

Libby : March Runoff Forecast & Flood Control Calculation

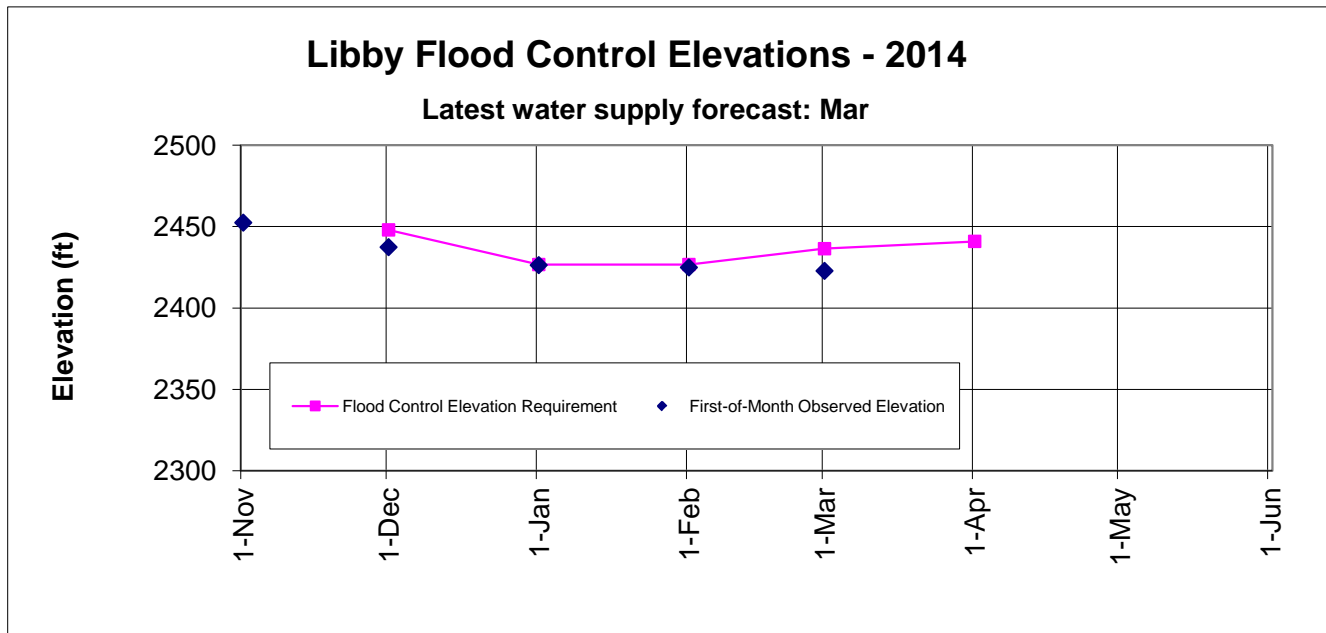
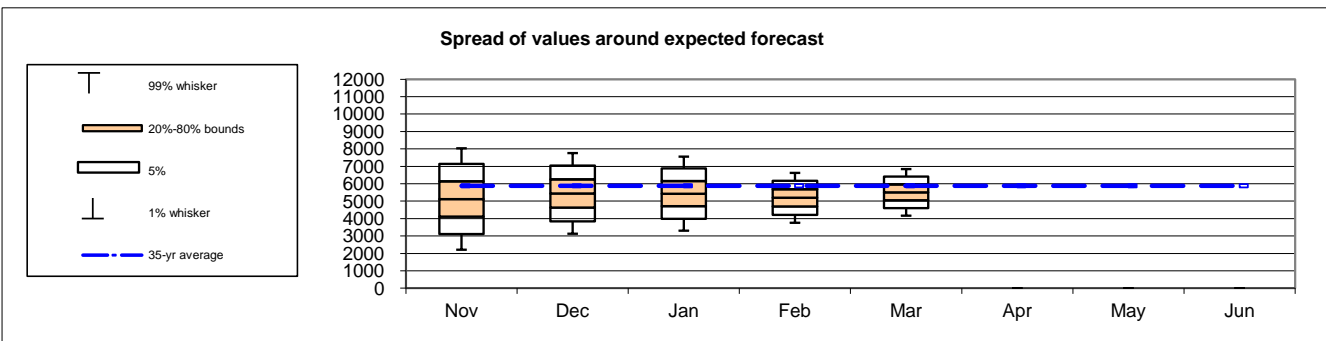
WY 2014

Runoff Forecast and Flood Control			
Most Probable Runoff Volume:	Apr-Aug	5505	KAF
	Apr-Jul	4997	KAF
	May-Jul	4510	KAF
31-Mar Flood Control Space		809	KAF
31-Mar Flood Control Elevation		2440.9	ft

1981-2010 Average	Percent of Average	1929-2008 Average	Percent of Average
5885	94%	6282	88%
5342	94%	5720	87%
4821	94%	5199	87%

Seasonal Flood Control VARQ Flood Control Implemented								
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast	5125	5446	5432	5192	5505			
First-of-Month Elev	2452.5	2437.4	2426.3	2424.9	2422.8			

Date >>	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr
Flood Control Space	500	1400	1400	1000	809	
Flood Control Elevation	2448.0	2426.7	2426.7	2436.4	2440.9	



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.
3. Fernie precipitation values were not collected for 11 days during February. Fernie precipitation was scaled up using the ratio of Total February precipitation at Sparwood to precipitation at Sparwood on the days Fernie reported precip.

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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		-4.45		-10.2	45.4
Eureka, MT	∑Oct:Feb Prcp	inches	4.09	82%	68.6	280.8
Libby 1 NE RS, MT	∑Oct:Feb Prcp	inches	7.05	78%	51.5	363.2
West Glacier, MT	∑Oct:Feb Prcp	inches	12.27	85%	33.7	413.7
Fernie, BC	∑Oct:Feb Prcp	inches	20.53	81%	11.5	236.0
Floe Lake, BC	1-Mar SWE	inches	20.43	88%	6.4	130.4
Sunshine Village, AB	1-Mar SWE	inches	16.10	87%	17.8	286.8
East Creek, BC	1-Mar SWE	inches	22.87	80%	4.8	108.9
Stahl Peak, MT	1-Mar SWE	inches	26.20	90%	15.2	399.2
Gardiner Creek, AB	1-Mar SWE	inches	19.21	106%	13.2	252.8
Three Isle Lake, AB	1-Mar SWE	inches	13.86	90%	26.1	362.0
Lost Creek South, AB	1-Mar SWE	inches	21.06	109%	14.7	309.5
Morrissey Ridge, BC	1-Mar SWE	inches	21.14	93%	18.6	393.3
Hawkins Lake, MT	1-Mar SWE	inches	19.70	97%	22.8	449.8
Intercept			1		1473.3	1473.3
1-Mar Forecast (KAF)					∑	5505.1

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	2.70	2.05				inch	
Fernie, BC	27.50	128.50	210.00	91.50	64.00				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				mm
East Creek, BC				335	471	581				mm
Stahl Peak, MT				15	21	26				inch
Gardiner Creek, AB				257	352	488				mm
Three Isle Lake, AB				213	279	352				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	134.1					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				feet	

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