

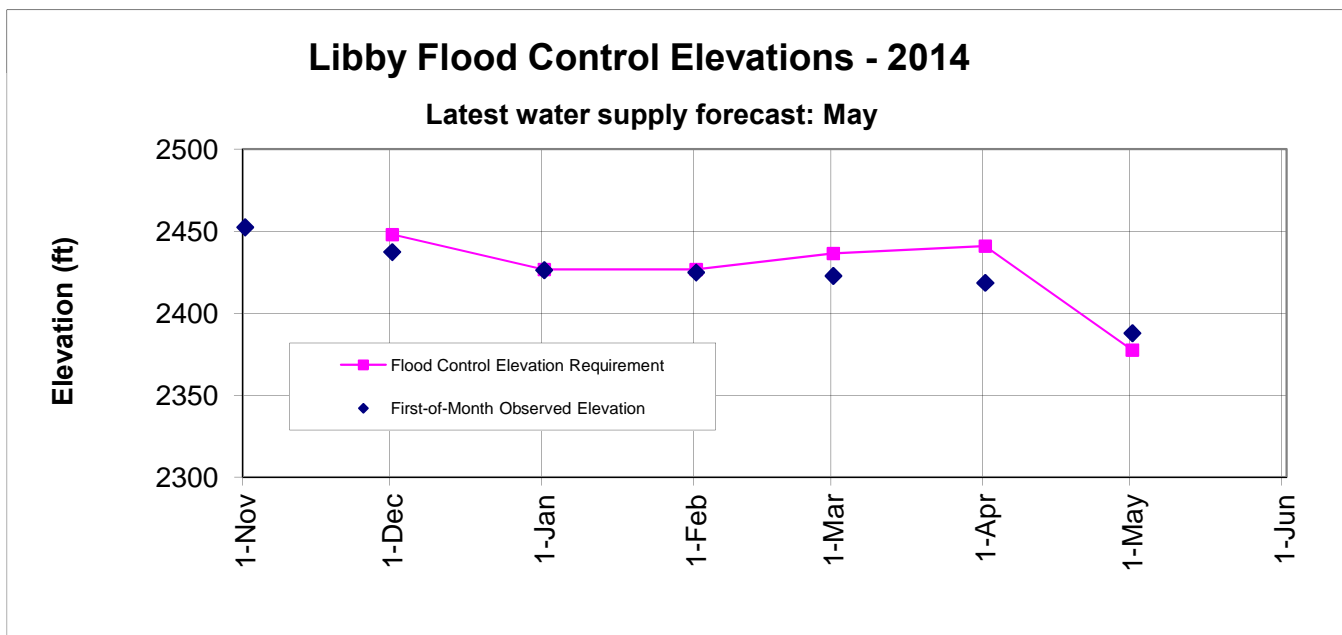
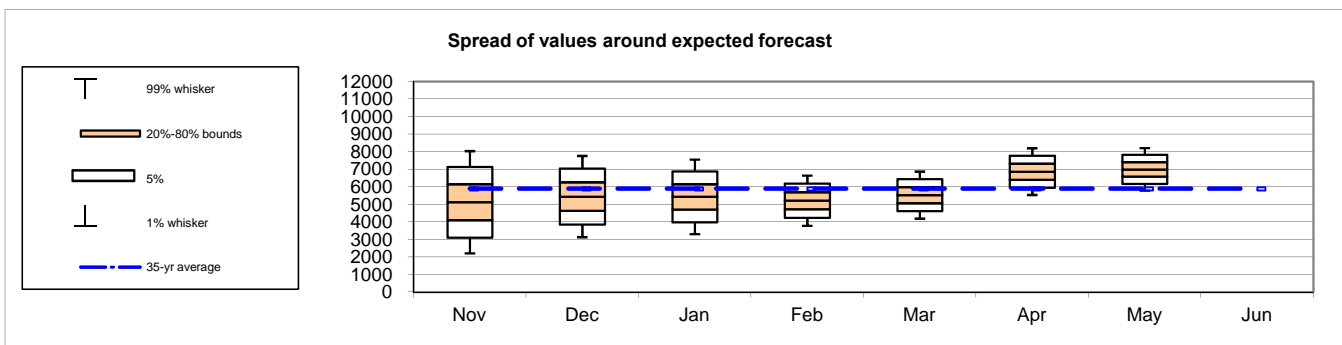
# Libby: May Runoff Forecast & Flood Control Calculation

WY 2014

Runoff Forecast and Flood Control			
<b>Most Probable Runoff Volume:</b>	<b>Apr-Aug</b>	<b>6996</b>	<b>KAF</b>
	<b>Apr-Jul</b>	<b>6334</b>	<b>KAF</b>
	<b>May-Jul</b>	<b>5874</b>	<b>KAF</b>

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	119%	6282	111%
5342	119%	5720	111%
4821	122%	5199	113%

Seasonal Flood Control								
VARQ Flood Control Implemented								
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>Apr-Aug Runoff Forecast</b>	5125	5446	5432	5213	5528	6868	6996	
<b>First-of-Month Elev</b>	2452.5	2437.4	2426.3	2424.9	2422.8	2418.6	2387.9	
Date >>	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr		
<b>Flood Control Space</b>	500	1400	1400	1000	809	3051		
<b>Flood Control Elevation</b>	2448.0	2426.7	2426.7	2436.4	2440.9	2377.6		



- 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, Adam Price (206) 764-3604, 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.

## Libby: May Runoff Forecast & Flood Control Calculation

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		-4.45		-3.0	13.4
PNA	∑Oct:Jan		-1.92		-87.2	167.4
West Glacier, MT	∑Jan:Apr Prcp	inches	14.08	141%	83.4	1174.5
Fernie, BC	∑Jan:Apr Prcp	inches	13.57	83%	39.2	531.5
Sunshine Village, AB	1-May SWE	inches	25.35	106%	57.8	1465.0
East Creek, BC	1-May SWE	inches	45.94	129%	27.7	1270.4
Stahl Peak, MT	1-May SWE	inches	44.20	121%	30.2	1332.6
Gardiner Creek, AB	1-May SWE	inches	31.89	132%	17.6	561.8
Intercept			1		18.5	18.5
1-May May-Aug Forecast (KAF)					∑	6535.1
Libby Inflow	April	KAF	461	88%		
1-May Apr-Aug Forecast (KAF)						6995.7

### Data used in Libby Water Supply Forecast

	WY 2014								
Climate Data	Jan-13	Feb-13	Mar-13	Jun-13	Jul-13	Oct-13	Nov-13	Dec-13	Jan-14
SOI				1.20	0.80				
QBO	-6.07	-1.23	2.85						
PNA						-0.21	-1.14	-1.16	0.59
Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units
Eureka, MT	0.37	1.16	0.77	1.06	0.73				inch
Libby 1 NE RS, MT	0.59	2.22	1.20	1.08	1.96				inch
West Glacier, MT	0.55	4.31	2.66	3.37	2.05	6.49	2.17		inch
Fernie, BC	27.50	128.50	210.00	91.50	64.00	161.81	27.47		mm
Snow Water Equiv	1-Jan			1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Floe Lake, BC	274			408	519				mm
Sunshine Village, AB	236			329	409	593	644		mm
East Creek, BC	335			471	581	910	1167		mm
Stahl Peak, MT	15			21	26	40	44		inch
Gardiner Creek, AB	257			352	488	753	810		mm
Three Isle Lake, AB	213			279	352	522			mm
Lost Creek South, AB	273			408	535				mm
Morrissey Ridge, BC	286			401	537				mm
Hawkins Lake, MT	8			14	20				inch
Streamflow	Jan		Feb	Mar	Apr	May	Jun	Units	
Libby Inflow Volume	190.4		137.7	255.5	460.6			KAF	
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Libby FOM Elev	2452.5	2437.4	2426.3	2424.9	2422.8	2418.6	2387.9		feet

Peter F. Brooks, P.E., D. WRE  
 Approving Official  
 Ch., Hydrologic Engineering and Power Branch  
 Northwestern Division

Amy Reese, P.E.  
 Branch Chief, Hydraulics and Hydrology  
 Seattle District