

Milk River Project Water Supply and Projected Operations



— BUREAU OF —
RECLAMATION

April 2024



Downstream of Fresno Dam

The April monthly operating plan covers actual operations from October 1, 2023, through March 31, 2024, and projected operations for April 1, 2024, through March 31, 2025. The projections are based on forecasted water supply and use.

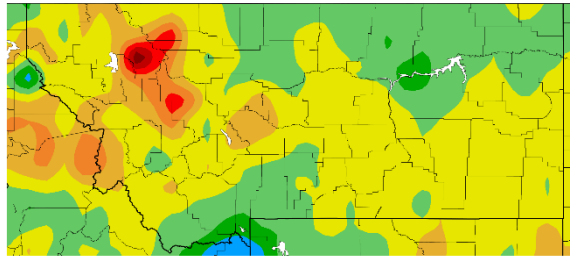
Median Forecasted Operations	Sherburne	Fresno	Nelson
April Inflow Forecast (kaf)	9	21	10
Percent of Average	92	64	96
April Release Forecast (cfs)	380	40	0
April 30 Elevation Forecast (feet)	4765.1	2564.2	2221.5

April-July Forecast	Sherburne
Inflow Forecast	87
Percent of Average	88

Climate Departure from Normal

March 1 through March 31

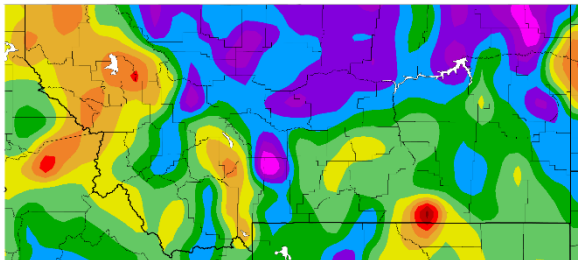
Precipitation



Departure from Normal (inches)

Temperature

Departure from Normal (°F)



HPRCC using provisional data NOAA Regional Climate Centers

CLIMATE SUMMARY

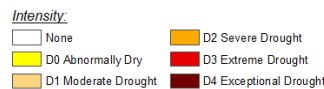
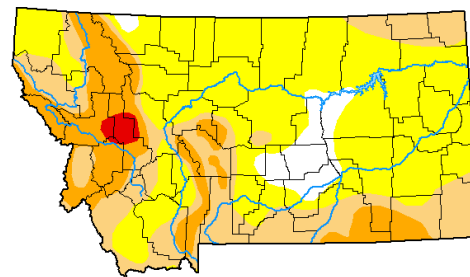
Precipitation in the St. Mary River and Milk River Basins was near average for March. Snowpack remains below average. The temperature was cooler than average in both basins.

There is an equal chance precipitation will be either below, near, or above average in the St. Mary River Basin during April. There is a 40 to 50 percent chance temperatures will be above average in both basins.

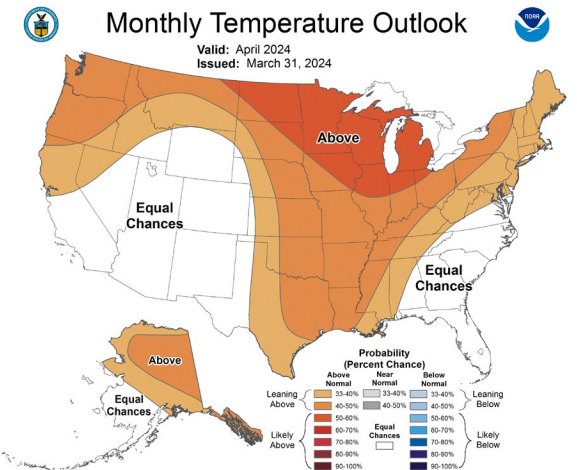
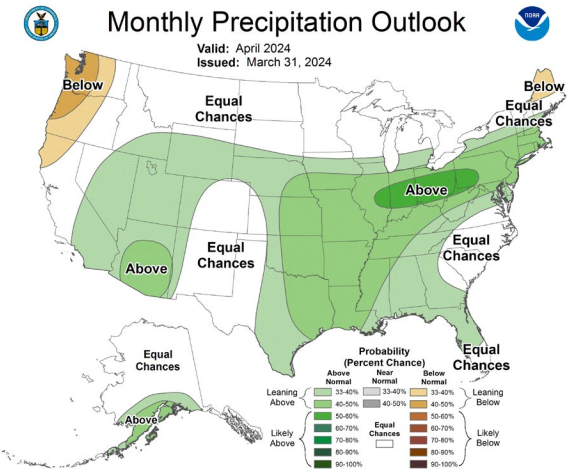
Drought conditions range from abnormally dry to severe.

Montana Drought Monitor Map

March 26, 2024



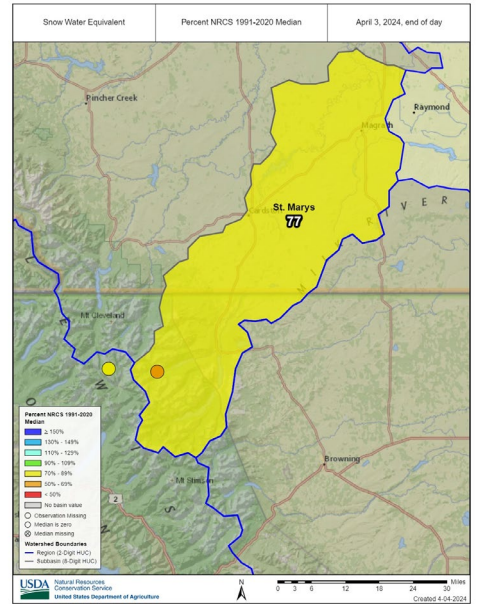
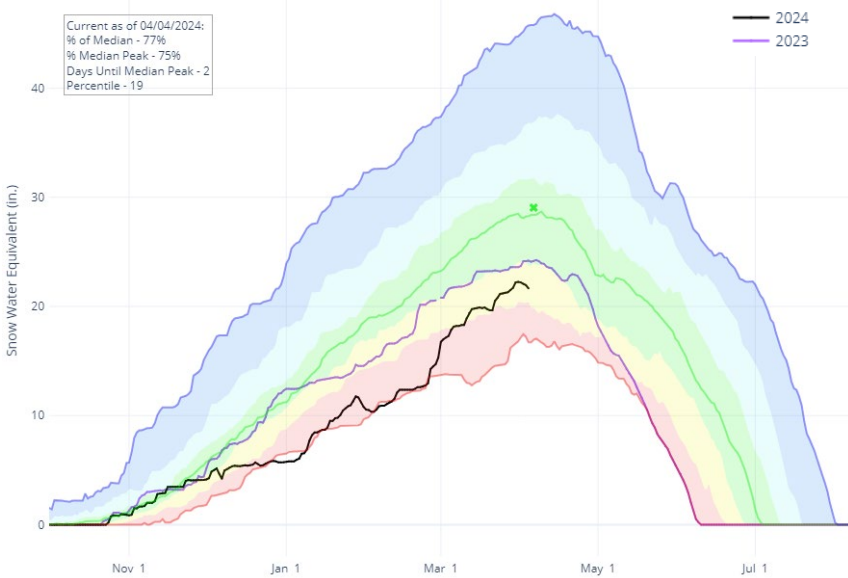
April Climate Outlook



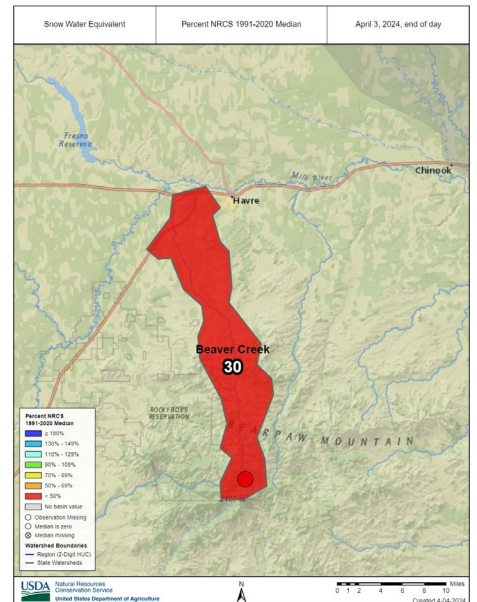
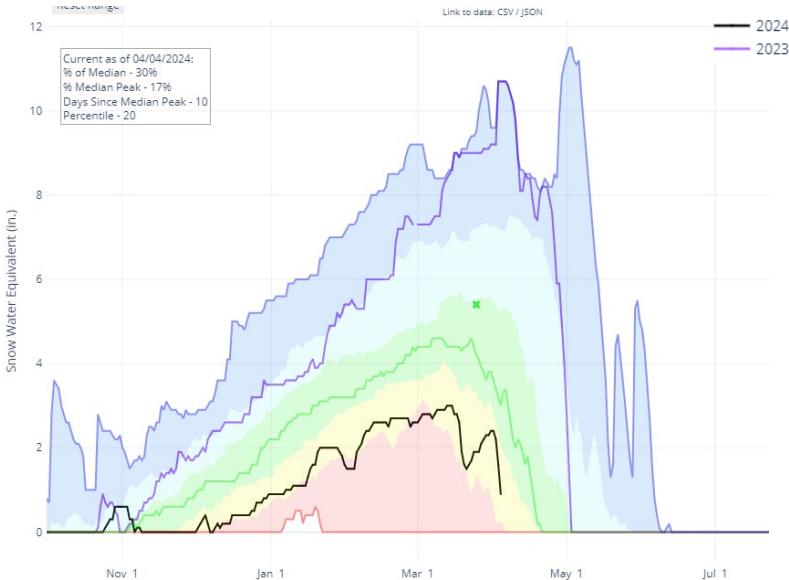
SNOWPACK SUMMARY

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

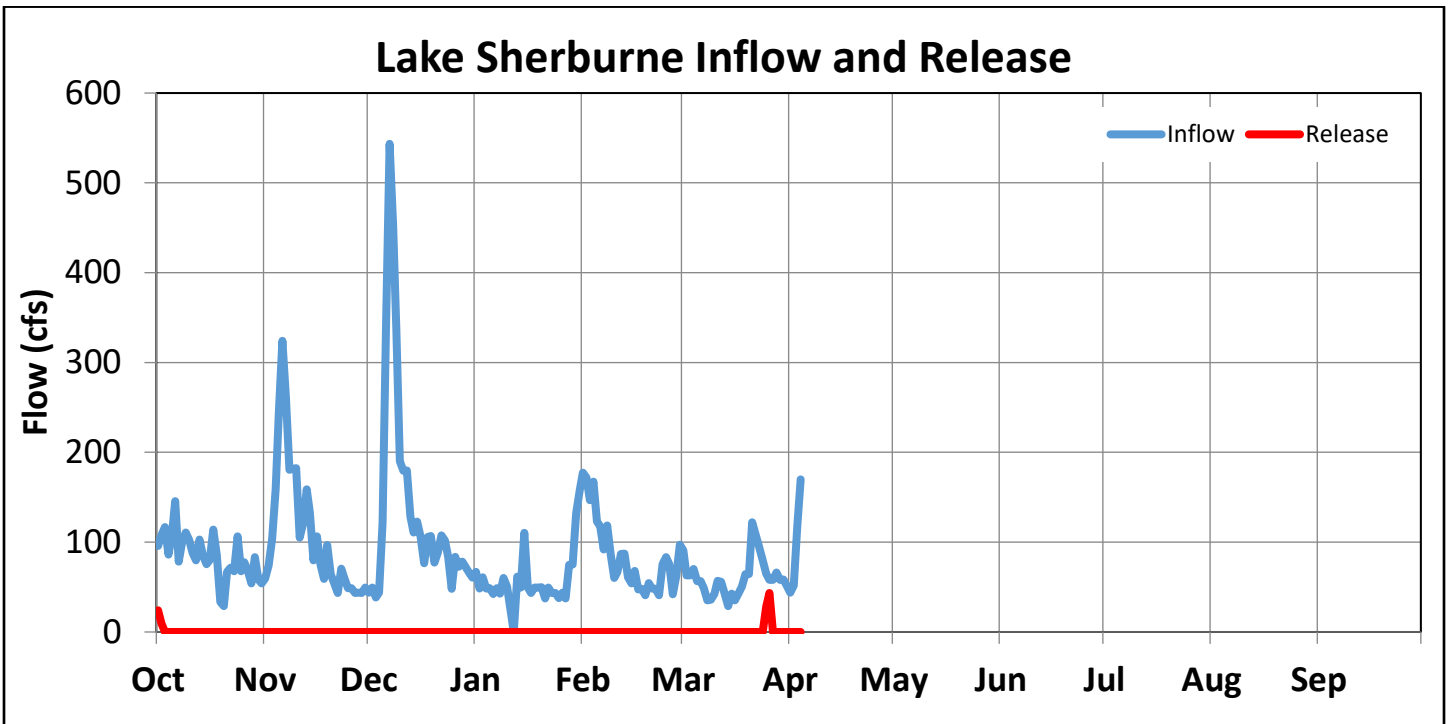
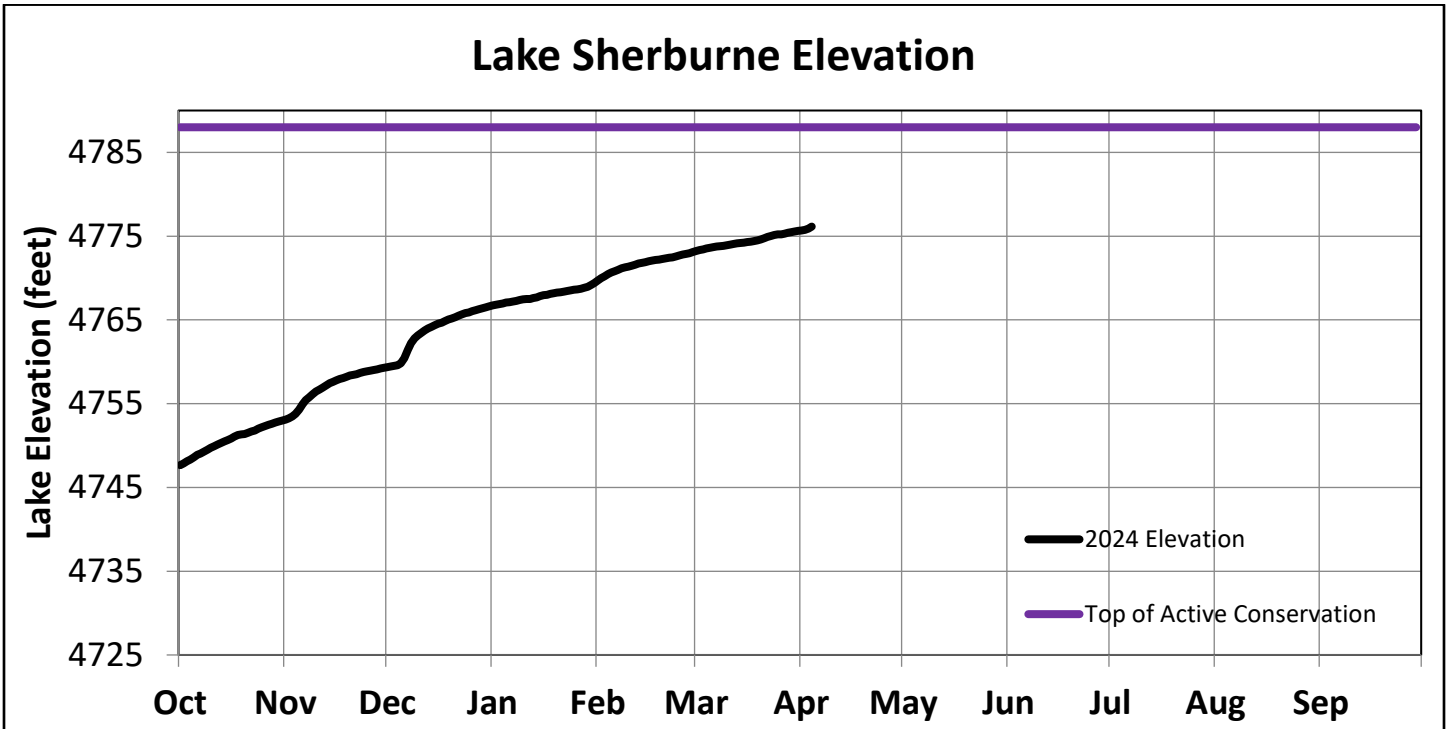
April 1 Elevation and Storage

	Elevation (feet)	Storage (acre-feet)	Percent of Average	Percent Full
Sherburne Reservoir	4773.11	42,863	143	70
Fresno Reservoir	2551.64	21,865	59	33
Nelson Reservoir	2216.54	58,786	129	89

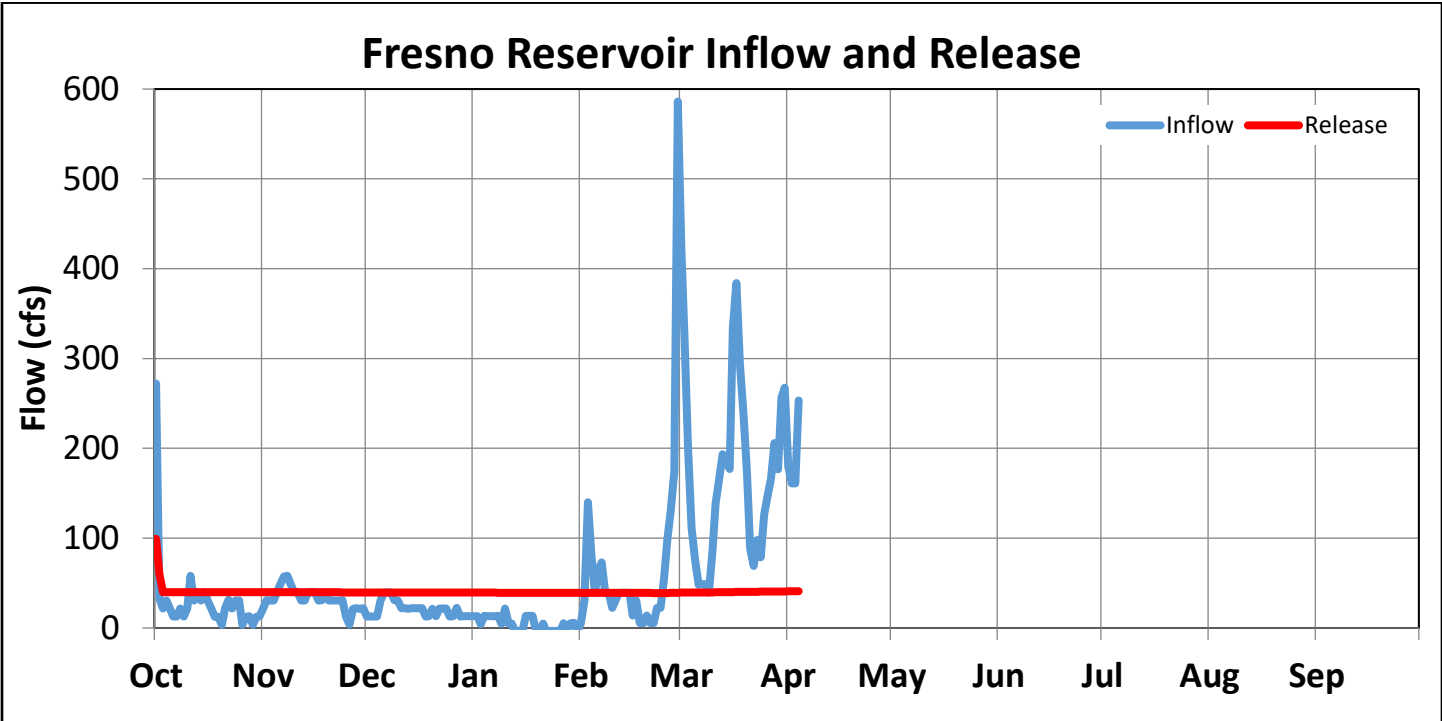
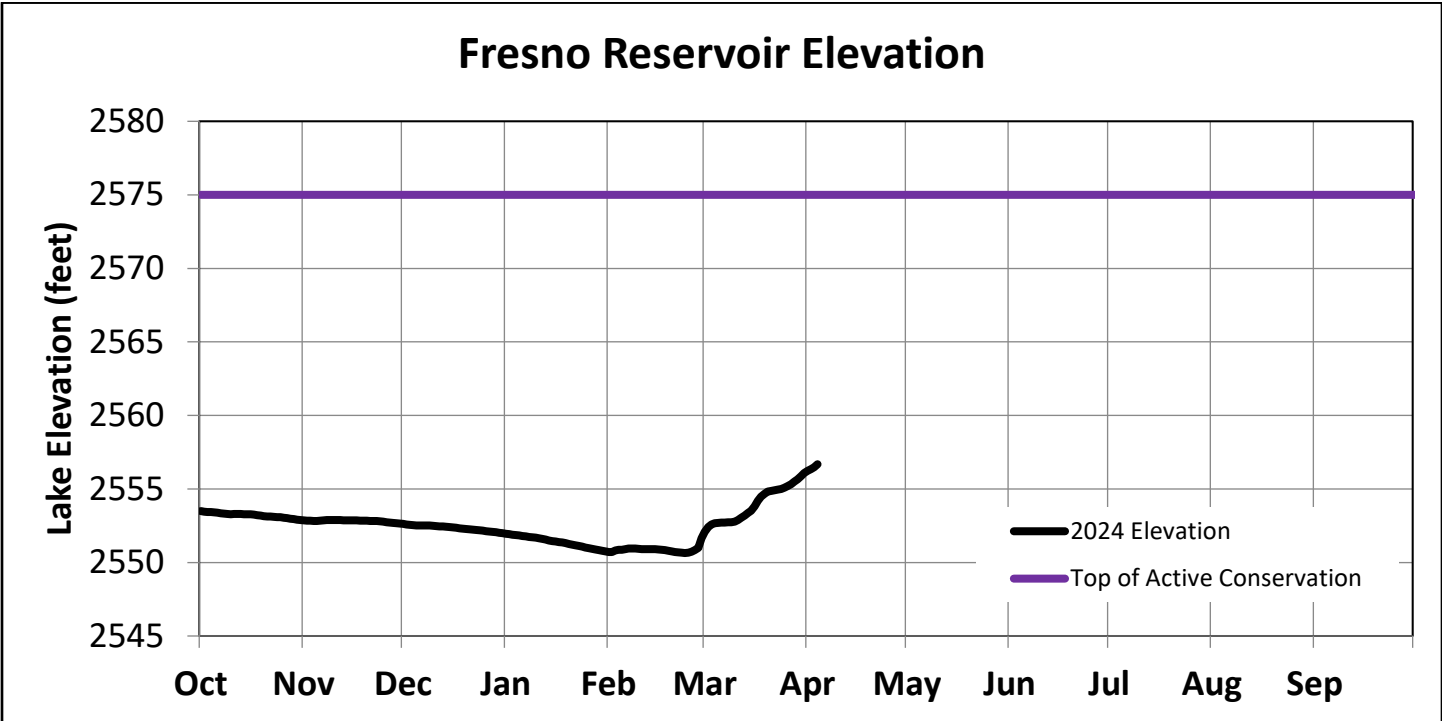
Past Inflows (1,000's of acre-feet)

Month	Sherburne Reservoir		Fresno Reservoir	
	Inflow	% of Average	Inflow	% of Average
<u>Water Year 2024</u>				
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
March	3.7	97	10.6	47
<u>Water Year 2023</u>				
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

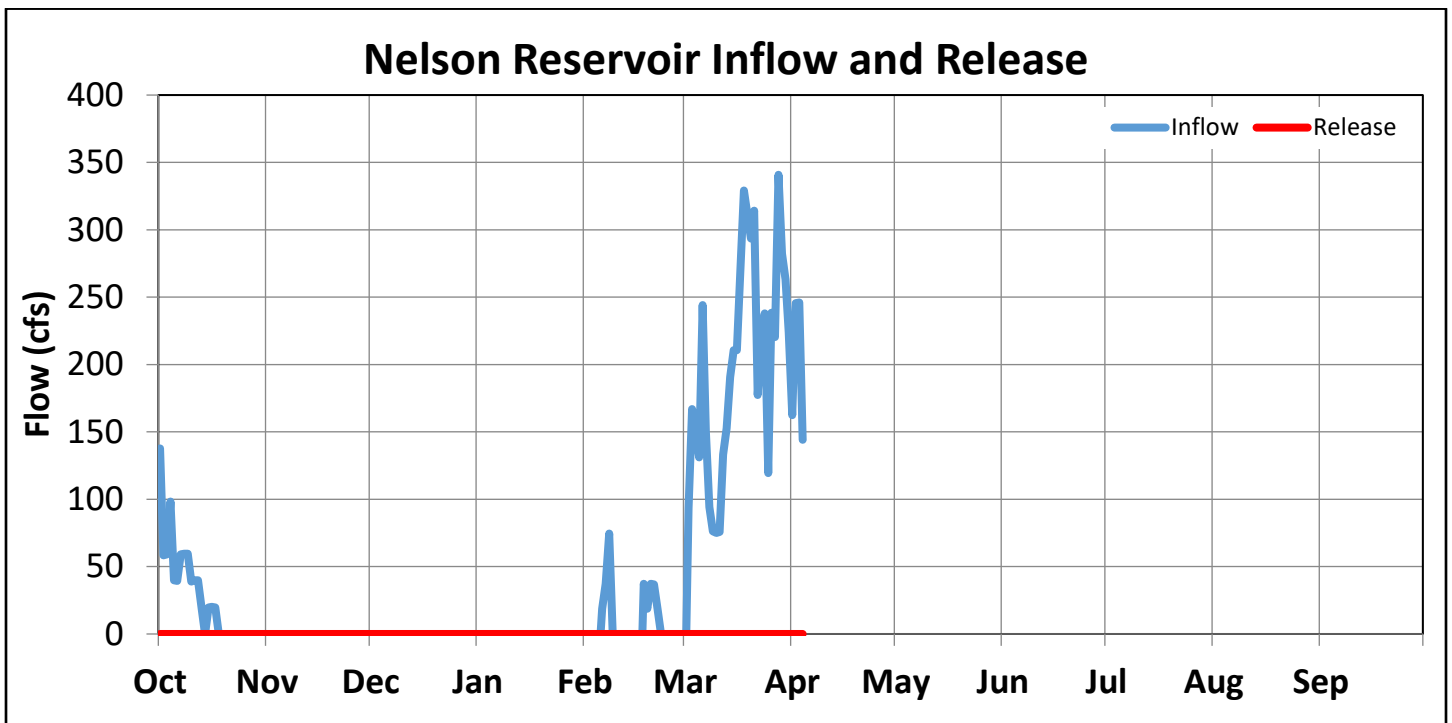
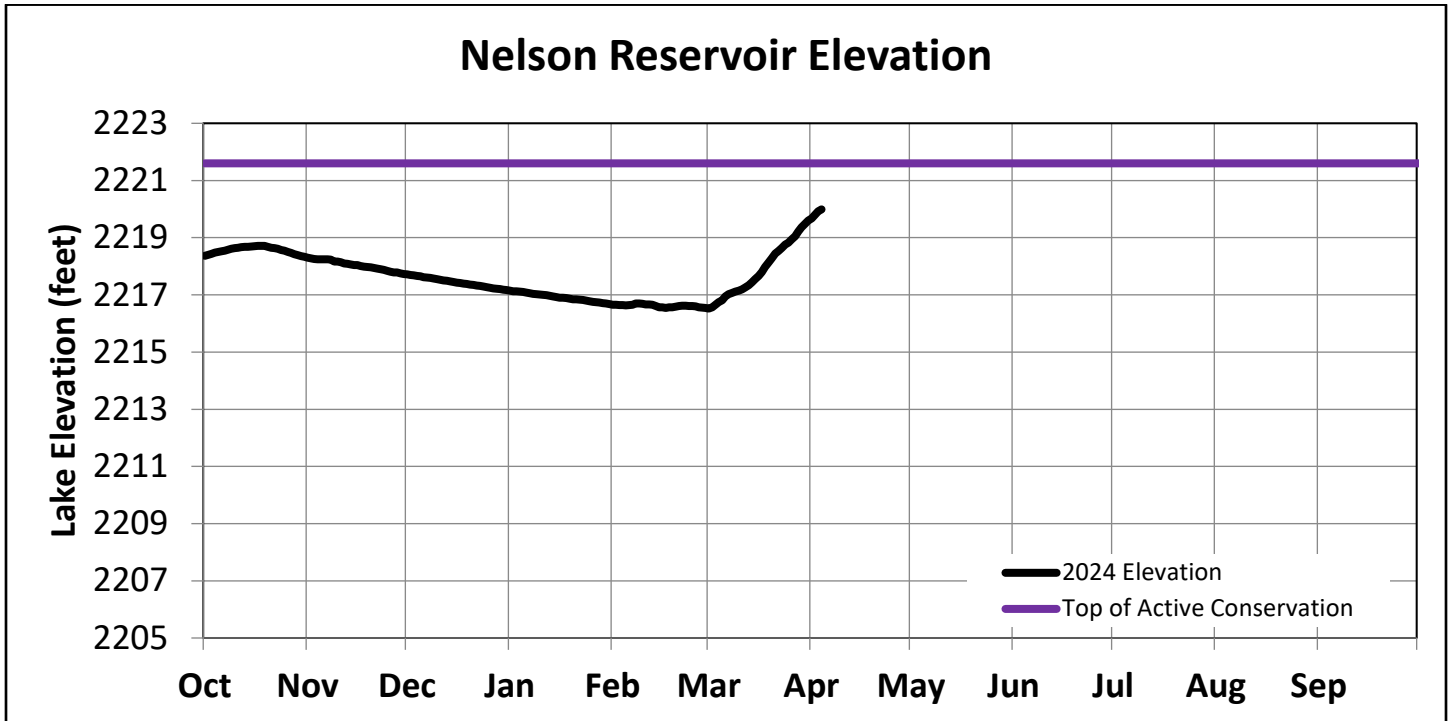
OPERATIONS REVIEW: LAKE SHERBURNE



OPERATIONS REVIEW: FRESNO RESERVOIR



OPERATIONS REVIEW: NELSON RESERVOIR



OPERATIONS OUTLOOK (April 1, 2024 through March 31, 2025)

Median Inflow Conditions													
Sherburne Reservoir	Initial Content		42,863										
	Elevation		4773.11		acre-feet feet								
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Sherburne Inflow (kaf)	9.0	29.0	33.1	15.9	7.5	5.6	5.6	4.6	3.5	2.9	2.8	3.2	122.7
Sherburne Release (kaf)	22.6	16.9	11.8	19.9	35.1	23.7	0.0	0.0	0.0	0.0	0.0	3.3	133.3
Sherburne Release (cfs)	380	275	198	324	571	398	0	0	0	0	0	54	
Net Content Change (kaf)	-13.6	12.1	21.3	-4.0	-27.6	-18.1	5.6	4.6	3.5	2.9	2.8	-0.1	-10.6
End of Month Content (kaf)	32.8	44.9	66.2	62.2	34.6	16.5	22.1	26.7	30.2	33.1	35.9	35.8	
End of Month Elevation (feet)	4765.1	4774.6	4788.0	4785.7	4766.6	4749.6	4755.4	4759.8	4762.9	4765.4	4767.7	4767.6	
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
St. Mary River Runoff (kaf)	19.9	89.6	122.9	70.5	29.8	18.5	16.4	11.0	7.8	7.2	6.1	8.7	408.4
Natural Flow at Boundary (kaf)	28.9	118.6	156.0	86.4	37.3	24.1	22.0	15.6	11.3	10.1	8.9	11.9	531.1
St. Mary Canal Diversion (cfs)	350	600	600	600	600	450	0	0	0	0	0	99	
St. Mary Canal Diversion (kaf)	20.8	36.9	35.7	36.9	36.9	26.8	0.0	0.0	0.0	0.0	0.0	6.1	200.1
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Fresno Reservoir	Initial Content		21,865										
	Elevation		2551.64		acre-feet feet								
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Milk River Runoff (kaf)	11.9	5.6	4.0	0.3	0.5	2.2	3.6	2.6	1.7	1.8	4.7	14.5	53.4
From St. Mary Canal (kaf)	9.4	31.4	30.3	29.5	29.5	22.8	0.0	0.0	0.0	0.0	0.0	0.0	152.9
Fresno Inflow (kaf)	21.3	37.0	34.3	29.8	30.0	25.0	3.6	2.6	1.7	1.8	4.7	14.5	206.3
Fresno Release (kaf)	2.4	32.8	46.5	59.6	24.3	14.4	3.1	2.6	2.5	2.5	3.2	2.5	196.4
Fresno Release (cfs)	40	533	781	969	395	242	50	44	41	41	58	41	
Net Content Change (kaf)	18.9	4.2	-12.2	-29.8	5.7	10.6	0.5	0.0	-0.8	-0.7	1.5	12.0	9.9
End of Month Content (kaf)	48.9	53.1	40.9	11.1	16.8	27.4	27.9	27.9	27.1	26.4	27.9	39.9	
End of Month Elevation (feet)	2564.2	2565.6	2561.1	2544.4	2548.5	2554.7	2555.0	2555.0	2554.6	2554.2	2555.0	2560.7	
Irrigation Allotment (ft/ac)	0.00	0.35	0.50	0.60	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Irrigation Delivery (kaf)	0.0	32.4	46.3	55.6	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	148.2
FBIIP Demand (kaf)	0.0	0.0	0.0	1.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0
Fresno to Dodson Gain (kaf)	13.0	7.6	9.8	2.0	0.6	1.6	2.0	0.0	0.0	0.0	0.0	17.4	54.0
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)	11.0	8.0	10.0	5.0	5.0	10.0	1.6	0.0	0.0	0.0	0.0	10.0	60.6
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Nelson Reservoir	Initial Content		58,786										
	Elevation		2216.54		acre-feet feet								
Delivery to Nelson (kaf)	9.9	7.2	9.0	4.5	4.5	9.0	1.4	0.0	0.0	0.0	0.0	9.0	54.5
Net Content Change (kaf)	8.1	-4.3	-6.7	-13.9	-1.5	7.2	-0.4	-1.8	-1.8	-1.8	-1.7	7.2	-11.4
End of Month Content (kaf)	78.7	74.4	67.7	53.8	52.3	59.5	59.1	57.3	55.5	53.7	52.0	59.2	
End of Month Elevation (feet)	2221.5	2220.5	2218.9	2215.2	2214.7	2216.7	2216.6	2216.1	2215.6	2215.1	2214.6	2216.7	
Total Release (kaf)	0.0	9.7	13.9	16.6	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.4

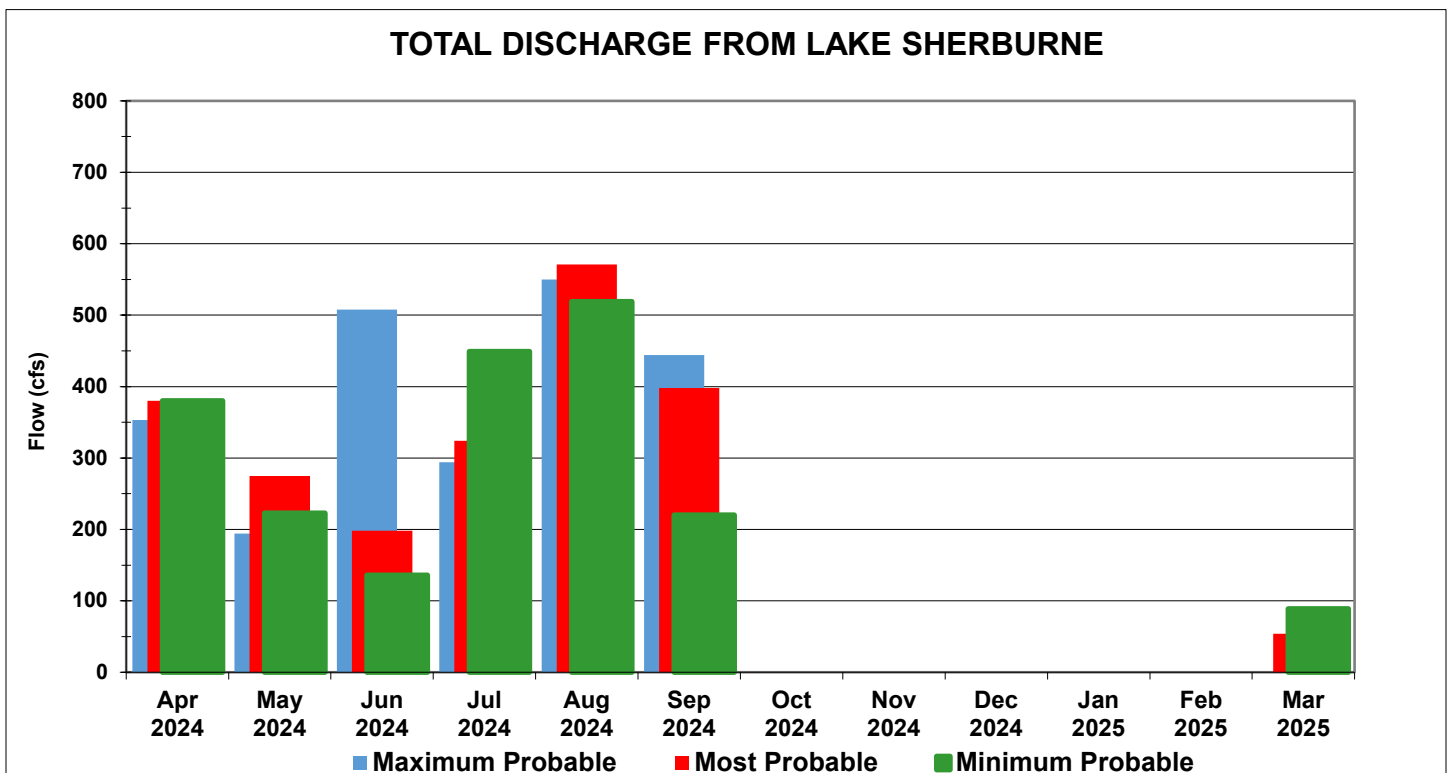
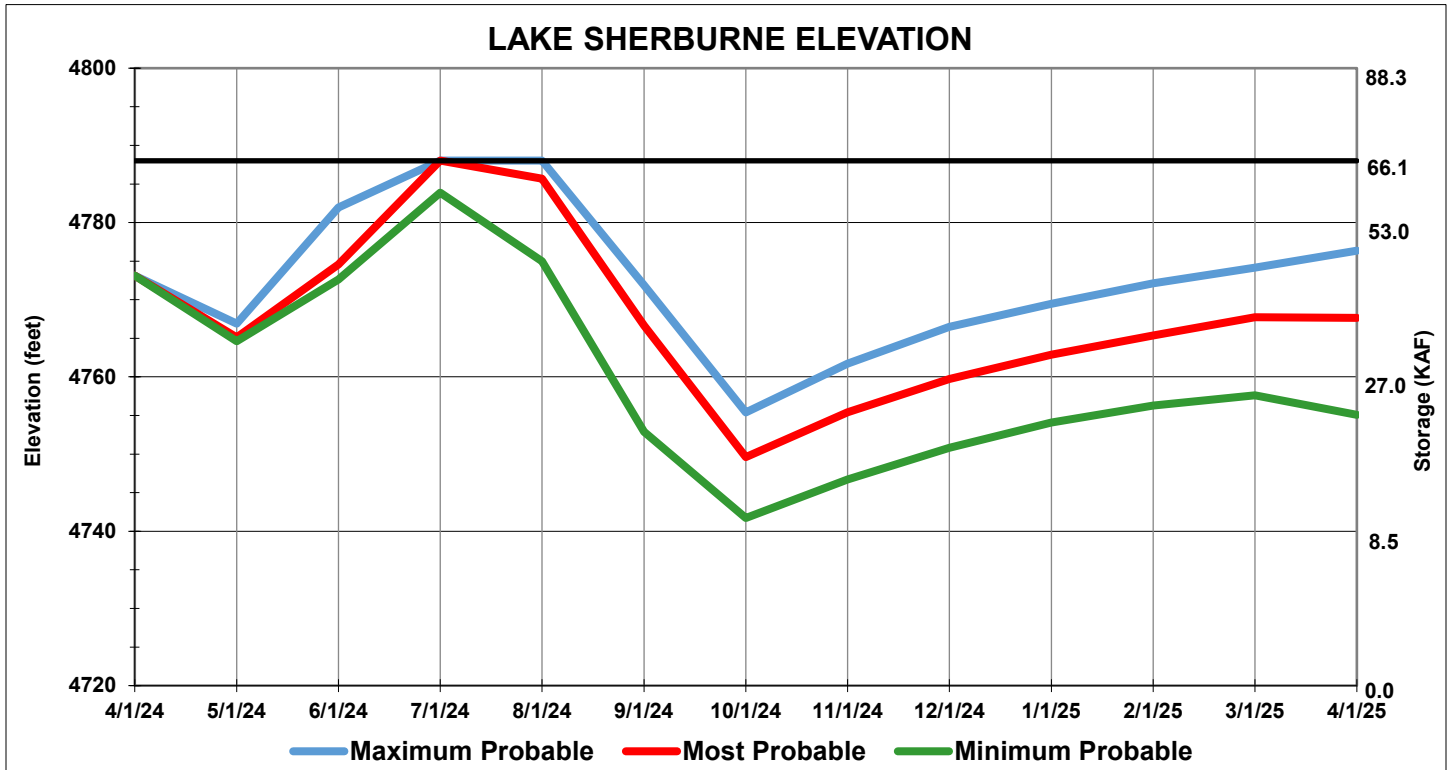
OPERATIONS OUTLOOK (April 1, 2024 through March 31, 2025)

Minimum Inflow Conditions													
Sherburne Reservoir	Initial Content	42,863 acre-feet											
	Elevation	4773.11 feet											
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Sherburne Inflow (kaf)	8.4	23.7	25.1	13.9	6.0	3.3	4.1	3.7	3.2	2.2	1.4	2.9	97.9
Sherburne Release (kaf)	22.6	13.7	8.1	27.6	31.9	13.1	0.0	0.0	0.0	0.0	0.0	5.5	122.5
Sherburne Release (cfs)	380	223	136	449	519	220	0	0	0	0	0	89	
Net Content Change (kaf)	-14.2	10.0	17.0	-13.7	-25.9	-9.8	4.1	3.7	3.2	2.2	1.4	-2.6	-24.6
End of Month Content (kaf)	32.2	42.2	59.2	45.5	19.6	9.8	13.9	17.6	20.8	23.0	24.4	21.8	
End of Month Elevation (feet)	4764.6	4772.6	4783.9	4775.0	4752.9	4741.7	4746.7	4750.8	4754.1	4756.3	4757.6	4755.1	
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
St. Mary River Runoff (kaf)	12.1	78.5	100.2	53.1	25.4	17.1	12.0	7.5	4.9	4.0	4.6	4.1	323.5
Natural Flow at Boundary (kaf)	20.5	102.2	125.3	67.0	31.4	20.4	16.1	11.2	8.1	6.2	6.0	7.0	421.4
St. Mary Canal Diversion (cfs)	350	600	600	600	550	250	0	0	0	0	0	99	
St. Mary Canal Diversion (kaf)	20.8	36.9	35.7	36.9	33.8	14.9	0.0	0.0	0.0	0.0	0.0	6.1	185.1
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Fresno Reservoir	Initial Content 21,865 acre-feet												
	Elevation 2551.64 feet												
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Milk River Runoff (kaf)	7.8	3.5	2.6	0.0	0.0	1.4	2.0	0.5	0.2	0.3	0.7	4.7	23.7
From St. Mary Canal (kaf)	9.4	29.5	28.6	24.0	25.3	11.9	0.0	0.0	0.0	0.0	0.0	0.0	128.7
Fresno Inflow (kaf)	17.2	33.0	31.2	24.0	25.3	13.3	2.0	0.5	0.2	0.3	0.7	4.7	152.4
Fresno Release (kaf)	2.4	37.1	46.3	42.7	10.0	8.3	2.5	2.4	2.5	2.5	2.2	2.5	161.4
Fresno Release (cfs)	40	603	778	694	163	139	41	40	41	41	40	41	
Net Content Change (kaf)	14.8	-4.1	-15.1	-18.7	15.3	5.0	-0.5	-1.9	-2.3	-2.2	-1.5	2.2	-9.0
End of Month Content (kaf)	44.8	40.7	25.6	6.9	22.2	27.2	26.7	24.8	22.5	20.3	18.8	21.0	
End of Month Elevation (feet)	2562.7	2561.0	2553.8	2540.7	2551.8	2554.6	2554.3	2553.3	2552.0	2550.7	2549.8	2551.1	
Irrigation Allotment (ft/ac)	0.00	0.40	0.50	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35
Irrigation Delivery (kaf)	0.0	37.1	46.3	41.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	125.1
FBIIP Demand (kaf)	0.0	0.0	0.0	1.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0
Fresno to Dodson Gain (kaf)	7.2	5.0	6.6	3.4	1.0	2.7	2.0	0.0	0.0	0.0	0.0	8.7	36.6
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)	7.2	5.0	5.0	3.0	5.0	5.0	2.0	0.0	0.0	0.0	0.0	5.0	37.2
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Nelson Reservoir	Initial Content 58,786 acre-feet												
	Elevation 2216.54 feet												
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Delivery to Nelson (kaf)	6.5	4.5	4.5	2.7	4.5	4.5	1.8	0.0	0.0	0.0	0.0	4.5	33.5
Net Content Change (kaf)	4.7	-8.3	-9.6	-11.2	2.7	2.7	0.0	-1.8	-1.8	-1.8	-1.7	2.7	-23.4
End of Month Content (kaf)	75.3	67.0	57.4	46.2	48.9	51.6	51.6	49.8	48.0	46.2	44.5	47.2	
End of Month Elevation (feet)	2220.7	2218.7	2216.2	2212.9	2213.7	2214.5	2214.5	2214.0	2213.4	2212.9	2212.3	2213.2	
Total Release (kaf)	0.0	11.0	12.3	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.4

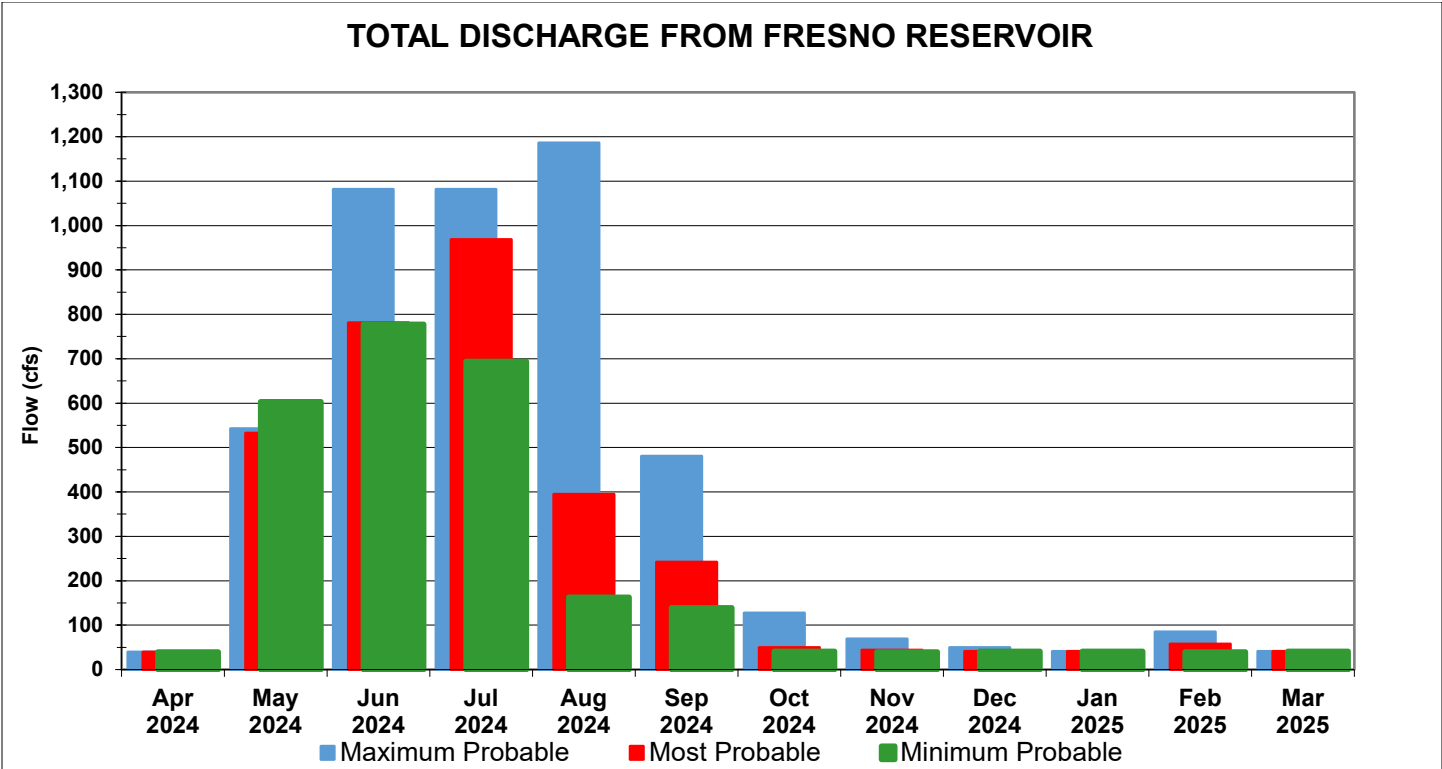
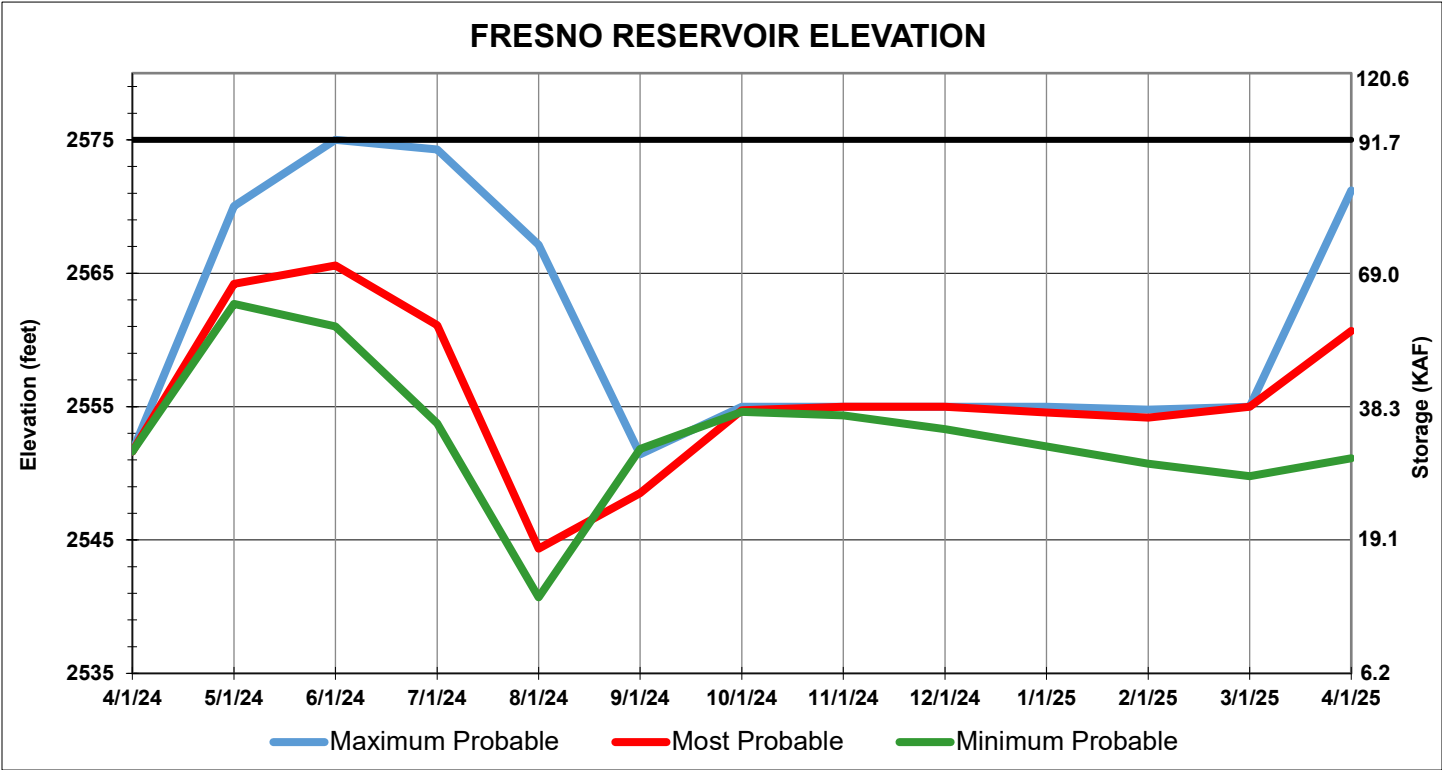
OPERATIONS OUTLOOK (April 1, 2024 through March 31, 2025)

Maximum Inflow Conditions													
Sherburne Reservoir	Initial Content		42,863										
	Elevation		4773.11										
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Sherburne Inflow (kaf)	9.5	33.1	40.3	18.1	8.8	7.3	6.8	5.5	3.7	3.4	2.8	3.2	142.5
Sherburne Release (kaf)	21.0	11.9	30.2	18.1	33.8	26.4	0.0	0.0	0.0	0.0	0.0	0.0	141.4
Sherburne Release (cfs)	353	194	508	294	550	444	0	0	0	0	0	0	
Net Content Change (kaf)	-11.5	21.2	10.1	0.0	-25.0	-19.1	6.8	5.5	3.7	3.4	2.8	3.2	1.1
End of Month Content (kaf)	34.9	56.1	66.2	66.2	41.2	22.1	28.9	34.4	38.1	41.5	44.3	47.5	
End of Month Elevation (feet)	4766.9	4782.0	4788.0	4788.0	4771.9	4755.4	4761.7	4766.5	4769.5	4772.1	4774.1	4776.4	
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
St. Mary River Runoff (kaf)	27.8	103.6	148.5	89.1	35.6	22.1	22.8	16.4	10.7	15.8	14.4	21.7	528.5
Natural Flow at Boundary (kaf)	37.3	136.7	188.8	107.2	44.4	29.4	29.6	21.9	14.4	19.2	17.2	24.9	671.0
St. Mary Canal Diversion (cfs)	350	600	600	600	600	501	0	0	0	0	0	99	
St. Mary Canal Diversion (kaf)	20.8	36.9	35.7	36.9	36.9	29.8	0.0	0.0	0.0	0.0	0.0	6.1	203.1
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Fresno Reservoir	Initial Content		21,865										
	Elevation		2551.64										
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Milk River Runoff (kaf)	32.1	22.8	30.5	5.4	2.8	8.2	7.9	4.1	3.1	2.1	5.1	48.4	172.5
From St. Mary Canal (kaf)	9.4	33.2	30.3	31.4	33.2	26.8	0.0	0.0	0.0	0.0	0.0	0.0	164.3
Fresno Inflow (kaf)	41.5	56.0	60.8	36.8	36.0	35.0	7.9	4.1	3.1	2.1	5.1	48.4	336.8
Fresno Release (kaf)	2.4	33.4	64.4	66.5	72.9	28.6	7.9	4.1	3.1	2.5	4.7	2.5	293.0
Fresno Release (cfs)	40	543	1082	1082	1186	481	128	69	50	41	85	41	
Net Content Change (kaf)	39.1	22.6	-3.6	-29.7	-36.9	6.4	0.0	0.0	0.0	-0.4	0.4	45.9	43.8
End of Month Content (kaf)	69.1	91.7	88.1	58.4	21.5	27.9	27.9	27.9	27.9	27.5	27.9	73.8	
End of Month Elevation (feet)	2570.0	2575.0	2574.3	2567.1	2551.4	2555.0	2555.0	2555.0	2555.0	2554.8	2555.0	2571.2	
Irrigation Allotment (ft/ac)	0.00	0.25	0.50	0.65	0.70	0.20	0.00	0.00	0.00	0.00	0.00	0.00	2.30
Irrigation Delivery (kaf)	0.0	23.2	46.3	60.2	64.9	18.5	0.0	0.0	0.0	0.0	0.0	0.0	213.1
FBIIIP Demand (kaf)	0.0	0.0	0.0	1.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0
Fresno to Dodson Gain (kaf)	23.7	16.4	21.3	12.0	3.0	7.0	5.0	0.0	0.0	0.0	0.0	22.6	111.0
Bowdoin Demand (kaf)	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Transfer to Nelson (kaf)	11.0	10.0	10.0	10.0	5.0	10.0	5.0	0.0	0.0	0.0	0.0	10.0	71.0
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Nelson Reservoir	Initial Content		58,786										
	Elevation		2216.54										
Delivery to Nelson (kaf)	9.9	9.0	9.0	9.0	4.5	9.0	4.5	0.0	0.0	0.0	0.0	9.0	63.9
Net Content Change (kaf)	8.1	0.3	-2.0	-4.7	-16.7	2.7	2.7	-1.8	-1.8	-1.8	-1.7	7.2	-9.5
End of Month Content (kaf)	78.7	79.0	77.0	72.3	55.6	58.3	61.0	59.2	57.4	55.6	53.9	61.1	
End of Month Elevation (feet)	2221.5	2221.6	2221.2	2220.0	2215.7	2216.4	2217.1	2216.7	2216.2	2215.7	2215.2	2217.2	
Total Release (kaf)	0.0	6.9	9.2	11.9	19.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0	51.9

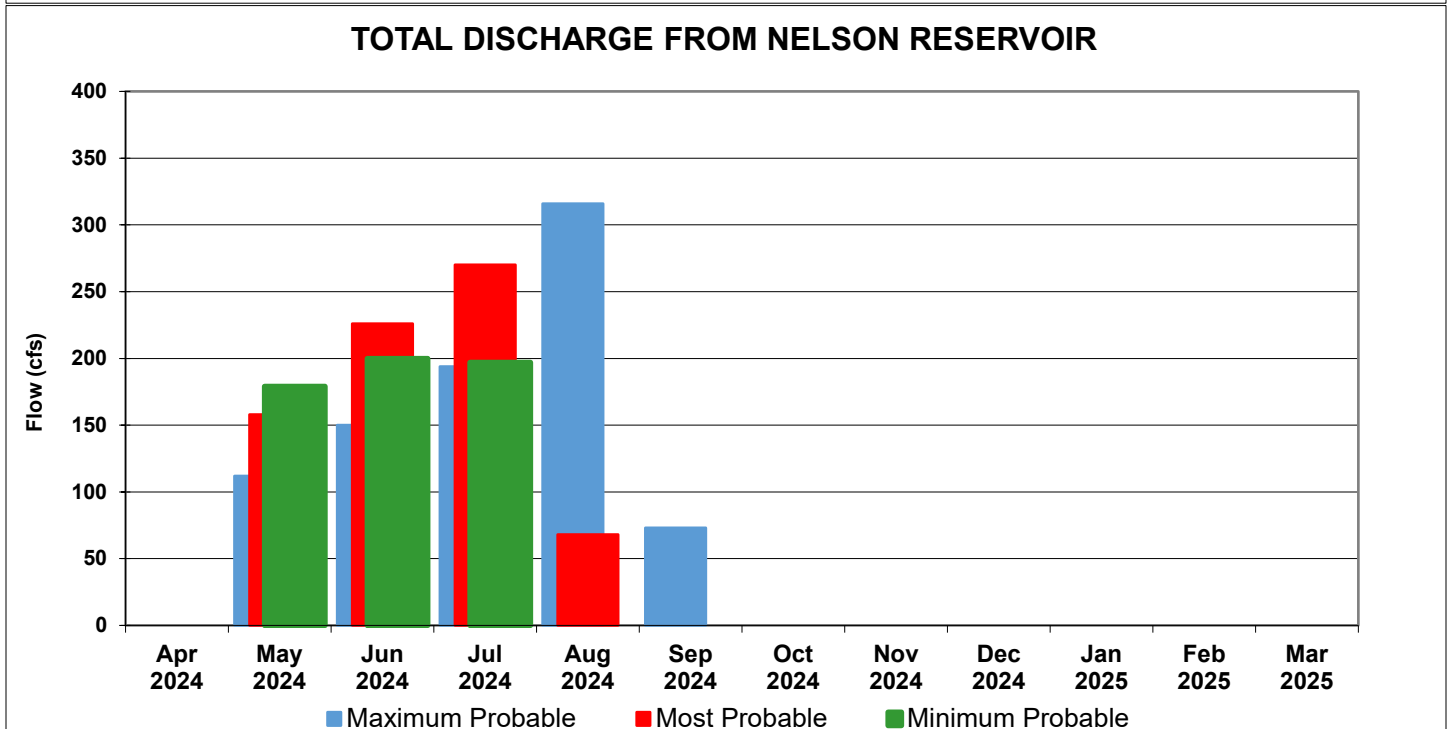
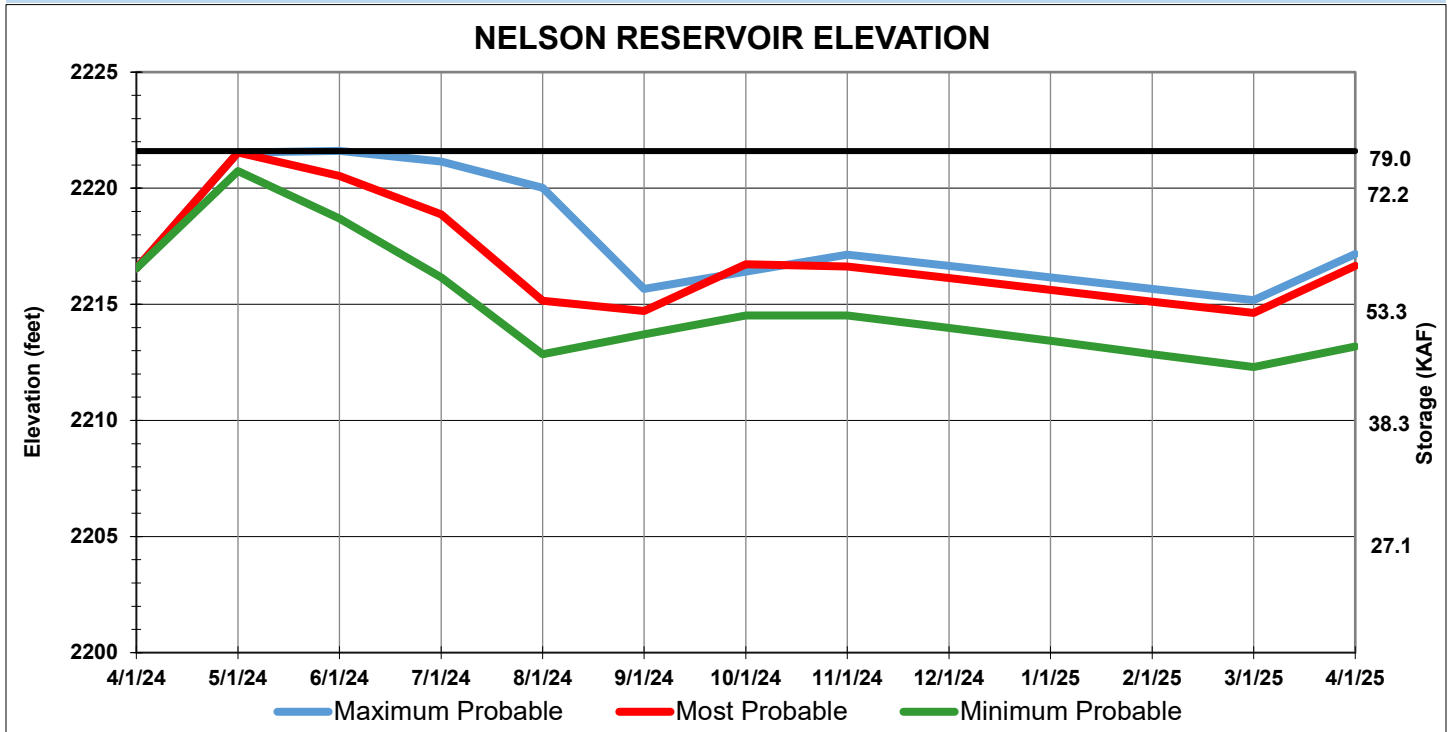
OPERATIONS OUTLOOK: LAKE SHERBURNE



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