

Libby: May Runoff Forecast & Flood Risk Management Calculation

WY 2020

**Runoff Forecast and Flood Risk Management**

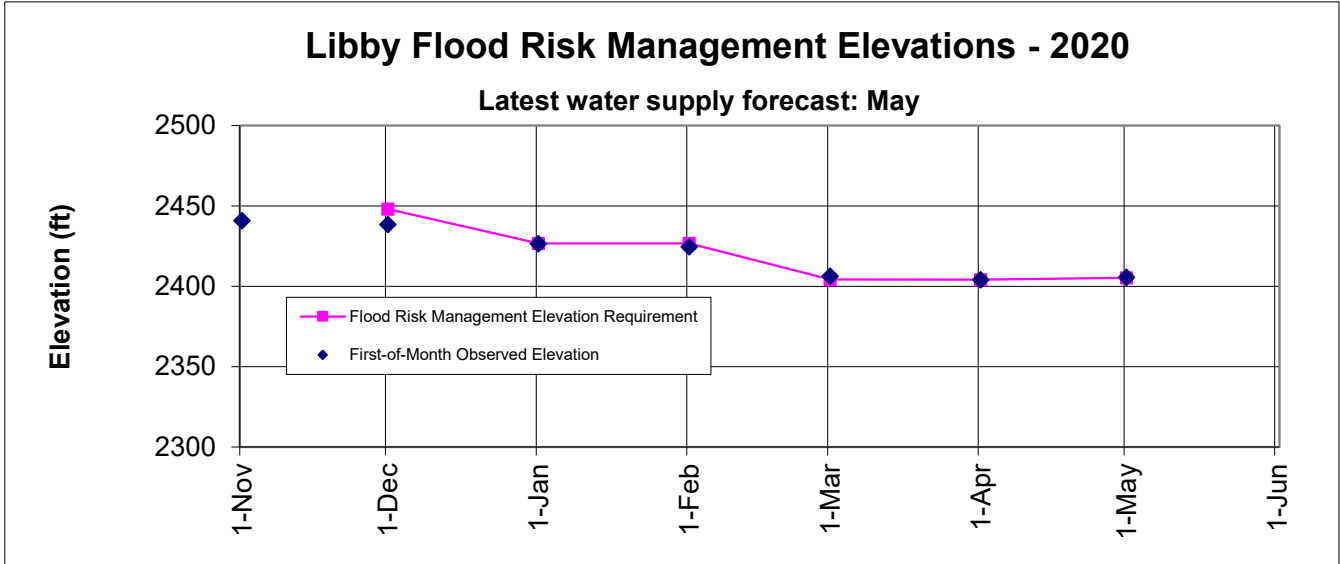
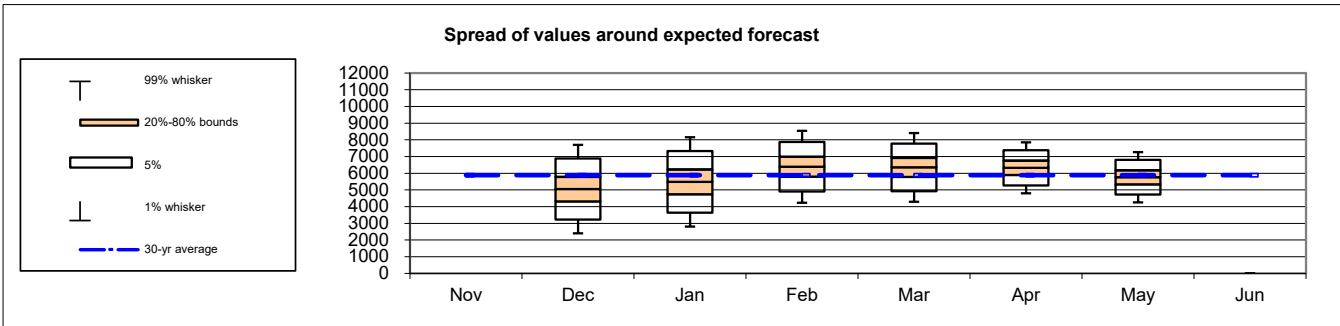
<b>Most Probable Runoff Volume:</b>	<b>Apr-Aug</b>	<b>5759</b>	<b>KAF</b>
	<b>Apr-Jul</b>	<b>5211</b>	<b>KAF</b>
	<b>May-Jul</b>	<b>4867</b>	<b>KAF</b>

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	98%	6282	92%
5342	98%	5720	91%
4821	101%	5199	94%

**Seasonal Flood Risk Management** VARQ Flood Risk Management Implemented

Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>Apr-Aug Runoff Forecast</b>	2440.8	5050	5481	6386	6349	6324	5759	
<b>First-of-Month Elev</b>	2440.8	2438.4	2426.4	2424.6	2406.2	2404.0	2405.5	

Date >>	30-Nov	31-Dec	31-Jan	29-Feb	31-Mar	30-Apr	
<b>FRM Space</b>	500	1400	1400	2240	2243	2202	
<b>FRM Elevation</b>	2448.0	2426.7	2426.7	2404.2	2404.1	2405.3	



- 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, Alex Nathan (206) 316-3155, 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. The Akamina Pass snow station was destroyed in a fire in Sept. 2017. Akamina Pass SWE was estimated based on a regression equation and observed values at nearby sites Grave Creek, Poorman Creek, Hand Creek, and Mount Odium.

## Libby: May Runoff Forecast & Flood Risk Management Calculation

Apr-Aug Runoff Forecast Calculation:						
Variable	Month(s)	Units	Observed Value	Percent of Average	Regression Coefficient	Marginal Runoff (KAF)
			A		B	=A*B
SOI	ΣJun:Jul					
Eureka RS, MT	ΣOct:Apr Prcp	inches	5.32	78%	57.5	305.6
West Glacier, MT	ΣOct:Apr Prcp	inches	16.70	90%	28.0	468.3
Cranbrook A, BC	ΣOct:Apr Prcp	millimeters	122.50	66%	2.8	343.0
Fernie, BC	ΣOct:Apr Prcp	millimeters	763.40	101%	0.6	465.7
Hawkins Lake, MT	1-May SWE	inches	25.10	95%	17.3	434.2
Stahl Peak, MT	1-May SWE	inches	39.90	106%	16.7	667.9
East Creek, BC	1-May SWE	millimeters	1057.00	115%	0.6	602.5
Moyie Mountain, BC	1-May SWE	millimeters	500.00	138%	0.9	455.0
Sunshine Village, AB	1-May SWE	millimeters	623.70	101%	1.3	785.9
Akamina Pass, AB	1-May SWE	millimeters	328.00	97%	0.6	180.4
South Racehorse Creek, AB	1-May SWE	millimeters	359.50	98%	0.8	298.4
Intercept			1		408.0	408.0
	Forecast May-August Inflow (KAF)				Σ	5414.9
	Observed April Inflow (KAF)					343.8
	1-May Forecast, April-August Inflow (KAF)				Σ	5758.6

### Data used in Libby Water Supply Forecast

WY 2020

Climate Data	SOI	Jun-19	Jul-19								
		-0.50	-0.40								
Precipitation Data		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units	
Eureka RS, MT		0.75	1.23	0.46	1.01	0.47	0.47	0.93		inch	
West Glacier, MT		2.08	1.65	2.69	5.81	1.99	1.26	1.22		inch	
Cranbrook A, BC		16.60	14.30	28.60	22.90	8.20	18.00	13.90		mm	
Fernie, BC		103.00	35.00	216.00	185.00	97.00	82.00	45.40		mm	
Snow Water Equiv		1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units			
Hawkins Lake, MT			19	22	26	25		inch			
Stahl Peak, MT			15	29	34	40	40	inch			
East Creek, BC				778	893	1050	1057	mm			
Moyie Mountain, BC			193	320	404	526	500	mm			
Sunshine Village, AB			273	408	512	614	624	mm			
Akamina Pass, AB				363	444	527	328	mm			
South Racehorse Creek, AB				289	358	468	360	mm			
Streamflow		Jan	Feb	Mar	Apr	May	Jun	Units			
Libby Inflow Volume			172.2	209.1	171.0	343.8			KAF		
Reservoir Elevation		1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units	
Libby FOM Elev		2440.8	2438.4	2426.4	2424.6	2406.2	2404.0	2405.5		feet	

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