

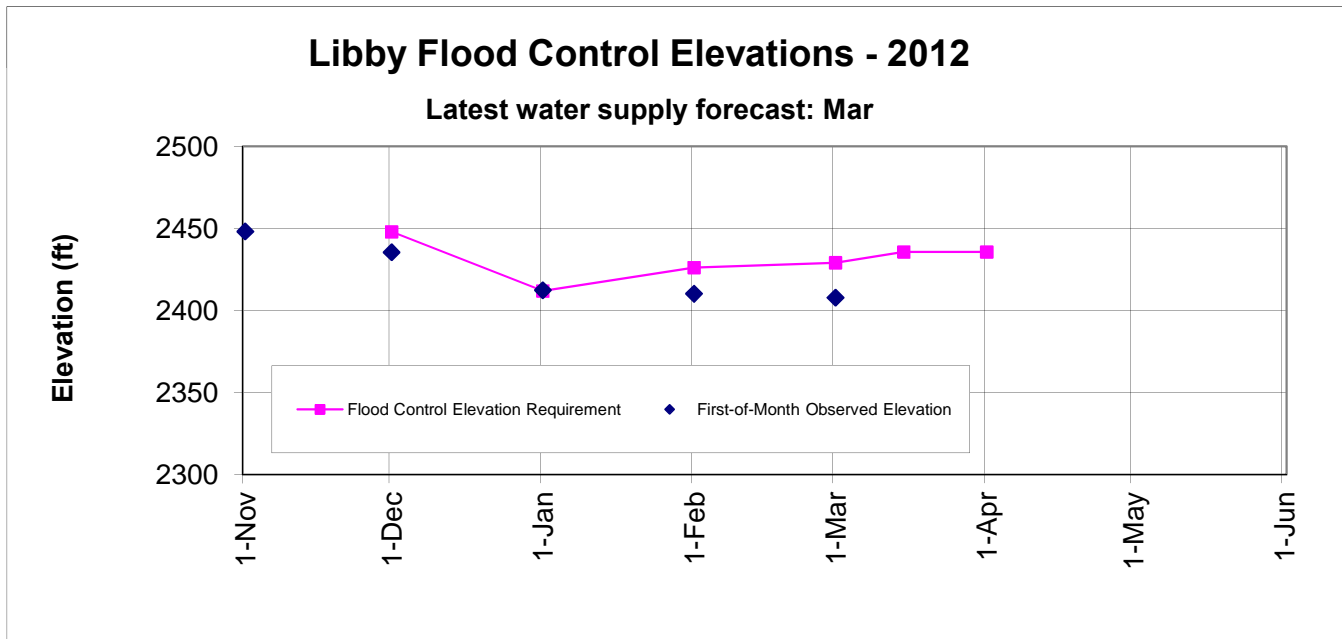
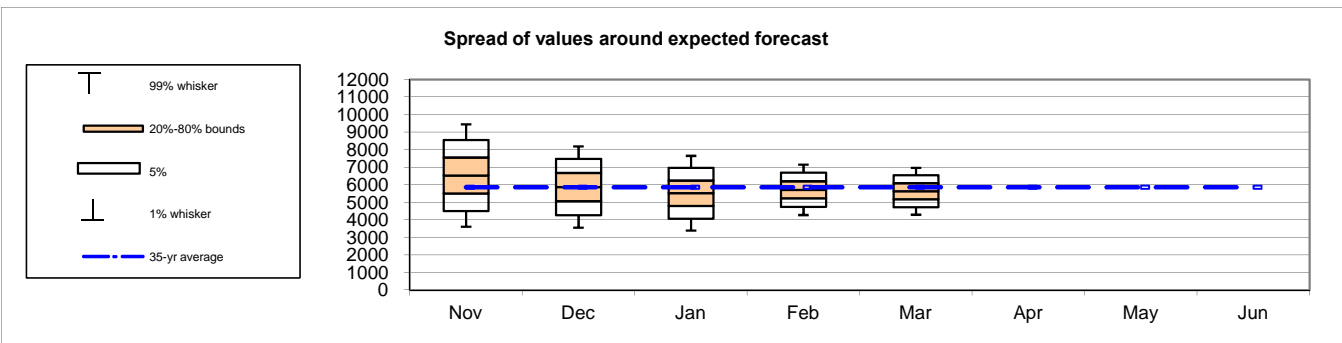
Libby : March Runoff Forecast & Flood Control Calculation

WY 2012

Runoff Forecast and Flood Control			
Most Probable Runoff Volume:	Apr-Aug	5635	KAF
	Apr-Jul	5095	KAF
	May-Jul	4609	KAF
31-Mar Flood Control Space		1030	KAF
31-Mar Flood Control Elevation		2435.7	ft

1975-2009 Average	Percent of Average	1929-1999 Average	Percent of Average
5865	96%	6337	89%
5303	96%	5771	88%
4797	96%	5247	88%

Seasonal Flood Control								
VARQ Flood Control Implemented								
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast	6532	5876	5524	5714	5635			
First-of-Month Elev	2448.3	2435.6	2412.5	2410.3	2407.9			
Date >>	30-Nov	31-Dec	31-Jan	28-Feb	15-Mar	31-Mar	15-Apr	30-Apr
Flood Control Space	500	1965	1419	1300	1030	1030		
Flood Control Elevation	2448.0	2412.0	2426.2	2429.2	2435.7	2435.7		



- 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, or Kristian Mickelson (206) 764-6927.
 - The February forecast changed due to updated January precipitation input for the Fernie, BC, site. Subsequent forecasts may differ from the originally published forecast due to updated values for precipitation, snow 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
QBO	∑Jan:Mar		29.67		-10.2	-302.8
Eureka, MT	∑Oct:Feb Prcp	inches	4.30	86%	68.6	295.2
Libby 1 NE RS, MT	∑Oct:Feb Prcp	inches	8.65	95%	51.5	445.6
West Glacier, MT	∑Oct:Feb Prcp	inches	13.23	92%	33.7	446.0
Fernie, BC	∑Oct:Feb Prcp	inches	14.78	58%	11.5	169.9
Floe Lake, BC	1-Mar SWE	inches	26.87	116%	6.4	171.5
Sunshine Village, AB	1-Mar SWE	inches	20.20	109%	17.8	359.8
East Creek, BC	1-Mar SWE	inches	29.23	102%	4.8	139.1
Stahl Peak, MT	1-Mar SWE	inches	27.60	95%	15.2	420.6
Gardiner Creek, AB	1-Mar SWE	inches	17.24	95%	13.2	226.9
Three Isle Lake, AB	1-Mar SWE	inches	17.20	112%	26.1	449.4
Lost Creek South, AB	1-Mar SWE	inches	26.65	138%	14.7	391.6
Morrissey Ridge, BC	1-Mar SWE	inches	20.08	88%	18.6	373.5
Hawkins Lake, MT	1-Mar SWE	inches	25.20	125%	22.8	575.4
Intercept			1		1473.3	1473.3
1-Mar Forecast (KAF)					∑	5635.0

Data used in Libby Water Supply Forecast

	WY 2012									
Climate Data	Jan-11	Feb-11	Mar-11	Jun-11	Jul-11	Oct-11	Nov-11	Dec-11	Jan-12	
SOI				0.20	1.00					
QBO	9.18	10.05	10.44							
PNA						0.86	-0.76	0.06	0.13	
Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units	
Eureka, MT	2.17	0.44	0.48	0.79	0.42				inch	
Libby 1 NE RS, MT	1.92	2.00	1.74	2.19	0.80				inch	
West Glacier, MT	3.90	1.51	2.06	3.48	2.28				inch	
Fernie, BC	120.10	73.80	52.60	64.90	64.00				mm	
Snow Water Equiv				1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Floe Lake, BC				409	533	683				mm
Sunshine Village, AB				276	441	513				mm
East Creek, BC				428	668	743				mm
Stahl Peak, MT				11	19	28				inch
Gardiner Creek, AB				200	354	438				mm
Three Isle Lake, AB				241	365	437				mm
Lost Creek South, AB				355	523	677				mm
Morrissey Ridge, BC				285	458	510				mm
Hawkins Lake, MT				14	22	25				inch
Streamflow				Jan	Feb	Mar	Apr	May	Jun	Units
Libby Inflow Volume				169.0	144.0					KAF
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units	
Libby FOM Elev	2448.3	2435.6	2412.5	2410.3	2407.9				feet	