

Libby : February Runoff Forecast & Flood Risk Management Calcul

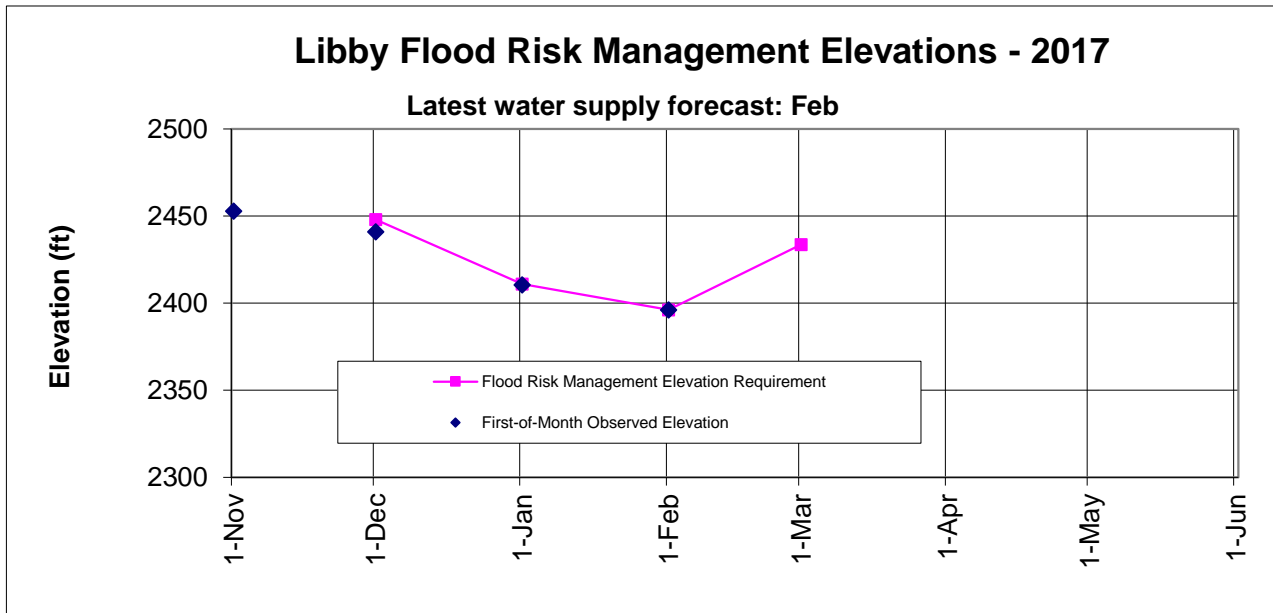
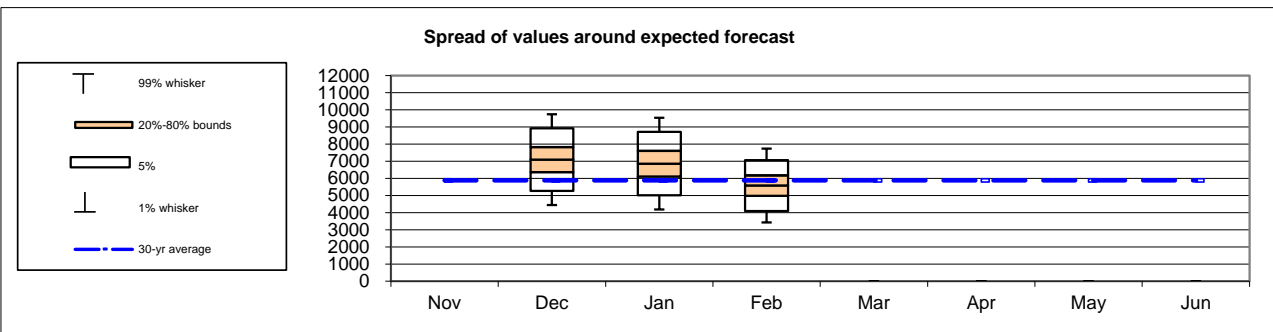
WY 2017

Runoff Forecast and Flood Risk Management

Most Probable Runoff Volume:	Apr-Aug	5583	KAF
	Apr-Jul	5068	KAF
	May-Jul	4573	KAF
28 Feb Flood Risk Management Space		1116	KAF
28 Feb Flood Risk Management Elevation		2433.7	ft

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	95%	6282	89%
5342	95%	5720	89%
4821	95%	5199	89%

Seasonal Flood Risk Management		VARQ Flood Risk Management Implemented						
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast		7093	6861	5583				
First-of-Month Elev	2452.9	2440.9	2410.5	2396.2				
Date >>	30-Nov	31-Dec	31-Jan	28-Feb	15-Mar	31-Mar	15-Apr	30-Apr
Flood Risk Management Space	500	2000	2083	1116				
Flood Risk Management Elevation	2448.0	2411.0	2396.2	2433.7				



- Notes:
1. The given forecast is the official Corps of Engineers forecast for Libby. If you have any questions please contact Joel Fenolio (206) 764-6683, Kristy Riley (206) 316-3947, Kevin Shaffer (206) 764-3660, Logan Osgood-Jacobs (206) 764-6928, or Kristian Mickelson (206) 764-6927.
 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. October Precip capped at Mean plus 2 standard deviations. A memo to NWD summarizes the methodology used.
 4. Due to missing data, South Racecourse Creek SWE was estimated using a principal components regression with surrounding gages that

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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:Jan Prcp	inches	5.51	128%	78.5	432.2
West Glacier, MT	ΣOct:Jan Prcp	inches	12.21	99%	31.0	377.8
Cranbrook A, BC	ΣOct:Jan Prcp	millimeters	138.53	120%	2.8	393.4
Fernie, BC	ΣOct:Jan Prcp	millimeters	504.07	102%	0.7	362.9
Hawkins Lake, MT	1-Feb SWE	inches	12.10	74%	30.6	370.3
Stahl Creek, MT	1-Feb SWE	inches	22.10	94%	23.0	508.1
East Creek, BC	1-Feb SWE	millimeters	527.00	86%	0.8	395.3
Moyie Mountain, BC	1-Feb SWE	millimeters	221.00	77%	1.5	327.1
Sunshine Village, AB	1-Feb SWE	millimeters	388.00	100%	1.5	570.4
Akamina Pass, AB	1-Feb SWE	millimeters	188.00	59%	1.3	238.8
South Racehorse Creek, AB	1-Feb SWE	millimeters	205.90	73%	1.5	315.0
Intercept			1		1291.5	1291.5
	1-Feb Forecast (KAF)				Σ	5582.6

Data used in Libby Water Supply Forecast

WY 2017

Climate Data				Jun-16	Jul-16				
SOI				0.60	0.40				
Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units
Eureka RS, MT	2.34	1.07	1.53	0.57					inch
West Glacier, MT	5.91	2.71	2.27	1.32					inch
Cranbrook A, BC	54.93	20.20	46.60	16.80					mm
Fernie, BC	238.07	157.00	76.00	33.00					mm
Snow Water Equiv			1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Hawkins Lake, MT				12					inch
Stahl Creek, MT			21	22					inch
East Creek, BC				527					mm
Moyie Mountain, BC			171	221					mm
Sunshine Village, AB			281	388					mm
Akamina Pass, AB				188					mm
South Racehorse Creek, AB				206					mm
Streamflow			Jan	Feb	Mar	Apr	May	Jun	Units
Libby Inflow Volume			227.9						KAF
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Libby FOM Elev	2452.9	2440.9	2410.5	2396.2					feet

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