

Libby: May Runoff Forecast & Flood Risk Management Calculation

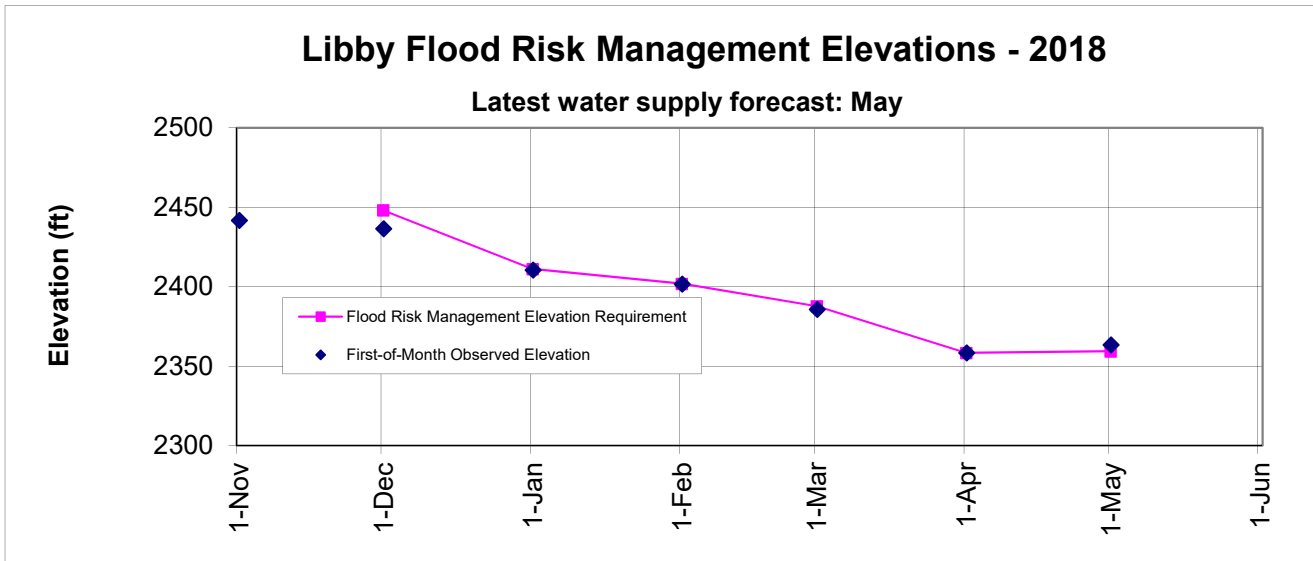
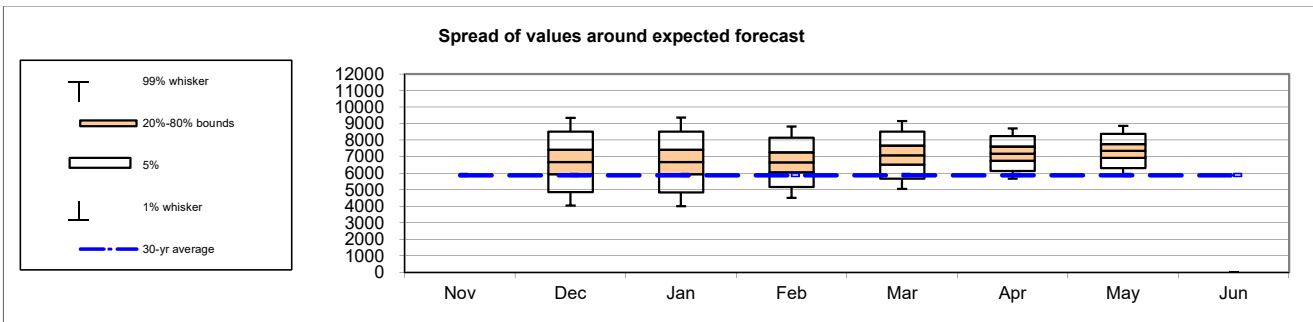
WY 2018

Runoff Forecast and Flood Risk Management			
Most Probable Runoff Volume:	Apr-Aug	7356	KAF
	Apr-Jul	6658	KAF
	May-Jul	6199	KAF

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	125%	6282	117%
5342	125%	5720	116%
4821	129%	5199	119%

Seasonal Flood Risk Management		VARQ Flood Risk Management Implemented						
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast		6687	6681	6668	7096	7189	7356	
First-of-Month Elev	2441.8	2436.5	2410.6	2401.8	2385.9	2358.4	2363.5	

Date >>	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr	
FRM Space	500	2000	2322	2762	3558	3533	
FRM Elevation	2448.0	2411.0	2401.8	2387.7	2358.3	2359.3	



Notes:

1. The given forecast is the official Corps of Engineers forecast for Libby. If you have any questions please contact Logan Osgood-Zimmerman (206) 764-6928, Jon Moen (206) 764-3561, or the general Water Management line (206) 764-3584.
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.

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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	ΣJun:Jul					
Eureka RS, MT	ΣOct:Apr Prcp	inches	10.39	153%	57.5	596.9
West Glacier, MT	ΣOct:Apr Prcp	inches	25.30	137%	28.0	709.4
Cranbrook A, BC	ΣOct:Apr Prcp	millimeters	263.10	143%	2.8	736.7
Fernie, BC	ΣOct:Apr Prcp	millimeters	868.80	114%	0.6	530.0
Hawkins Lake, MT	1-May SWE	inches	31.60	120%	17.3	546.7
Stahl Creek, MT	1-May SWE	inches	51.60	138%	16.7	863.8
East Creek, BC	1-May SWE	millimeters	1033.00	112%	0.6	588.8
Moyie Mountain, BC	1-May SWE	millimeters	537.00	148%	0.9	488.7
Sunshine Village, AB	1-May SWE	millimeters	652.10	106%	1.3	821.6
Akamina Pass, AB	1-May SWE	millimeters	529.10	157%	0.6	291.0
South Racehorse Creek, AB	1-May SWE	millimeters	379.50	104%	0.8	315.0
Intercept			1		408.0	408.0
	Forecast May-August Inflow (KAF)				Σ	6896.5
	Observed April Inflow (KAF)					459.4
	1-May Forecast, April-August Inflow (KAF)				Σ	7355.9

Data used in Libby Water Supply Forecast

WY 2018

Climate Data				Jun-17	Jul-17				
SOI				-0.40	0.80				
Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units
Eureka RS, MT	0.87	1.76	2.33	0.84	1.35	1.01	2.23		inch
West Glacier, MT	3.10	4.57	4.23	4.18	5.02	1.73	2.47		inch
Cranbrook A, BC	25.00	63.60	47.00	29.80	27.20	26.40	44.10		mm
Fernie, BC	132.00	193.00	77.00	180.00	84.80	104.00	98.00		mm
Snow Water Equiv			1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Hawkins Lake, MT				18	23	29	32		inch
Stahl Creek, MT			15	26	35	43	52		inch
East Creek, BC				659	803	905	1033		mm
Moyie Mountain, BC			194	318	429	518	537		mm
Sunshine Village, AB			284	407	511	609	652		mm
Akamina Pass, AB				362	479	598	529		mm
South Racehorse Creek, AB				240	356	445	380		mm
Streamflow			Jan	Feb	Mar	Apr	May	Jun	Units
Libby Inflow Volume			205.1	166.2	214.4	459.4			KAF
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Libby FOM Elev	2441.8	2436.5	2410.6	2401.8	2385.9	2358.4	2363.5		feet

William D. Proctor, P.E.
 Approving Official
 Ch., Hydrologic Engineering and Power Branch
 Northwestern Division

Logan Osgood-Zimmerman, P.E.
 Upper Columbia Senior Water Manager
 Seattle District