

Libby : January Runoff Forecast & Flood Risk Management Calculation

WY 2019

**Runoff Forecast and Flood Risk Management**

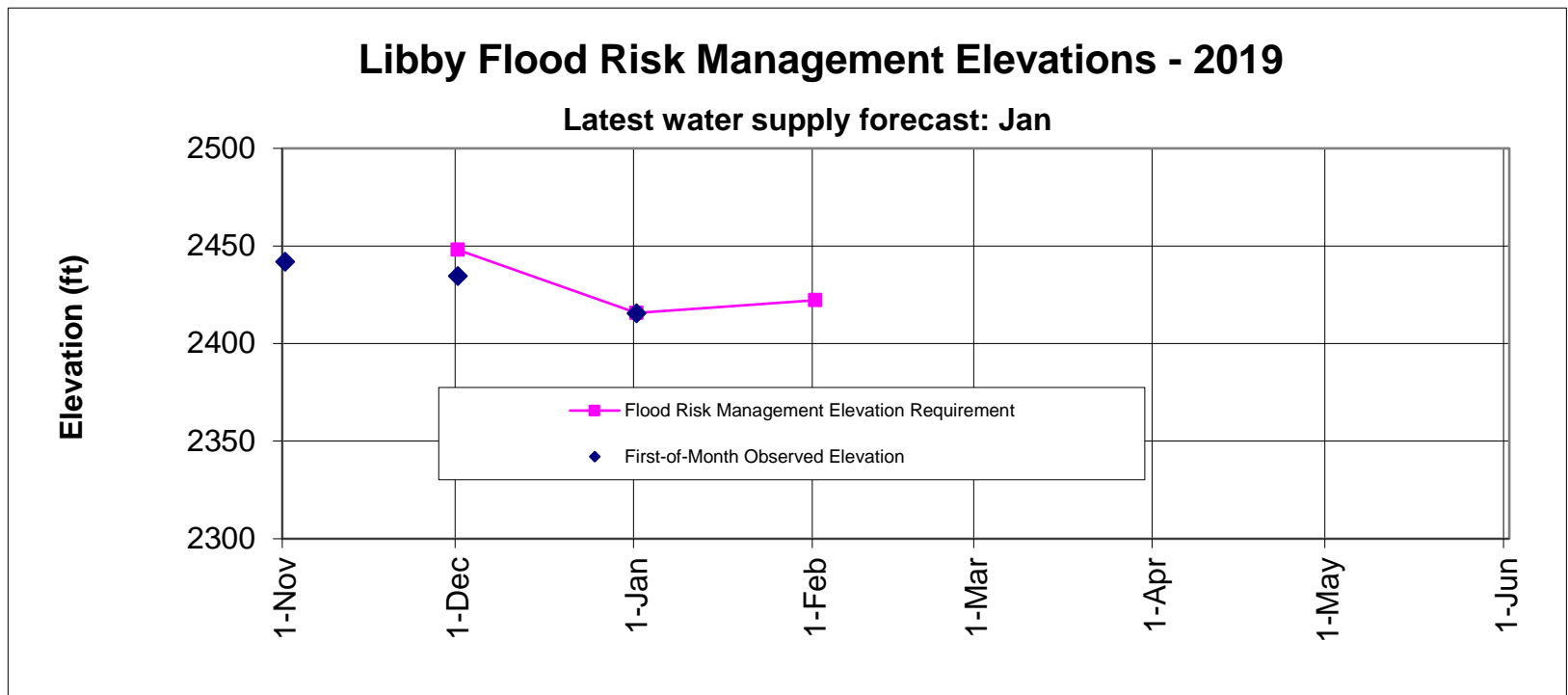
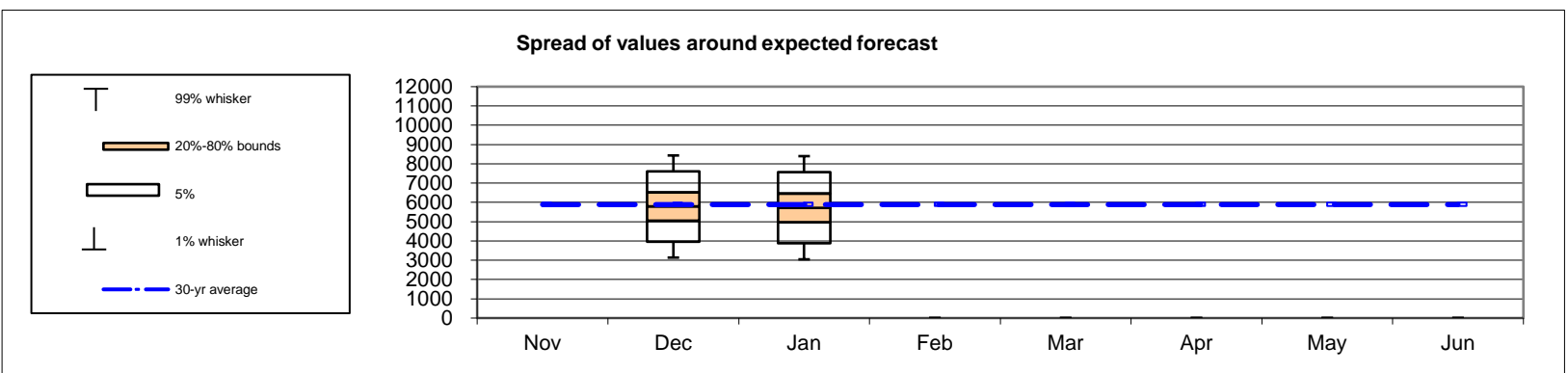
<b>Most Probable Runoff Volume:</b>	<b>Apr-Aug</b>	<b>5721</b>	<b>KAF</b>
	<b>Apr-Jul</b>	<b>5193</b>	<b>KAF</b>
	<b>May-Jul</b>	<b>4686</b>	<b>KAF</b>
<b>31-Jan Flood Risk Management Space</b>		<b>1574</b>	<b>KAF</b>
<b>31-Jan Flood Risk Management Elevation</b>		<b>2422.3</b>	<b>ft</b>

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	97%	6282	91%
5342	97%	5720	91%
4821	97%	5199	90%

<b>Seasonal Flood Risk Management</b>		<b>VARQ Flood Risk Management Implemented</b>						
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>Apr-Aug Runoff Forecast</b>		5784	5721					
<b>First-of-Month Elev</b>	2441.9	2434.6	2415.5					

Date >>	30-Nov	31-Dec	31-Jan	28-Feb	15-Mar	31-Mar	15-Apr	30-Apr
<b>Flood Risk Management Space</b>	500	1826	1574					
<b>Flood Risk Management Elevation</b>	2448.0	2415.7	2422.3					



**\*\*\* Due to the government shutdown, the observed data used for this forecast are preliminary. Th forecast may be updated when finalized data are released. (applicable as of 1/3/2019) \*\*\***

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, Kevin Shaffer (206) 764-3660, Sonja Michelsen (206) 316-3947, or Jon Moen (206) 764-3561.
2. If you notice that 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.

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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		0.10		95.3	9.5
Eureka RS, MT	ΣOct,Nov,Dec Prcp	inches	2.99	88%	141.7	423.8
West Glacier, MT	ΣOct,Nov,Dec Prcp	inches	8.41	93%	58.4	491.3
Cranbrook A, BC	ΣOct,Nov,Dec Prcp	millimeters	75.70	83%	4.6	346.7
Fernie, BC	ΣOct,Nov,Dec Prcp	millimeters	343.00	94%	1.2	411.6
Hawkins Lake, MT	1-Jan SWE	inches				0.0
Stahl Peak, MT	1-Jan SWE	inches	14.10	87%	34.6	488.3
East Creek, BC	1-Jan SWE	millimeters				0.0
Moyie Mountain, BC	1-Jan SWE	millimeters	153.00	86%	1.6	242.5
Sunshine Village, AB	1-Jan SWE	millimeters	272.16	99%	2.1	582.4
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)					Σ	5720.6

## Data used in Libby Water Supply Forecast

WY 2019

Climate Data				Jun-18	Jul-18							
SOI				-0.10	0.20							
Precipitation Data				Jan	Feb	Mar	Apr	May	Units			
Eureka RS, MT				1.64	0.55	0.80			inch			
West Glacier, MT				2.55	3.19	2.67			inch			
Cranbrook A, BC				34.50	14.60	26.60			mm			
Fernie, BC				87.00	139.00	117.00			mm			
Snow Water Equiv				1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units		
Hawkins Lake, MT										inch		
Stahl Peak, MT				14						inch		
East Creek, BC										mm		
Moyie Mountain, BC				153						mm		
Sunshine Village, AB				272						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				2441.9	2434.6	2415.5						feet

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