

# Libby : June Runoff Forecast & Flood Control Calculation

WY 2013

Runoff Forecast and Flood Control			
<b>Most Probable Runoff Volume:</b>	<b>Apr-Aug</b>	<b>6464</b>	<b>KAF</b>
	<b>Apr-Jul</b>	<b>5916</b>	<b>KAF</b>
	<b>May-Jul</b>	<b>5380</b>	<b>KAF</b>

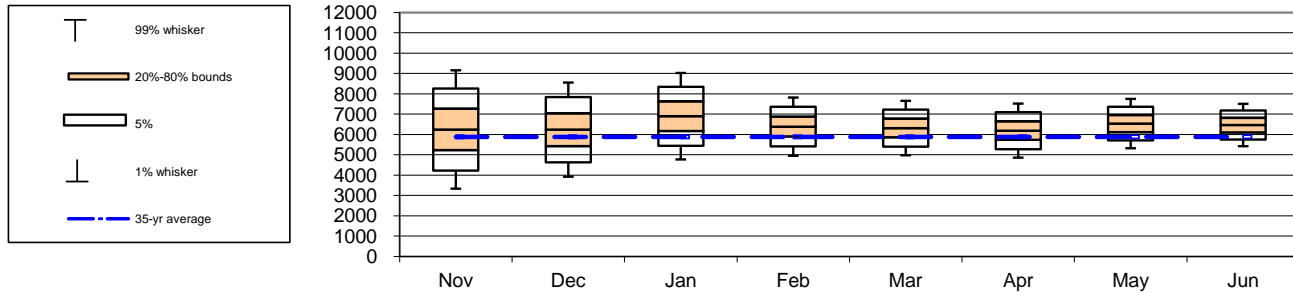
1981-2010 Average	Percent of Average	1929-1999 Average	Percent of Average
5885	110%	6337	102%
5342	111%	5771	103%
4821	112%	5247	103%

Seasonal Flood Control VARQ Flood Control Implemented								
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>Apr-Aug Runoff Forecast</b>	6245	6238	6898	6384	6315	6189	6535	6464
<b>First-of-Month Elev</b>	2449.9	2435.7	2409.7	2395.1	2393.8	2394.2	2402.9	2425.2

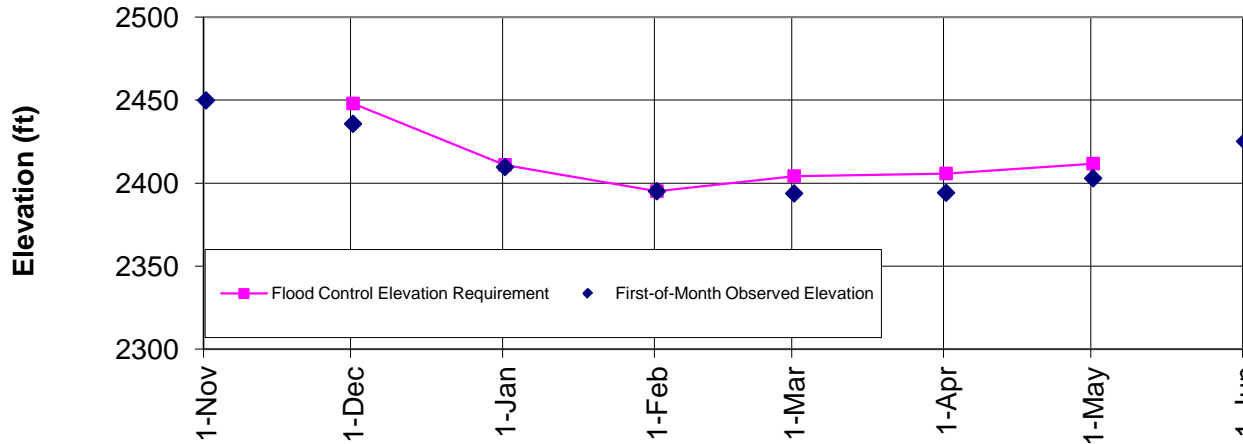
Date >>	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr
<b>Flood Control Space</b>	500	2000	2534	2238	2186	1972
<b>Flood Control Elevation</b>	2448.0	2411.0	2395.2	2404.3	2405.8	2411.8

Spread of values around expected forecast



## Libby Flood Control Elevations - 2013

Latest water supply forecast: Jun



Notes:

- 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, Adam Price (206) 764-3604, or Kristian Mickelson (206) 764-6927.
- 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.
- The precipitation gage at Fernie reported on 28/31 days for a total of 76.7 mm. Sparwood, which is ~19 miles upriver from Fernie, correlated fairly well on the days when Fernie reported. On the three days Fernie did not report, Sparwood recieved 1mm, 0 mm, and 7.8 mm. 8 mm was added to the reported Fernie total for input into these forecasting equations.

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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
QBO	∑Jan:Mar		-48.06		-1.8	87.3
PNA	∑Oct:Jan		-3.45		-72.4	249.7
West Glacier, MT	∑Jan:May Prcp	inches	10.98	94%	87.2	957.9
Fernie, BC	∑Jan:May Prcp	inches	16.15	80%	35.9	580.2
East Creek, BC	1-Jun SWE	inches	28.94	101%	21.9	634.7
Stahl Peak, MT	1-Jun SWE	inches	24.10	87%	22.0	531.3
Gardiner Creek, AB	1-Jun SWE	inches	15.55	113%	16.3	252.8
Intercept			1		526.2	526.2
1-June Jun-Aug Forecast (KAF)						∑ 3820.2
Libby Inflow (KAF)	April	536	103%	May	2108	133%
1-June Apr-Aug Forecast (KAF)						6463.9

## Data used in Libby Water Supply Forecast

	WY 2013								
Climate Data	Jan-12	Feb-12	Mar-12	Jun-12	Jul-12	Oct-12	Nov-12	Dec-12	Jan-13
SOI				-0.40	0.00				
QBO	-16.07	-15.25	-16.74						
PNA						-1.13	-1.06	-1.31	0.05
Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units
Eureka, MT	1.24	0.76	1.21	0.31	0.21				inch
Libby 1 NE RS, MT	1.94	2.52	4.39	0.91	0.27				inch
West Glacier, MT	3.06	4.59	4.51	1.92	2.04	2.71	1.87	2.44	inch
Fernie, BC	136.60	153.20	186.00	54.00	45.50	143.70	82.38	84.70	mm
Snow Water Equiv	1-Jan		1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units	
Floe Lake, BC		429	532	604				mm	
Sunshine Village, AB		319	370	416	556	633		mm	
East Creek, BC		459	533	635	821	1093	735	mm	
Stahl Peak, MT		14	20	25	35	38	24	inch	
Gardiner Creek, AB		365	479	540	667	783	395	mm	
Three Isle Lake, AB		249	294	339	441			mm	
Lost Creek South, AB		355	452	547				mm	
Morrissey Ridge, BC		331	428	514				mm	
Hawkins Lake, MT		14	19	22				inch	
Streamflow	Jan		Feb	Mar	Apr	May	Jun	Units	
Libby Inflow Volume		213.0	179.9	260.0	535.7	2108.0		KAF	
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Libby FOM Elev	2449.9	2435.7	2409.7	2395.1	2393.8	2394.2	2402.9	2425.2	feet

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