

Libby : March Runoff Forecast & Flood Risk Management Calculation

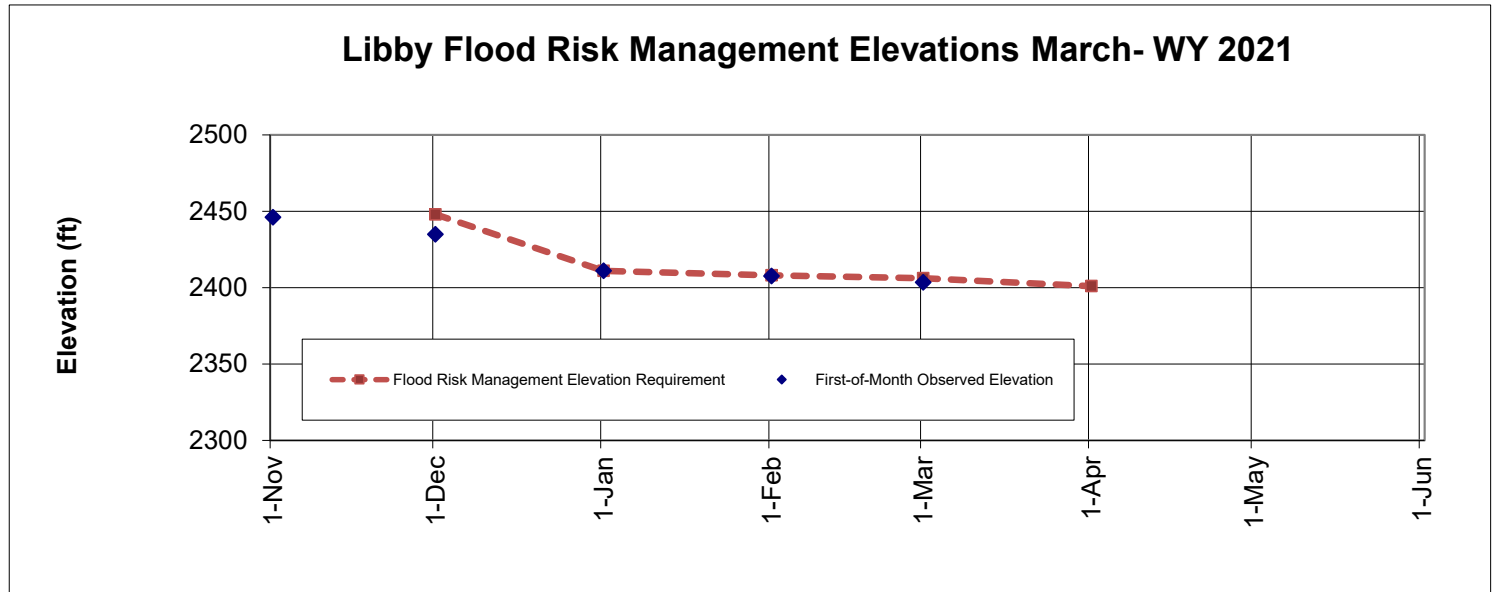
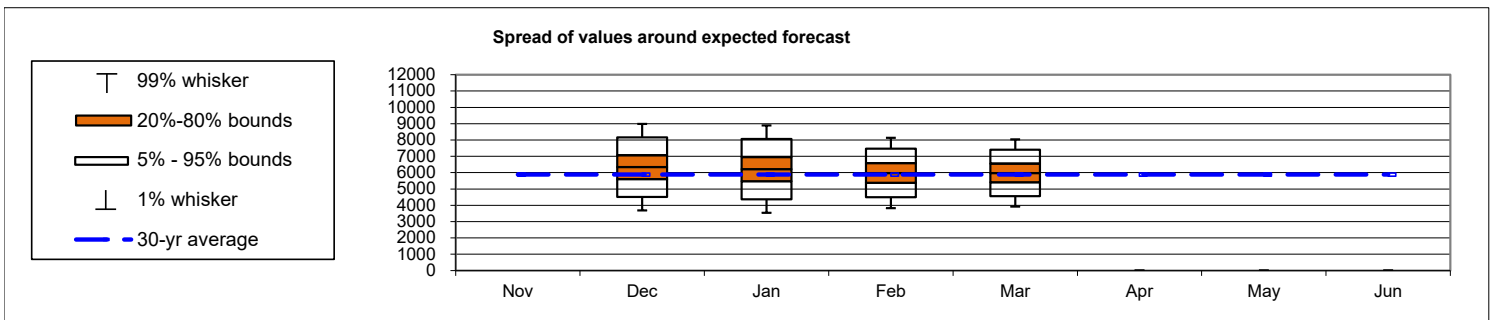
WY 2021

Runoff Forecast	March	1981-2010 Average	1981 - 2010 Percent of Average	1929-2008 Average	1929 - 2008 Percent of Average
Most Probable Runoff Volume: Apr-Aug (kaf)	5980	5885	102%	6282	95%
Most Probable Runoff Volume: Apr-Jul (kaf)	5428	5342	102%	5720	95%
Most Probable Runoff Volume: May-Jul (kaf)	4898	4821	102%	5199	94%

Flood Risk Management	March
31-March Flood Risk Management Space (kaf)	2349
31-March Flood Risk Management Elevation (ft)	2401.0

Reservoir/Forecast Data	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast (kaf)		6336	6215	5979	5980			
First-of-Month Elev (ft)	2446.1	2434.8	2410.9	2407.6	2403.4			

Seasonal FRM Requirements	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr
Flood Risk Management Space (kaf)	500	2000	2105	2173	2349	
Flood Risk Management Elevation (ft)	2448.0	2411.0	2408.1	2406.2	2401.0	



Notes:

1. The given forecast is the official Corps of Engineers forecast for Libby. If you have any questions please contact Jon Moen (206) 764-3561, Justin Lawrence (206) 764-3699, Logan Osgood-Zimmerman (206) 764-6928, or Kevin Shaffer (206) 764-3660.
2. If a prior month's forecast as published in this document is different than what was originally published in the issue month, then the earlier forecast has been adjusted to reflect updated values for precipitation or streamflow.
3. Cranbrook A gage data was intermittent during December through February. Nearby Cranbrook Airport Auto gage data was used instead.

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## Apr-Aug Runoff Forecast Calculation:

Variable	Month(s)	Units	Observed Value A	Percent of Average	Regression Coefficient	Marginal Runoff (KAF) =A*B
SOI	ΣJun:Jul					
Eureka RS, MT	ΣOct:Feb Prcp	inches	4.33	87%	65.9	285.2
West Glacier, MT	ΣOct:Feb Prcp	inches	16.46	116%	28.5	469.3
Cranbrook A, BC	ΣOct:Feb Prcp	millimeters	113.40	84%	2.7	309.6
Fernie, BC	ΣOct:Feb Prcp	millimeters	548.84	96%	0.6	345.8
Hawkins Lake, MT	1-Mar SWE	inches	18.90	93%	24.3	459.8
Stahl Peak, MT	1-Mar SWE	inches	24.40	85%	19.1	466.3
East Creek, BC	1-Mar SWE	millimeters	848.00	120%	0.7	551.2
Moyie Mountain, BC	1-Mar SWE	millimeters	323.00	91%	1.3	410.2
Sunshine Village, AB	1-Mar SWE	millimeters	521.64	112%	1.3	657.3
Akamina Pass, AB	1-Mar SWE	millimeters	384.20	98%	1.0	399.6
South Racehorse Creek, AB	1-Mar SWE	millimeters	345.30	100%	1.4	483.4
Intercept			1		1142.0	1142.0
March Forecast	April - August	kaf				5979.6

## Data used in Libby Water Supply Forecast

WY 2021

Climate Data	Jun-20	Jul-20
SOI	-0.40	0.40

Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Eureka RS, MT (inch)	1.77	0.92	0.98	0.37	0.29			
West Glacier, MT (inch)	4.52	4.32	2.34	2.92	2.36			
Cranbrook A, BC (mm)	27.60	21.90	26.30	34.20	3.40			
Fernie, BC (mm)	118.80	158.00	106.68	109.73	55.63			
Snow Water Equiv	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
Hawkins Lake, MT (inch)				16	19			
Stahl Peak, MT (inch)			16	21	24			
East Creek, BC (mm)				715	848			
Moyie Mountain, BC (mm)			166	235	323			
Sunshine Village, AB (mm)			322	422	522			
Akamina Pass, AB (mm)				316	384			
South Racehorse Creek, AB (mm)				263	345			
Streamflow	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Libby Inflow Volume (kaf)			182.3	128.4				
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
Libby FOM Elev (feet)	2446.1	2434.8	2410.9	2407.6	2403.4			

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