	1.8	0.9	0.5	0.5	0.5	0.0	0.0	0.0	0.0	12.3
Net Content Change (kaf)	0.0	0.0	-9.8	-15.2	-0.9	-1.3	-1.3	-1.3	-1.8	-1.8	-1.8	-1.7	-36.9
End of Month Content (kaf)	58.8	58.8	49.0	33.8	32.9	31.6	30.3	29.0	27.2	25.4	23.6	21.9	
End of Month Elevation (feet)	2216.5	2216.5	2213.7	2208.1	2207.7	2207.1	2206.5	2205.9	2205.0	2204.1	2203.2	2202.2	
Total Release (kaf)	0.0	0.0	12.5	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.7

OPERATIONS OUTLOOK (March 1, 2024 through February 28, 2025)

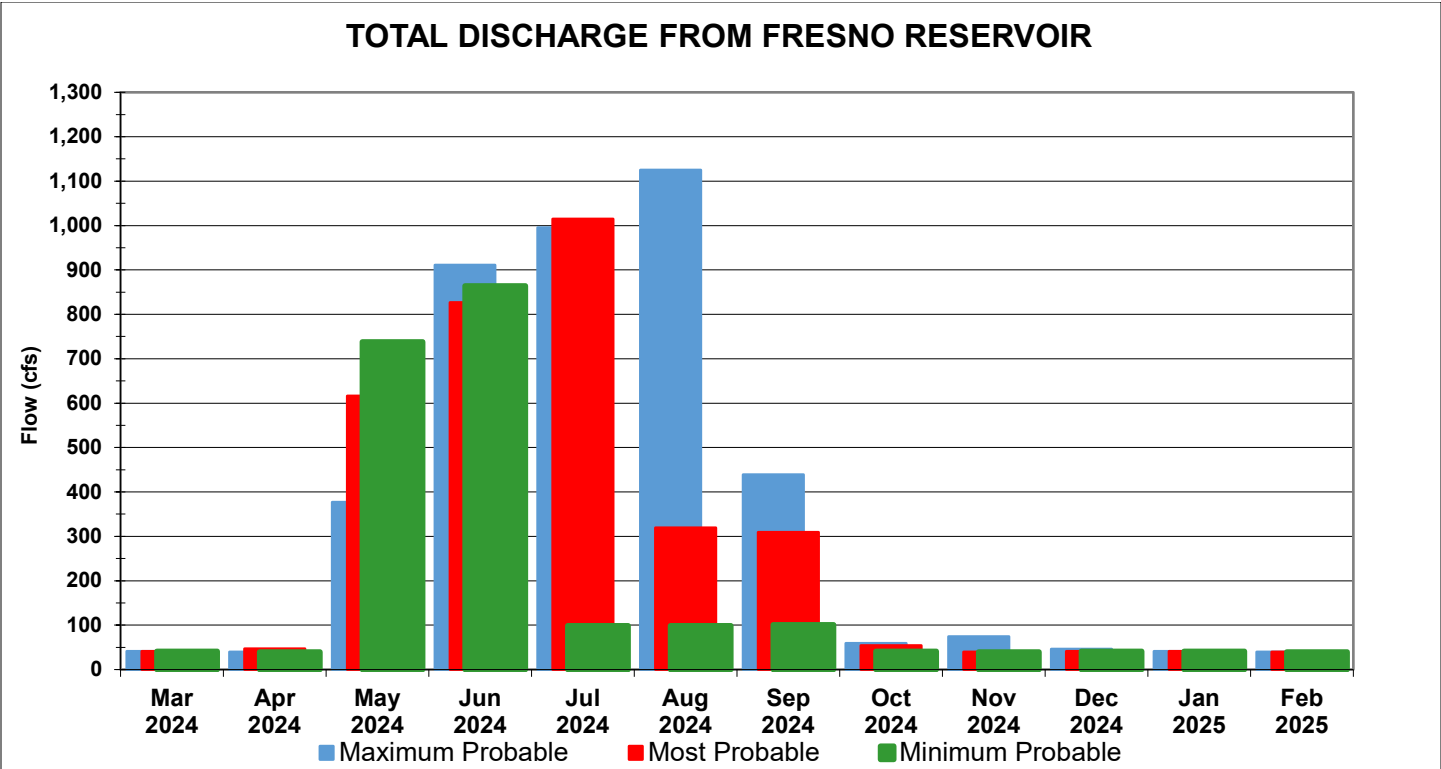
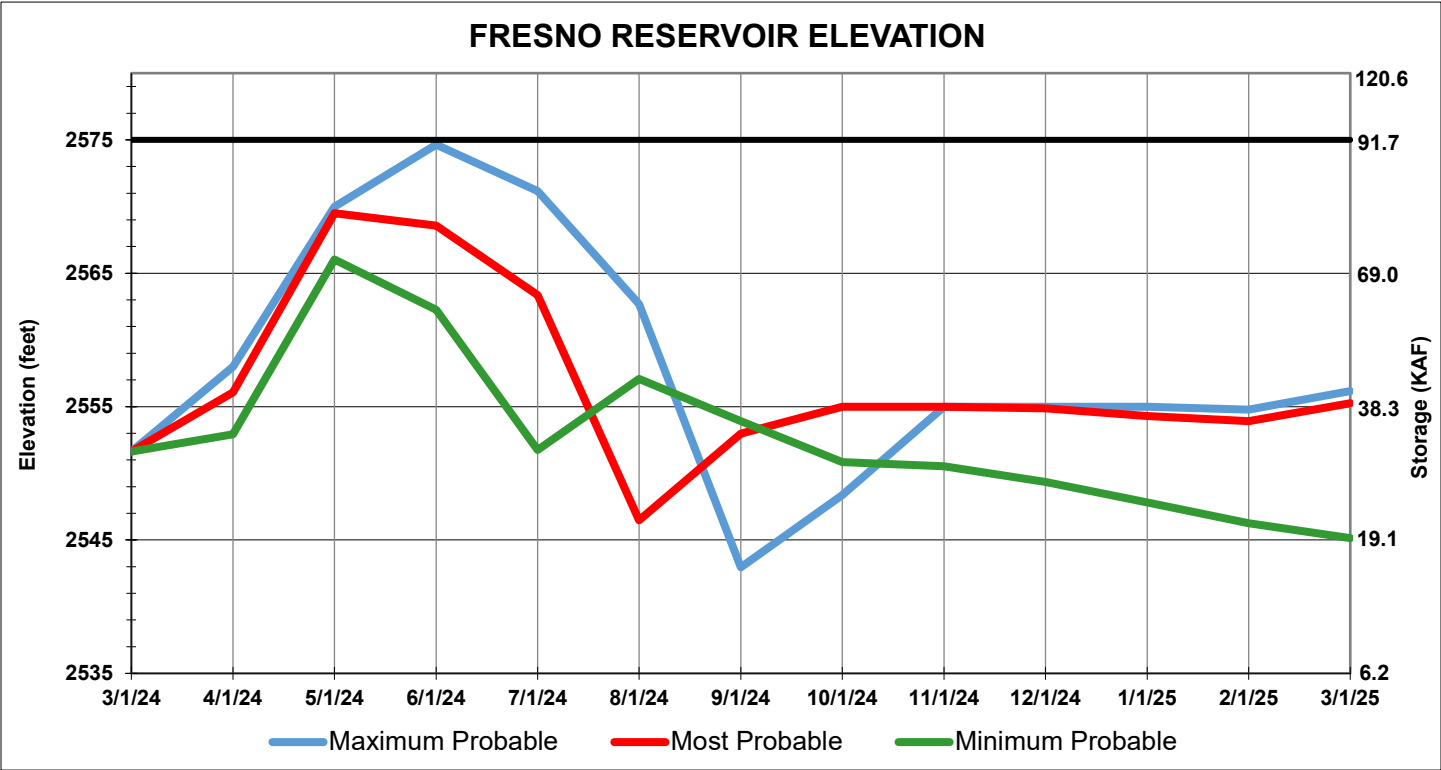
Maximum Inflow Conditions

Sherburne Reservoir		Initial Content Elevation		42,863 acre-feet 4773.11 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Sherburne Inflow (kaf)	3.2	9.5	33.4	41.3	18.9	9.1	7.3	6.8	5.7	3.7	3.4	2.8	145.1
Sherburne Release (kaf)	0.0	29.6	24.6	9.9	18.9	33.3	29.4	9.2	0.0	0.0	0.0	0.0	154.9
Sherburne Release (cfs)	0	497	400	166	307	542	494	150	0	0	0	0	
Net Content Change (kaf)	3.2	-20.1	8.8	31.4	0.0	-24.2	-22.1	-2.4	5.7	3.7	3.4	2.8	-9.8
End of Month Content (kaf)	46.1	26.0	34.8	66.2	66.2	42.0	19.9	17.5	23.2	26.9	30.3	33.1	
End of Month Elevation (feet)	4775.4	4759.1	4766.8	4788.0	4788.0	4772.5	4753.2	4750.7	4756.5	4759.9	4763.0	4765.4	
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
St. Mary River Runoff (kaf)	21.7	29.2	106.9	153.7	92.2	36.8	23.4	24.5	17.8	11.5	15.8	14.4	547.9
Natural Flow at Boundary (kaf)	24.9	38.7	140.3	195.0	111.1	45.9	30.7	31.3	23.5	15.2	19.2	17.2	693.0
St. Mary Canal Diversion (cfs)	50	501	600	600	600	600	501	99	0	0	0	0	
St. Mary Canal Diversion (kaf)	3.1	29.8	36.9	35.7	36.9	36.9	29.8	6.1	0.0	0.0	0.0	0.0	215.2
Fresno Reservoir		Initial Content Elevation		21,865 acre-feet 2551.64 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Milk River Runoff (kaf)	14.5	15.1	10.9	7.6	1.0	0.6	6.5	9.4	4.4	2.8	2.1	4.9	79.8
From St. Mary Canal (kaf)	0.0	22.4	33.2	30.3	31.4	33.2	26.8	5.5	0.0	0.0	0.0	0.0	182.8
Fresno Inflow (kaf)	14.5	37.5	44.1	37.9	32.4	33.8	33.3	14.9	4.4	2.8	2.1	4.9	262.6
Fresno Release (kaf)	2.5	2.4	23.2	54.2	61.2	69.2	26.1	3.6	4.4	2.8	2.5	2.2	254.3
Fresno Release (cfs)	41	40	377	911	995	1125	439	59	74	46	41	40	
Net Content Change (kaf)	12.0	35.1	20.9	-16.3	-28.8	-35.4	7.2	11.3	0.0	0.0	-0.4	2.7	8.3
End of Month Content (kaf)	33.9	69.0	89.9	73.6	44.8	9.4	16.6	27.9	27.9	27.9	27.5	30.2	
End of Month Elevation (feet)	2558.0	2570.0	2574.6	2571.2	2562.7	2543.0	2548.4	2555.0	2555.0	2555.0	2554.8	2556.2	
Irrigation Allotment (ft/ac)	0.00	0.00	0.25	0.50	0.65	0.65	0.20	0.00	0.00	0.00	0.00	0.00	2.25
Irrigation Delivery (kaf)	0.0	0.0	23.2	46.3	60.2	60.2	18.5	0.0	0.0	0.0	0.0	0.0	208.4
FBIIP Demand (kaf)	0.0	0.0	0.0	0.0	1.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	13.0
Fresno to Dodson Gain (kaf)	17.4	18.2	12.6	16.4	6.8	2.0	5.4	4.0	0.0	0.0	0.0	0.0	82.8
Bowdoin Demand (kaf)	0.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
Transfer to Nelson (kaf)	10.0	15.0	10.0	10.0	5.0	5.0	7.0	5.0	0.0	0.0	0.0	0.0	67.0
Nelson Reservoir		Initial Content Elevation		58,786 acre-feet 2216.54 feet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Delivery to Nelson (kaf)	9.0	13.5	9.0	9.0	4.5	4.5	6.3	4.5	0.0	0.0	0.0	0.0	60.3
Net Content Change (kaf)	7.2	11.7	1.3	-2.0	-13.5	-15.3	-1.1	2.7	-1.8	-1.8	-1.8	-1.7	-16.1
End of Month Content (kaf)	66.0	77.7	79.0	77.0	63.5	48.2	47.1	49.8	48.0	46.2	44.4	42.7	
End of Month Elevation (feet)	2218.4	2221.3	2221.6	2221.2	2217.8	2213.5	2213.2	2214.0	2213.4	2212.9	2212.3	2211.7	
Total Release (kaf)	0.0	0.0	5.9	9.2	16.2	18.0	5.6	0.0	0.0	0.0	0.0	0.0	54.9

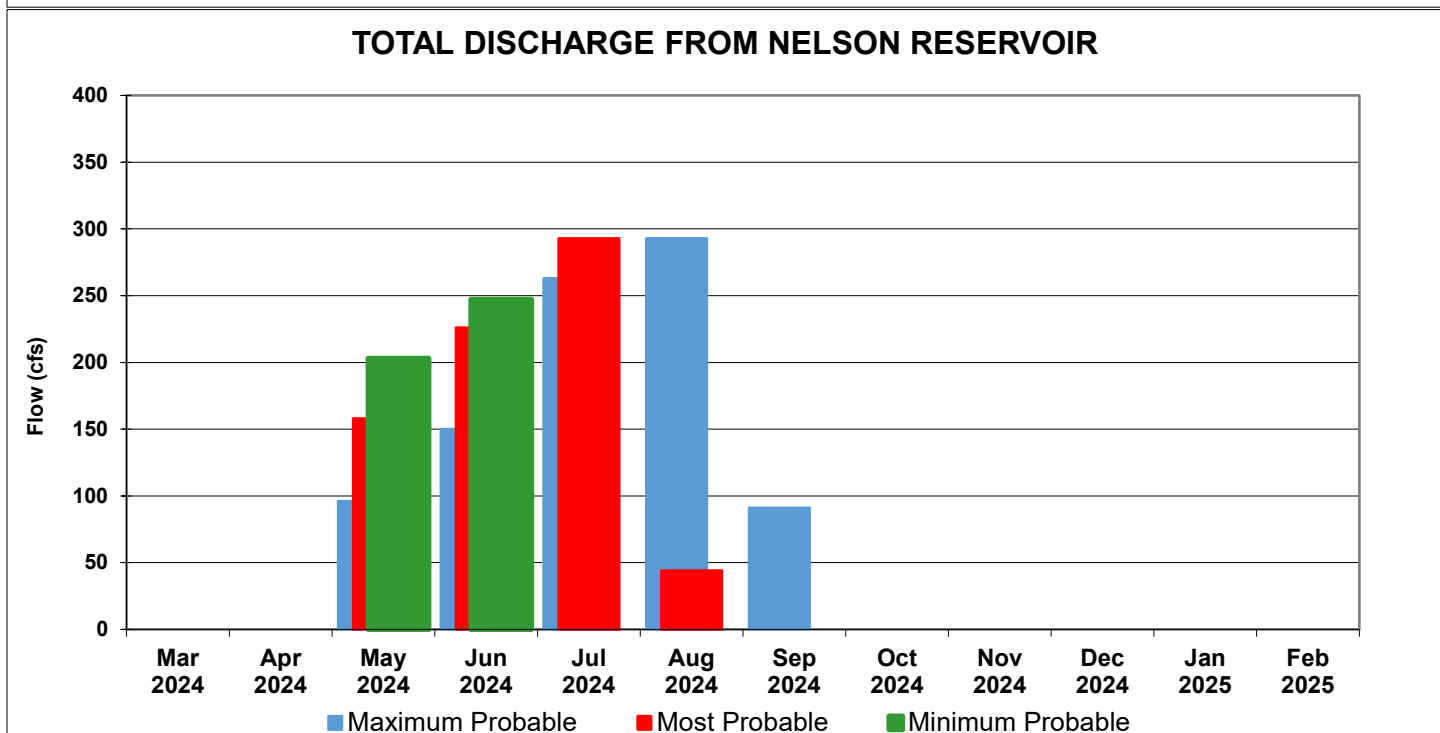
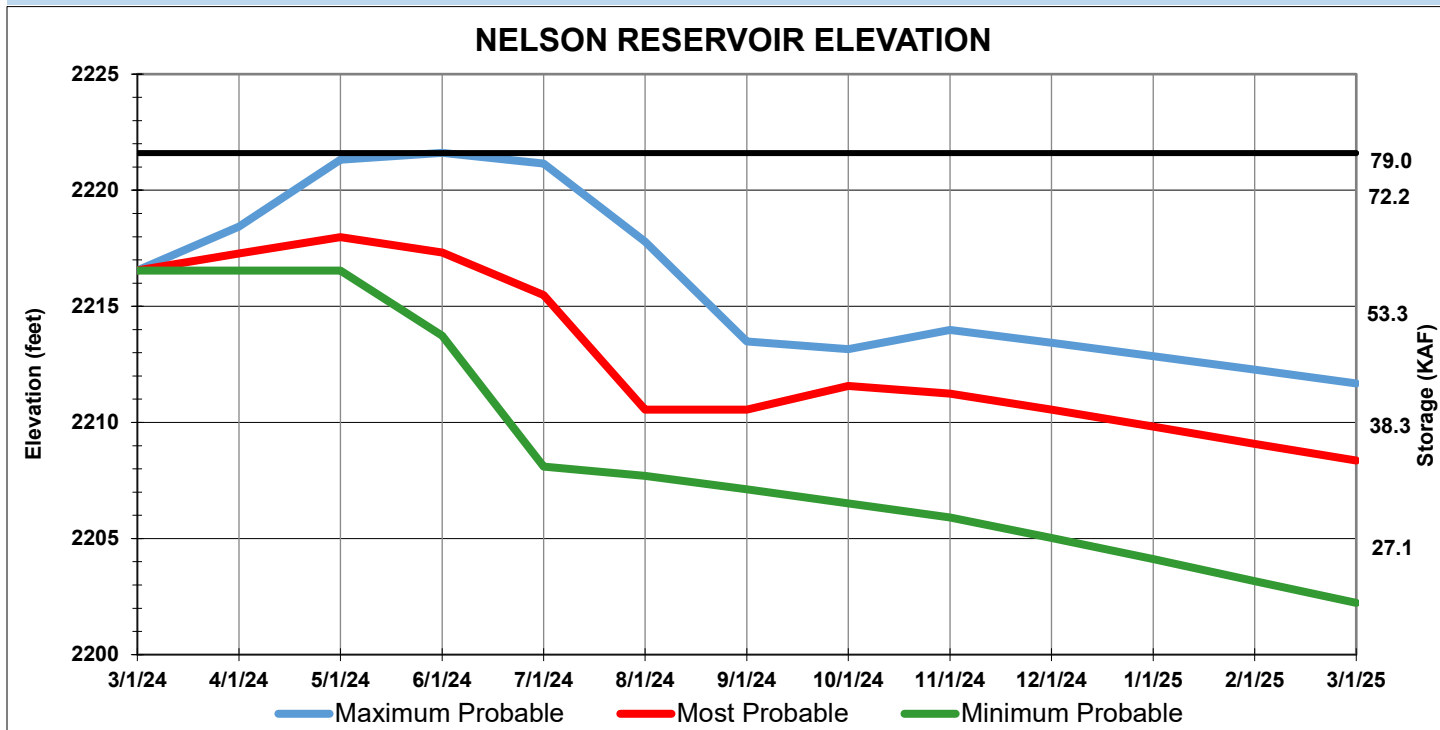
OPERATIONS OUTLOOK: LAKE SHERBURNE



OPERATIONS OUTLOOK: FRESNO RESERVOIR



OPERATIONS OUTLOOK: NELSON RESERVOIR



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