

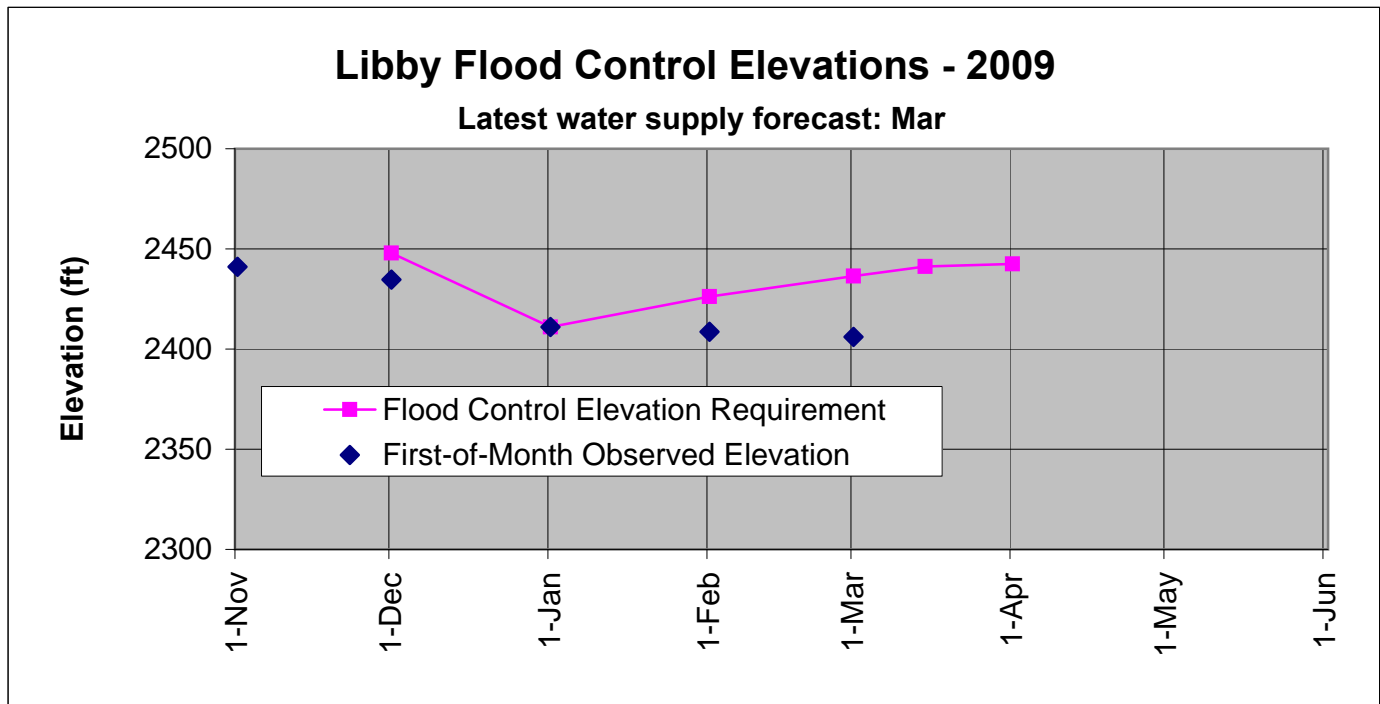
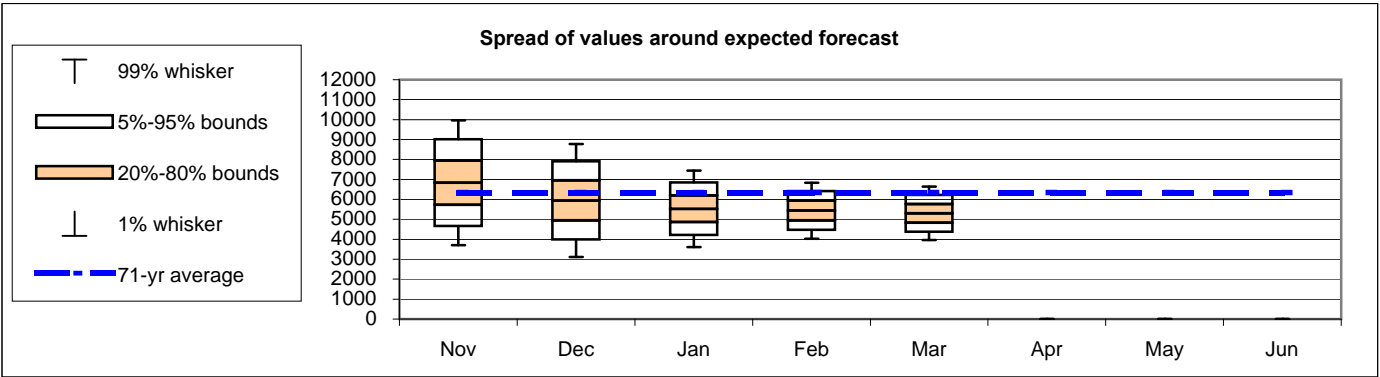
Libby : March Runoff Forecast & Flood Control Calculation

WY 2009

Runoff Forecast and Flood Control			
Most Probable Runoff Volume:	Apr-Aug	5296	KAF
	Apr-Jul	4822	KAF
	May-Jul	4384	KAF
31-Mar Flood Control Space		739	KAF
31-Mar Flood Control Elevation		2442.6	ft

1929-1999 Average	Percent of Average
6337	84%
5771	84%
5247	84%

Seasonal Flood Control		VARQ Flood Control Implemented						
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast	6828	5944	5526	5436	5296			
First-of-Month Elev	2441.0	2434.7	2411.0	2408.6	2406.0			
Date >>	30-Nov	31-Dec	31-Jan	28-Feb	15-Mar	31-Mar	15-Apr	30-Apr
Flood Control Space	500	2000	1421	1000	800	739		
Flood Control Elevation	2448.0	2411.0	2426.2	2436.4	2441.1	2442.6		



- 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), Amy Reese (206 764-3660) or Kenneth Brettman (206-764-6567).
 - Subsequent forecasts may differ from the originally published forecast due to updated values for precipitation, snow or streamflow.
 - Vermillion River snow measurements, with adjustments, are serving as a surrogate for Marble Canyon.

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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
Glacier NP RP, BC	ΣOct,Nov,Dec Prcp	inches	20.75	95%	19.6	407.3
Kaslo, BC	ΣOct,Nov,Dec Prcp	inches	10.74	95%	41.4	444.7
Fortine 1N, MT	ΣOct,Nov,Dec Prcp	inches	2.95	75%	103.4	305.1
West Glacier, MT	ΣOct,Nov,Dec Prcp	inches	8.14	95%	45.1	367.0
Banff, AB	ΣDec,Jan.Feb Prcp	inches	2.98	86%	74.3	221.2
Fernie, BC	ΣDec,Jan.Feb Prcp	inches	8.62	54%	31.4	270.5
Cranbrook, BC	ΣDec,Jan.Feb Prcp	inches	2.96	65%	56.9	168.6
Libby 1 NE RS, MT	ΣDec,Jan.Feb Prcp	inches	6.46	107%	72.3	467.0
Vermillion R #3, BC	1-Mar SWE ³	inches	7.95	70%	----	
Marble Canyon, BC	1-Mar SWE ³	inches	9.73		44.3	431.2
East Creek, BC	1-Mar SWE	inches	19.80	64%	18.3	361.8
Hawkins Lake, MT	1-Mar SWE	inches	15.30	69%	22.0	337.3
Stahl Peak, MT	1-Mar SWE	inches	22.50	75%	20.6	463.0
Intercept			1		1050.8	1050.8
1-Mar Forecast (KAF)					Σ	5295.6

Data used in Libby Water Supply Forecast

WY 2009

Climate Data	June	July	Aug	Sep					Units
SOI	0.30	0.20	0.80	1.50					
Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units
Cranbrook A, BC			49.80	8.48	17.00				mm
Fernie, BC	74.00	68.30	85.00	77.00	57.00				mm
Glacier NP Rogrs Pass, BC	164.40	174.60	188.00						mm
Kaslo, BC	82.00	91.60	99.20						mm
Banff, AB			39.10	12.00	24.50				mm
Fortine 1N, MT	0.46	0.65	1.84						inch
West Glacier, MT	1.37	3.20	3.57						inch
Libby 1 NE RS, MT	0.62	0.76	2.75	2.20	1.51				inch
Snow Water Equiv			1-Jan	1-Feb	1-Mar	1-Apr	1-May	15-May	Units
Vermillion Rvr No. 3, BC			126	192	202				mm
East Creek, BC			326	424	503				mm
Morrissey Ridge, BC									mm
Moyie Mountain, BC									mm
Sullivan Mine, BC									mm
Hawkins Lake, MT				13.3	15.3				inch
Stahl Peak, MT				18.4	22.5				inch
Streamflow			Jan	Feb	Mar	Apr	May	Jun	Units
Libby Inflow Volume			166.0	130.0					KAF
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Libby FOM Elev	2441.0	2434.7	2411.0	2408.6	2406.0				feet