

Libby : March Runoff Forecast & Flood Risk Management Calculation

WY 2020

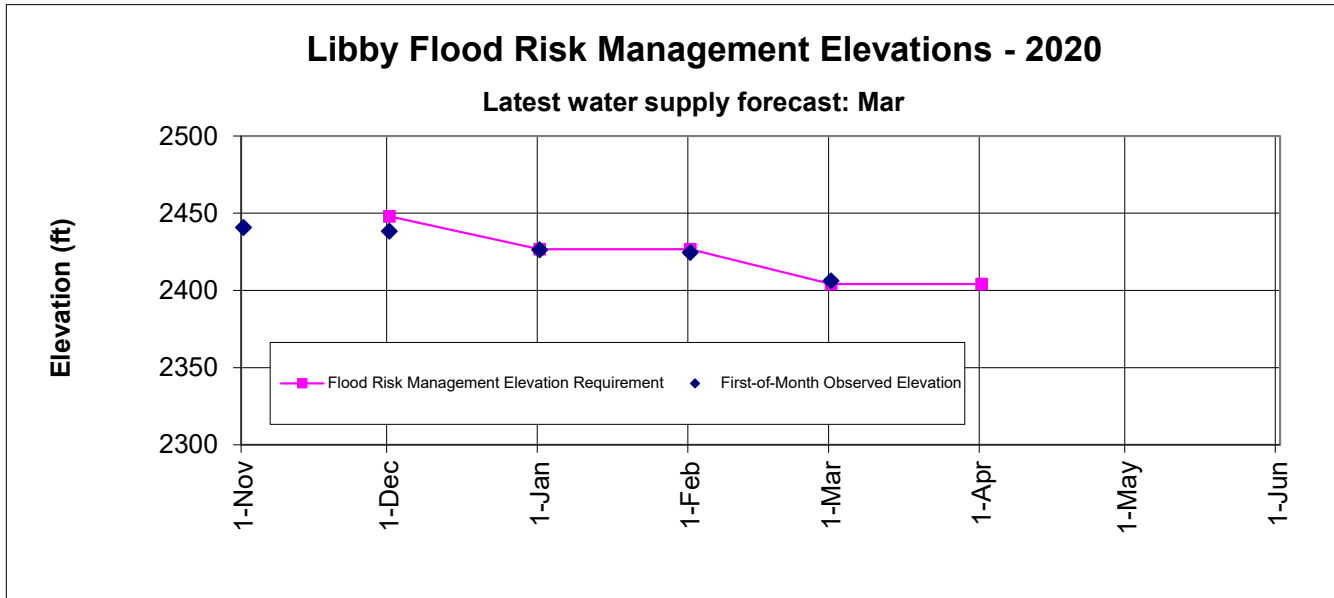
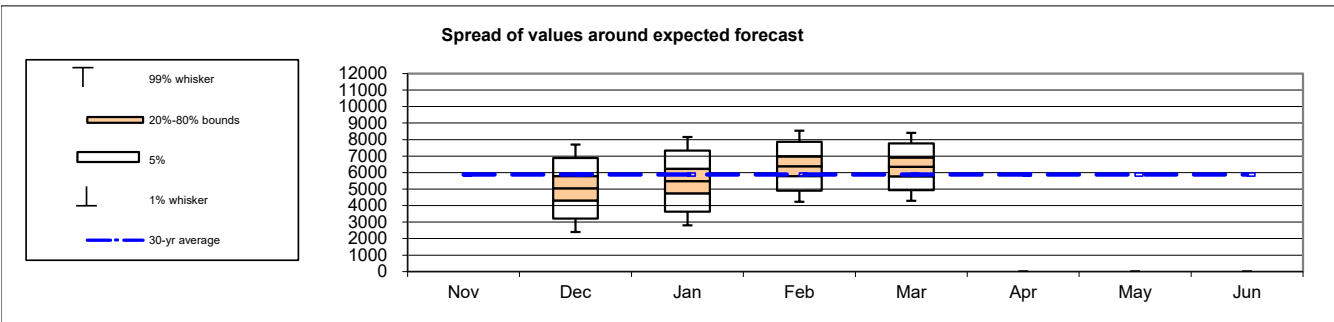
Runoff Forecast and Flood Risk Management

Most Probable Runoff Volume:	Apr-Aug	6349	KAF
	Apr-Jul	5763	KAF
	May-Jul	5201	KAF
31-Mar Flood Risk Management Space		2243	KAF
31-Mar Flood Risk Management Elevation		2404.1	ft

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	108%	6282	101%
5342	108%	5720	101%
4821	108%	5199	100%

Seasonal Flood Risk Management		VARQ Flood Risk Management Implemented						
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast		5050	5481	6386	6349			
First-of-Month Elev	2440.8	2438.4	2426.4	2424.6	2406.2			

Date >>	30-Nov	31-Dec	31-Jan	29-Feb	31-Mar	30-Apr
Flood Risk Management Space	500	1400	1400	2240	2243	
Flood Risk Management Elevation	2448.0	2426.7	2426.7	2404.2	2404.1	



- 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, Lost Creek South, and Mount Odlum.

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Apr-Aug Runoff Forecast Calculation:						
Variable	Month(s)	Units	Observed Value	Percent of Average	Regression Coefficient	Marginal Runoff (KAF)
			A		B	=A*B
SOI	∑Jun:Jul					
Eureka RS, MT	∑Oct:Feb Prcp	inches	3.92	79%	65.9	258.2
West Glacier, MT	∑Oct:Feb Prcp	inches	14.22	100%	28.5	405.4
Cranbrook A, BC	∑Oct:Feb Prcp	millimeters	90.60	67%	2.7	247.3
Fernie, BC	∑Oct:Feb Prcp	millimeters	636.00	111%	0.6	400.7
Hawkins Lake, MT	1-Mar SWE	inches	22.20	110%	24.3	540.1
Stahl Peak, MT	1-Mar SWE	inches	34.20	120%	19.1	653.6
East Creek, BC	1-Mar SWE	millimeters	893.00	126%	0.7	580.5
Moyie Mountain, BC	1-Mar SWE	millimeters	404.00	114%	1.3	513.1
Sunshine Village, AB	1-Mar SWE	millimeters	512.19	110%	1.3	645.4
Akamina Pass, AB	1-Mar SWE	millimeters	444.48	114%	1.0	462.3
South Racehorse Creek, AB	1-Mar SWE	millimeters	357.59	103%	1.4	500.6
Intercept			1		1142.0	1142.0
1-Mar Forecast (KAF)					∑	6349.1

Data used in Libby Water Supply Forecast

WY 2020

Climate Data					Jun-19	Jul-19				
SOI					-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				inch
West Glacier, MT		2.08	1.65	2.69	5.81	1.99				inch
Cranbrook A, BC		16.60	14.30	28.60	22.90	8.20				mm
Fernie, BC		103.00	35.00	216.00	185.00	97.00				mm
Snow Water Equiv				1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Hawkins Lake, MT					19	22				inch
Stahl Peak, MT				15	29	34				inch
East Creek, BC					778	893				mm
Moyie Mountain, BC				193	320	404				mm
Sunshine Village, AB				273	408	512				mm
Akamina Pass, AB					363	444				mm
South Racehorse Creek, AB					289	358				mm
Streamflow				Jan	Feb	Mar	Apr	May	Jun	Units
Libby Inflow Volume				172.2	209.1					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				feet

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