

Libby : December Runoff Forecast & Flood Risk Management Calculation

WY 2023

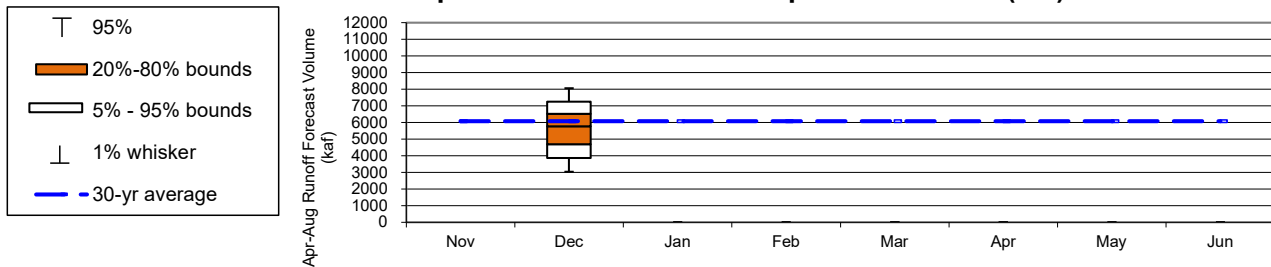
Runoff Forecast	December	1991-2020 Average	1991 - 2020 Percent of Average	1929-2020 Average	1929 - 2020 Percent of Average
Most Probable Runoff Volume: Apr-Aug (kaf)	5692	6080	94%	6259	91%
Most Probable Runoff Volume: Apr-Jul (kaf)	5215	5570	94%	5708	91%
Most Probable Runoff Volume: May-Jul (kaf)	4694	5014	94%	5183	91%

Flood Risk Management	December
31-Dec Flood Risk Management Space (kaf)	1689
31-Dec Flood Risk Management Elevation (ft)	2419.3

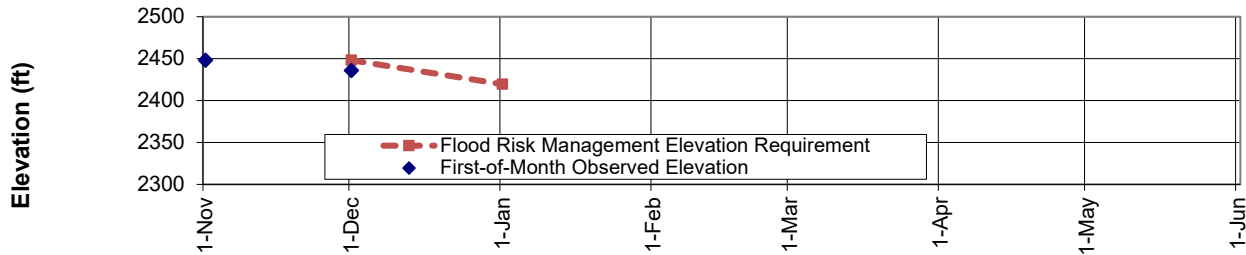
Forecast/Reservoir Data	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast (kaf)		5692						
First-of-Month Elev (ft)	2448.0	2435.9						

Seasonal FRM Requirements	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr		
Flood Risk Management Space (kaf)	500	1689						
Flood Risk Management Elevation (ft)	2448.0	2419.3						

Spread of values around expected forecast (kaf)



Libby Flood Risk Management Elevations December- 2023



Notes:

1. The given forecast is the official Corps of Engineers forecast for Libby. If you have any questions please contact Leon Basdekas (208) 353-2564, Ethan Cheng (206) 316-3909 , Lumas Helaire (206) 316-3875, Jason Chang (206) 764-3528, or Kevin Shaffer (206) 764-3660.
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. Cranbrook A gage data was fully available in the months of October and November. Nearby Cranbrook Airport Auto gage data was not used.

Libby : December Runoff Forecast & Flood Risk Management Calculation

Apr-Aug Runoff Forecast Calculation:

Variable	Month(s)	Units	Observed Value A	Percent of Average (1991-2020)	Regression Coefficient B	Marginal Runoff (KAF) =A*B
SOI	ΣJun:Jul		2.50		133.38	333.5
Eureka RS, MT	ΣOct:Nov Prcp	inches	1.48	60%	267.66	396.1
West Glacier, MT	ΣOct:Nov Prcp	inches	4.78	76%	105.96	506.5
Cranbrook A, BC	ΣOct:Nov Prcp	millimeters	37.50	60%	8.79	329.6
Fernie, BC	ΣOct:Nov Prcp	millimeters	216.81	79%	1.95	422.8
Intercept			1		3704.00	3704.0
December Forecast	April - August	kaf				5692.5

Data used in Libby Water Supply Forecast

Climate Data	Jun-22	Jul-22
SOI	1.70	0.80

Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Eureka RS, MT (inch)	0.40	1.08						
West Glacier, MT (inch)	2.02	2.76						
Cranbrook A, BC (mm)	13.00	24.50						
Fernie, BC (mm)	98.81	118.00						

Snow Water Equiv	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
Hawkins Lake, MT (inch)								
Stahl Peak, MT (inch)								
East Creek, BC (mm)								
Moyie Mountain, BC (mm)								
Sunshine Village, AB (mm)								
Akamina Pass, AB (mm)								
South Racehorse Creek, AB (mm)								

Streamflow	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Libby Inflow Volume (kaf)								

Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
Libby FOM Elev (feet)	2448.0	2435.9						

William D. Proctor, P.E.
 Approving Official
 Ch., Hydrologic Engineering and Power Branch
 Northwestern Division

Leon Basdekas, P.E.
 Upper Columbia Senior Water Manager
 Seattle District