

The Official Water Supply Forecasts for January through July are computed on the 3rd workday of the month. Flood Risk Management (FRM) is computed at standard intervals and posted at: [www.nwd.usace.army.mil/Missions/Water/Columbia/FloodControl](http://www.nwd.usace.army.mil/Missions/Water/Columbia/FloodControl)

The **JANUARY** Water Supply Forecast sets BiOp actions as highlighted in the table below:

Forecast Point	Forecast period	Forecast	BiOp Actions to be Determined
Hungry Horse	April – August Provided by Reclamation	January, February, March	Sets min. flows at Hungry Horse and Columbia Falls
	May – September Provided by Reclamation	January, February, March	Sets VARQ FRM targets
		April	Sets VARQ FRM targets and VARQ refill flows
		May	Sets VARQ refill flows Sets end of September draft target
		June	Sets VARQ refill flows
The Dalles	April – September Provided by NWRFC	March	Sets CRWMP adjustments at Grand Coulee
	April – August Provided by NWRFC	April	Sets spring flow objective at McNary Dam
		July	Sets end of August draft limit at Grand Coulee
Lower Granite	April – July Provided by NWRFC	April	Sets spring flow objective at Lower Granite
		June	Sets summer flow objective at Lower Granite
Libby	April – August Provided by Corps Seattle District	December	Sets end of December variable draft target
		January, February, March	Sets VARQ FRM targets
		April	Sets VARQ FRM targets and VARQ refill flows
		May	Sets Libby min. sturgeon flow volume and min. bull trout flows for after sturgeon pulse through Sept. Sets VARQ FRM targets and VARQ refill flows Sets end of September draft limit.
		June	VARQ refill flows
Dworshak	April – July Provided by NWRFC	January to March	Manage for reservoir FRM, VDL, and Flood Control Refill Curve (FCRC)
		April to June	Manage for reservoir FRM and FCRC

Source: 2024 Water Management Plan, page 15 - <https://pweb.crohms.org/tmt/documents/wmp/2024/>

## **Hungry Horse Dam – Official Water Supply Forecast JANUARY 2024**

Below are the volumes for the January 2024 final forecast for Hungry Horse:

- Jan-Jul: 1,670 kaf (75%)
- Apr-Aug: 1,490 kaf (73%)
- Apr-Jul: 1,440 kaf (73%)
- May-Sep: 1,270 kaf (72%)

The minimum flows downstream of Hungry Horse based on the Apr-Aug Volume forecast are as follows:

- Columbia Falls: 3,350 cfs
- Hungry Horse: 650 cfs

End of April forecasted forebay elevation at Hungry Horse is projected to be 3,435 ft.

**Joel Fenolio, P.E.**  
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Boise, ID 83706

# Northwest River Forecast Center

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**COLUMBIA - THE DALLES DAM (TDAO3)**  
Forecasts for Water Year 2024

**Official Water Supply**  
ESP with 10 Days QPF Ensemble: 2024-01-04 Issued: 2024-01-04

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	58257	73784	78	90249	94166
APR-JUL	49198	62147	76	78144	81933
APR-AUG	54056	69028	77	85008	89196
JAN-SEP	76421	94258	81	113720	115946
JAN-JUL	66939	82656	80	100897	103714
OCT-SEP	89658	107495	81	126958	132314

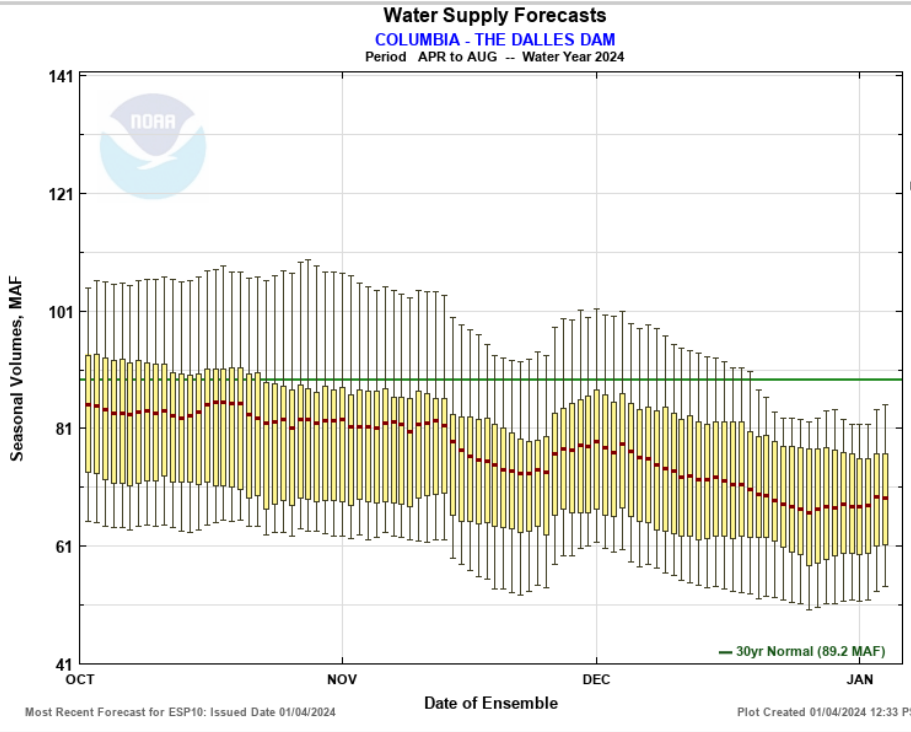
**Experimental Water Supply**  
HEFS with 15 days EQPF Ensemble: 2024-01-04 Issued: 2024-01-04

APR-SEP	58158	75868	81	91316	94166
APR-JUL	48346	63424	77	80535	81933
APR-AUG	53474	70795	79	86761	89196
JAN-SEP	75587	94655	82	114718	115946
JAN-JUL	66338	82499	80	102157	103714
OCT-SEP	88823	107892	82	127956	132314

**Reference**  
ESP with 0 Days QPF Ensemble: 2024-01-04 Issued: 2024-01-04

APR-SEP	56645	72979	78	88458	94166
APR-JUL	47334	62171	76	77592	81933
APR-AUG	52159	68511	77	83774	89196
JAN-SEP	72868	91843	79	111778	115946
JAN-JUL	63789	80184	77	99035	103714
OCT-SEP	86104	105079	79	125015	132314

Move the mouse over the desired "Forecast Period" to display a graph.



- Max Scale
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- Show Min/Max Ensemble Volume
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HEFS
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**SNAKE - LOWER GRANITE DAM (LGDW1)**  
Forecasts for Water Year 2024

**Official Water Supply**  
ESP with 10 Days QPF Ensemble: 2024-01-04 Issued: 2024-01-04

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	12157	18436	83	22854	22232
APR-JUL	10224	16152	81	20232	19946
<b>APR-AUG</b>	<b>11163</b>	<b>17310</b>	<b>82</b>	<b>21514</b>	<b>21121</b>
JAN-SEP	18004	23867	80	32240	29736
JAN-JUL	16123	21757	79	29803	27450
OCT-SEP	21849	27712	81	36085	34287

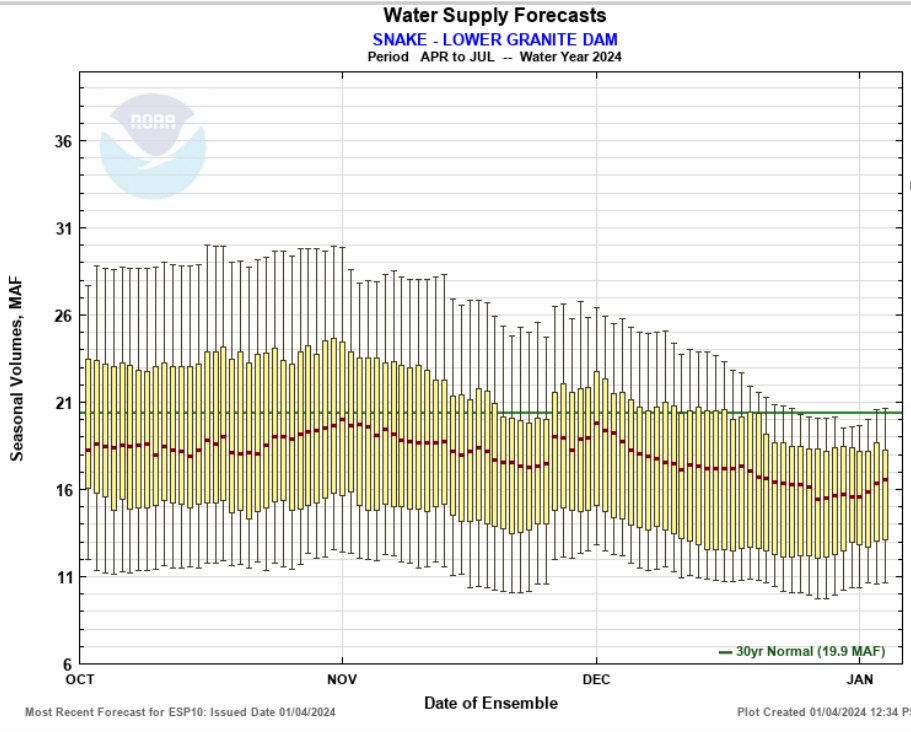
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HEFS with 15 days EQPF Ensemble: 2024-01-04 Issued: 2024-01-04

APR-SEP	12362	19309	87	23996	22232
APR-JUL	10379	16992	85	21338	19946
APR-AUG	11336	18154	86	22682	21121
JAN-SEP	17918	24759	83	31995	29736
JAN-JUL	16053	22406	82	29345	27450
OCT-SEP	21763	28604	83	35840	34287

**Reference**  
ESP with 0 Days QPF Ensemble: 2024-01-04 Issued: 2024-01-04

APR-SEP	11668	18380	83	22495	22232
APR-JUL	9718	16018	80	20011	19946
APR-AUG	10658	17212	81	21293	21121
JAN-SEP	16959	24298	82	30366	29736
JAN-JUL	15170	21993	80	27890	27450
OCT-SEP	20804	28143	82	34211	34287

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Libby : January Runoff Forecast & Flood Risk Management Calculation

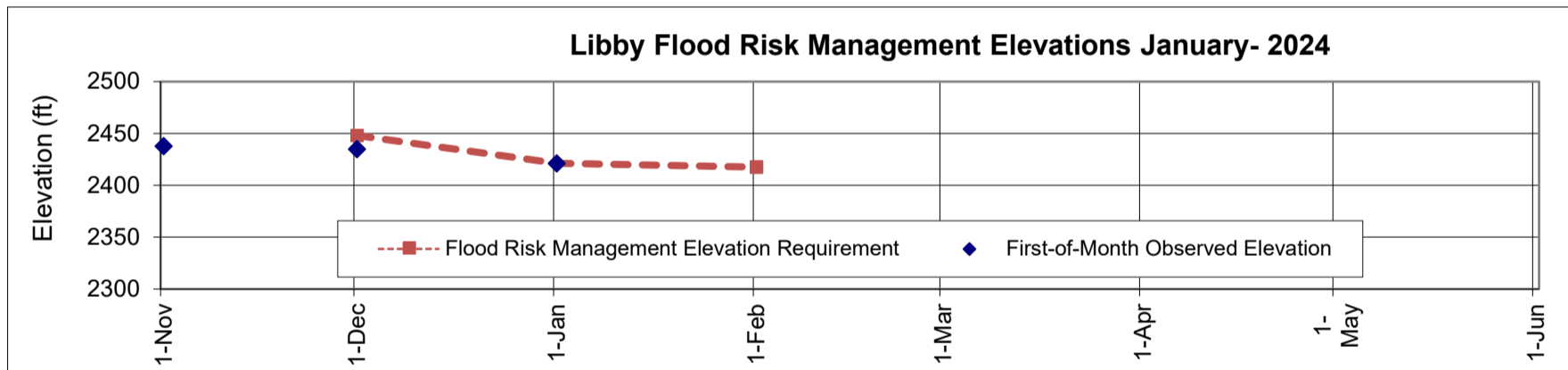
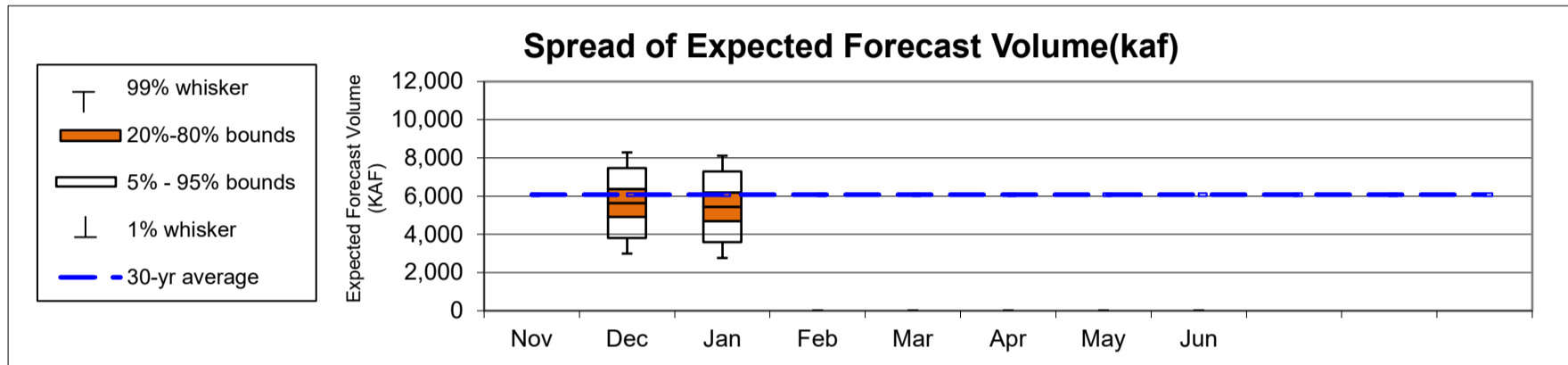
WY 2024

Runoff Forecast	January	1991-2020 Average	1991 - 2020 Percent of Average	1929-2020 Average	1929 - 2020 Percent of Average
Most Probable Runoff Volume: Apr-Aug (kaf)	5440	6080	89%	6259	87%
Most Probable Runoff Volume: Apr-Jul (kaf)	4984	5570	89%	5708	87%
Most Probable Runoff Volume: May-Jul (kaf)	4486	5014	89%	5183	87%

Flood Risk Management	January
31-Jan Flood Risk Management Space (kaf)	1757
31-Jan Flood Risk Management Elevation (ft)	2417.6

Forecast/Reservoir Data	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast (kaf)		5642	5440					
First-of-Month Elev (ft)	2437.9	2434.8	2421.2					

Seasonal FRM Requirements	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr		
Flood Risk Management Space (kaf)	500	1613	1757					
Flood Risk Management Elevation (ft)	2448.0	2421.3	2417.6					



Notes:

- The given forecast is the official Corps of Engineers forecast for Libby. If you have any questions please contact Leon Basdekas (208) 353-2564, Courtney Moore (206) 316-3005, David Varner (206) 316-3155 or Jason Chang (206) 764-3528.
- 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.

**Libby : January Runoff Forecast & Flood Risk Management Calculation**  
**Apr-Aug Runoff Forecast Calculation:**

<i>Variable</i>	<i>Month(s)</i>	<i>Units</i>	<i>Observed Value A</i>	<i>Percent of Average (1991-2020)</i>	<i>Regression Coefficient B</i>	<i>Marginal Runoff (KAF) =A*B</i>
SOI	ΣJun:Jul		0.00		95.28	0.0
Eureka RS, MT	ΣOct:Dec Prcp	inches	3.55	96%	141.74	503.1
West Glacier, MT	ΣOct:Dec Prcp	inches	8.38	88%	58.42	489.6
Cranbrook A, BC	ΣOct:Dec Prcp	millimeters	54.40	56%	4.58	249.2
Fernie, BC	ΣOct:Dec Prcp	millimeters	471.42	124%	1.20	565.7
Hawkins Lake, MT	1-Jan SWE	inches				
Stahl Peak, MT	1-Jan SWE	inches	11.90	70%	34.63	412.1
East Creek, BC	1-Jan SWE	millimeters				
Moyie Mountain, BC	1-Jan SWE	millimeters	85.00	47%	1.59	134.7
Sunshine Village, AB	1-Jan SWE	millimeters	168.69	62%	2.14	361.0
Akamina Pass, AB	1-Jan SWE	millimeters				
South Racehorse Creek, AB	1-Jan SWE	millimeters				
Intercept			1		2724.44	2724.4
January Forecast	April - August	kaf				5439.8

**Data used in Libby Water Supply Forecast**

<i>Climate Data</i>	<i>Jun-23</i>	<i>Jul-23</i>
SOI	0.30	-0.30

<i>Precipitation Data</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>
Eureka RS, MT (inch)	0.58	1.88	1.09					
West Glacier, MT (inch)	1.52	4.12	2.74					
Cranbrook A, BC (mm)	4.80	22.20	27.40					
Fernie, BC (mm)	98.30	129.79	243.33					


<i>Snow Water Equiv</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>
Hawkins Lake, MT (inch)								
Stahl Peak, MT (inch)			12					
East Creek, BC (mm)								
Moyie Mountain, BC (mm)			85					
Sunshine Village, AB (mm)			169					
Akamina Pass, AB (mm)								
South Racehorse Creek, AB (mm)								

<i>Streamflow</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>
Libby Inflow Volume (kaf)								

<i>Reservoir Elevation</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>
Libby FOM Elev (feet)	2437.9	2434.8	2421.2					

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### NF CLEARWATER - DWORSHAK DAM (DWR11) Forecasts for Water Year 2024

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Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	1419	2010	77	2827	2620
<b>APR-JUL</b>	<b>1321</b>	<b>1881</b>	<b>76</b>	<b>2689</b>	<b>2474</b>
JAN-SEP	2102	2712	77	3792	3543
JAN-JUL	1994	2589	76	3644	3397
OCT-SEP	2402	3011	75	4091	3998

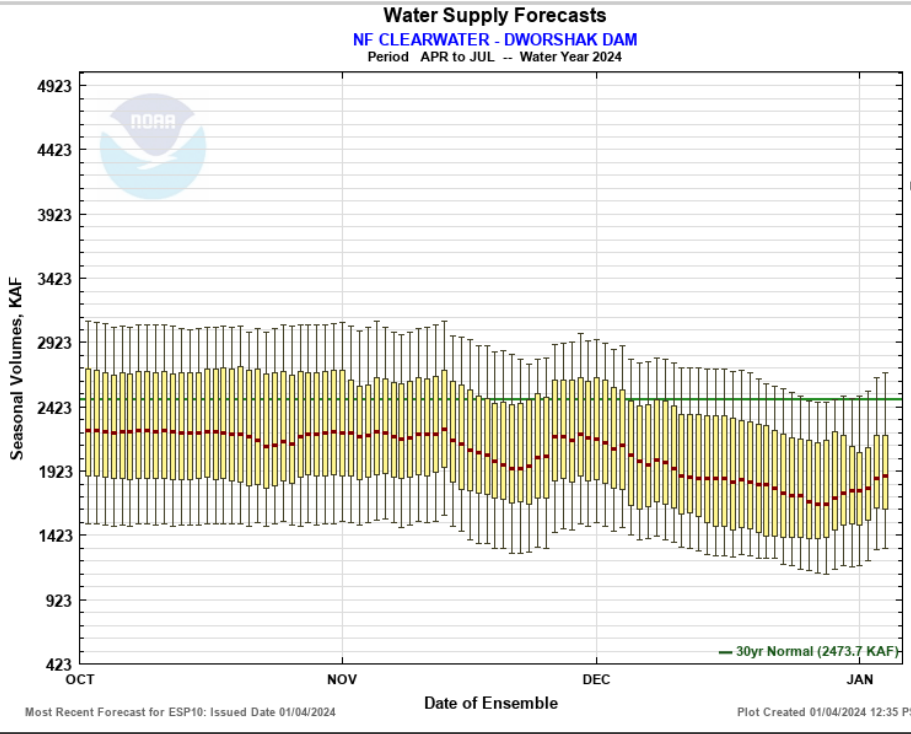
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APR-SEP	1366	1962	75	3011	2620
APR-JUL	1269	1836	74	2865	2474
JAN-SEP	2047	2781	78	3855	3543
JAN-JUL	1949	2659	78	3716	3397
OCT-SEP	2346	3080	77	4154	3998

**Reference**  
ESP with 0 Days QPF Ensemble: 2024-01-04 Issued: 2024-01-04

APR-SEP	1267	1865	71	2655	2620
APR-JUL	1173	1742	70	2522	2474
JAN-SEP	1933	2623	74	3666	3543
JAN-JUL	1824	2505	74	3516	3397
OCT-SEP	2232	2922	73	3965	3998

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