

Libby : February Runoff Forecast & Flood Control Calculation

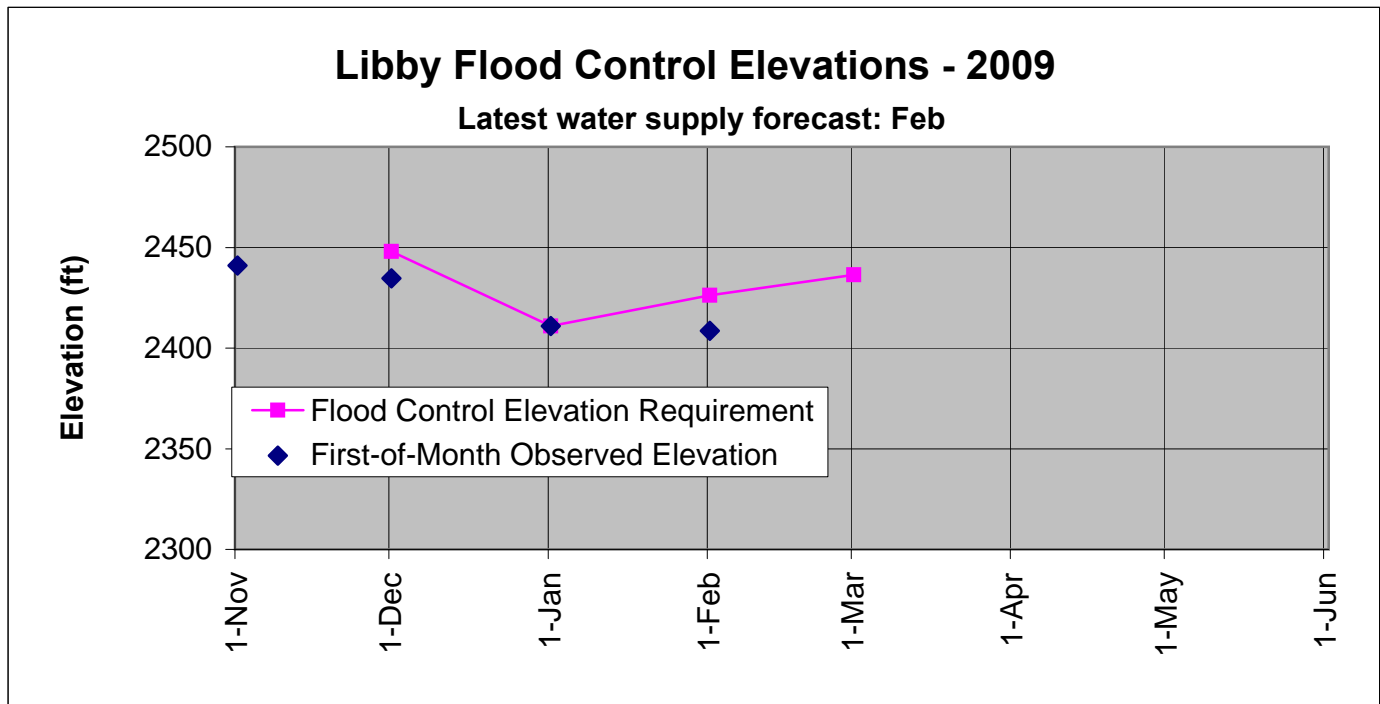
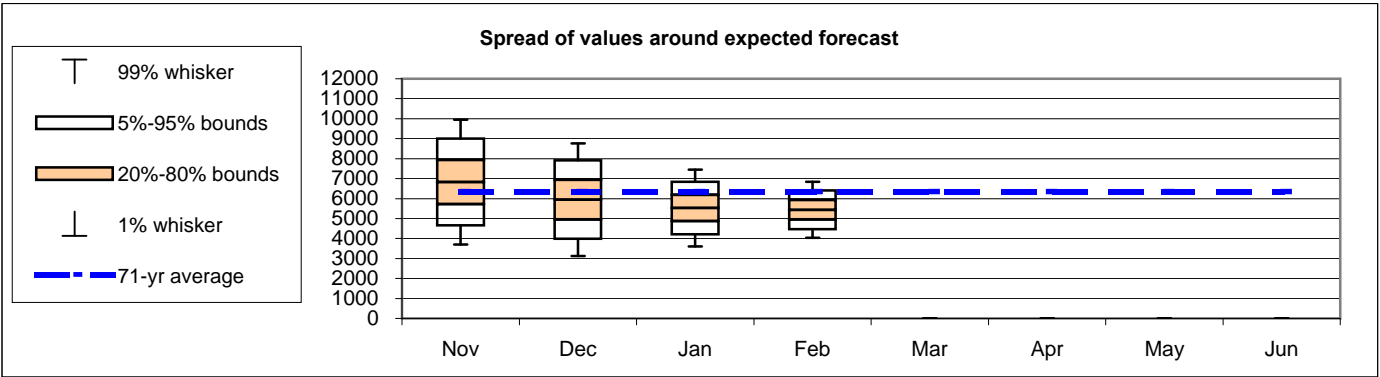
WY 2009

Runoff Forecast and Flood Control			
Most Probable Runoff Volume:	Apr-Aug	5436	KAF
	Apr-Jul	4950	KAF
	May-Jul	4501	KAF
28/29 Feb Flood Control Space		1000	KAF
28/29 Feb Flood Control Elevation		2436.4	ft

1929-1999 Average	Percent of Average
6337	86%
5771	86%
5247	86%

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				
First-of-Month Elev	2441.0	2434.7	2411.0	2408.6				

Date >>	30-Nov	31-Dec	31-Jan	28-Feb	15-Mar	31-Mar	15-Apr	30-Apr
Flood Control Space	500	2000	1421	1000				
Flood Control Elevation	2448.0	2411.0	2426.2	2436.4				



- 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), Ken Brettmann (206-764-6567) or Amy Reese (206-764-3660).
 - 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	∑Oct,Nov,Dec Prcp	inches	20.75	95%	19.9	412.2
Kaslo, BC	∑Oct,Nov,Dec Prcp	inches	10.74	95%	42.7	459.1
Fortine 1N, MT	∑Oct,Nov,Dec Prcp	inches	2.95	75%	107.3	316.5
West Glacier, MT	∑Oct,Nov,Dec Prcp	inches	8.14	95%	45.9	373.9
Banff, AB	∑Dec,Jan Prcp	inches	2.01	80%	92.1	185.4
Fernie, BC	∑Dec,Jan Prcp	inches	6.38	55%	38.6	246.0
Cranbrook, BC	∑Dec,Jan Prcp	inches	2.29	67%	59.8	137.1
Libby 1 NE RS, MT	∑Dec,Jan Prcp	inches	4.95	110%	70.7	349.7
Vermillion R #3, BC	1-Feb SWE ³	inches	7.56	86%	----	
Marble Canyon, BC	1-Feb SWE ³	inches	9.61		57.6	553.4
East Creek, BC	1-Feb SWE	inches	16.69	65%	23.1	385.3
Hawkins Lake, MT	1-Feb SWE	inches	13.30	74%	26.9	357.4
Stahl Peak, MT	1-Feb SWE	inches	18.40	77%	23.5	432.9
Intercept			1		1227.2	1227.2
1-Feb Forecast (KAF)					∑	5436.0

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					mm	
Fernie, BC	74.00	68.30	85.00	77.00					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					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					inch	
Snow Water Equiv				1-Jan	1-Feb	1-Mar	1-Apr	1-May	15-May	Units
Vermillion Rvr No. 3, BC				126	192					mm
East Creek, BC				326	424					mm
Morrissey Ridge, BC										mm
Moyie Mountain, BC										mm
Sullivan Mine, BC										mm
Hawkins Lake, MT					13.3					inch
Stahl Peak, MT					18.4					inch
Streamflow				Jan	Feb	Mar	Apr	May	Jun	Units
Libby Inflow Volume				166.0						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					feet	