

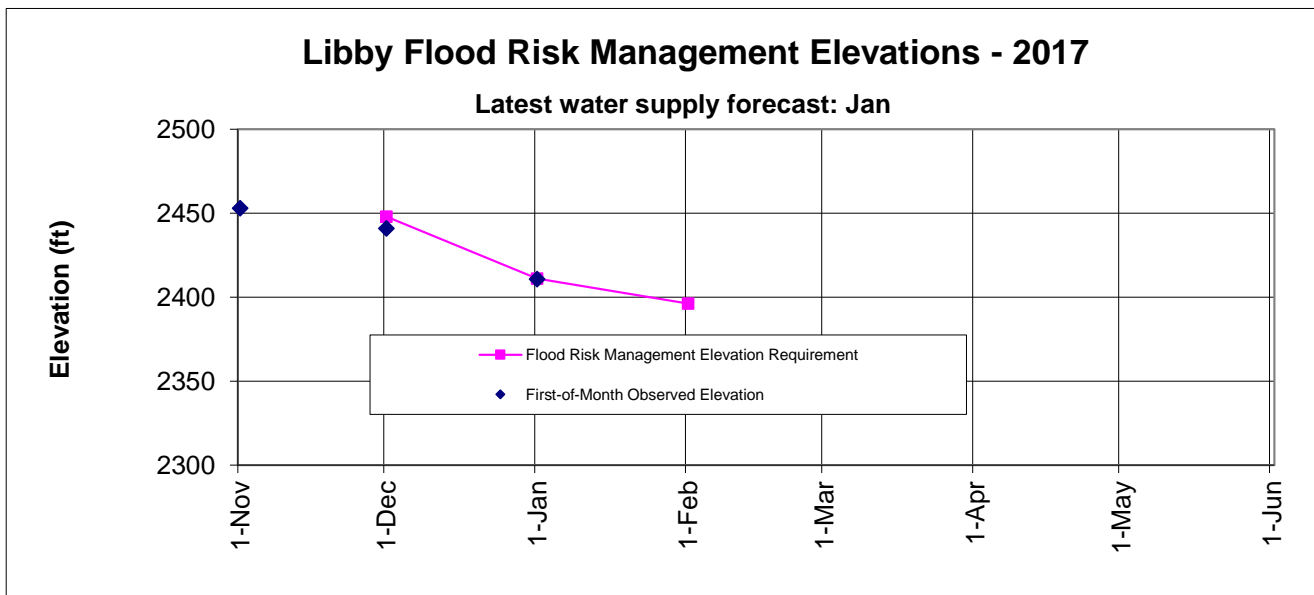
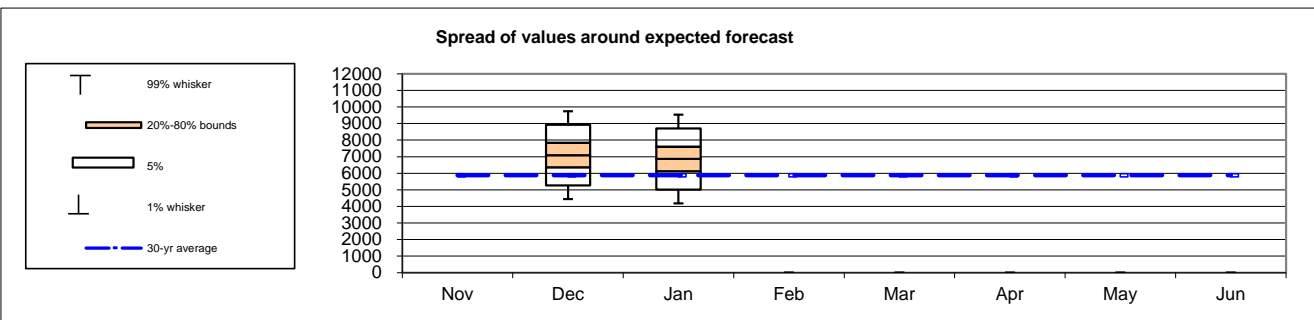
Libby : January Runoff Forecast & Flood Risk Management Calculation

WY 2017

Runoff Forecast and Flood Risk Management			
Most Probable Runoff Volume:	Apr-Aug	6861	KAF
	Apr-Jul	6228	KAF
	May-Jul	5620	KAF
31-Jan Flood Risk Management Space		2503	KAF
31-Jan Flood Risk Management Elevation		2396.2	ft

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	117%	6282	109%
5342	117%	5720	109%
4821	117%	5199	108%

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															
First-of-Month Elev	2452.9	2440.9	2410.8															
Date >>	30-Nov	31-Dec	31-Jan	28-Feb	15-Mar	31-Mar	15-Apr	30-Apr										
Flood Risk Management Space	500	2000	2503															
Flood Risk Management Elevation	2448.0	2411.0	2396.2															



- 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, 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 Median plus 2 standard deviations. A memo to NWD summarizes the methodology used.

## Libby : January 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	∑Jun-Jul		1.00		95.3	95.3
Eureka RS, MT	∑Oct,Nov,Dec Prcp	inches	4.94	145%	141.7	699.8
West Glacier, MT	∑Oct,Nov,Dec Prcp	inches	10.89	121%	58.4	636.1
Cranbrook A, BC	∑Oct,Nov,Dec Prcp	millimeters	121.73	134%	4.6	557.5
Fernie, BC	∑Oct,Nov,Dec Prcp	millimeters	471.07	129%	1.2	565.3
Hawkins Lake, MT	1-Jan SWE	inches				0.0
Stahl Creek, MT	1-Jan SWE	inches	20.50	126%	34.6	709.9
East Creek, BC	1-Jan SWE	millimeters				0.0
Moyie Mountain, BC	1-Jan SWE	millimeters	171.00	96%	1.6	271.0
Sunshine Village, AB	1-Jan SWE	millimeters	281.00	103%	2.1	601.3
Akamina Pass, AB	1-Jan SWE	millimeters				0.0
South Racehorse Creek, AB	1-Jan SWE	millimeters				0.0
Intercept			1		2724.4	2724.4
1-Jan Forecast (KAF)					∑	6860.7

### 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						inch
West Glacier, MT				5.91	2.71	2.27						inch
Cranbrook A, BC				54.93	20.20	46.60						mm
Fernie, BC				238.07	157.00	76.00						mm
Snow Water Equiv				1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units		
Hawkins Lake, MT											inch	
Stahl Creek, MT				21							inch	
East Creek, BC											mm	
Moyie Mountain, BC				171							mm	
Sunshine Village, AB				281							mm	
Akamina Pass, AB											mm	
South Racehorse Creek, AB											mm	
Streamflow				Jan	Feb	Mar	Apr	May	Jun	Units		
Libby Inflow Volume											KAF	
Reservoir Elevation				1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Libby FOM Elev				2452.8	2441.4	2410.8						feet

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