

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

The **MAY** 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/>

3-May-2024

Hungry Horse Dam – Official Water Supply Forecast May 2024

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

- May-Jul: 1,050 kaf (63%)
- Apr-Aug: 1,378 kaf (67%)
- May-Sep: 1,142 kaf (64%)
 - The May-September forecast sets the end of September draft target to 3540 ft.

Chris Runyan

U.S. Bureau of Reclamation | Columbia-Pacific Northwest Interior - Region 9
Water Management | Operations Group

Boise, ID



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

Official Water Supply

ESP with 10 Days QPF Ensemble: 2024-05-03 Issued: 2024-05-03

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	68262	72728	77	80511	94166
APR-JUL	57893	61816	75	68847	81933
APR-AUG	63855	68320	77	76000	89196
JAN-SEP	87600	92065	79	99849	115946
JAN-JUL	77231	81153	78	88185	103714
OCT-SEP	100854	105320	80	113103	132314

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2024-05-03 Issued: 2024-05-03

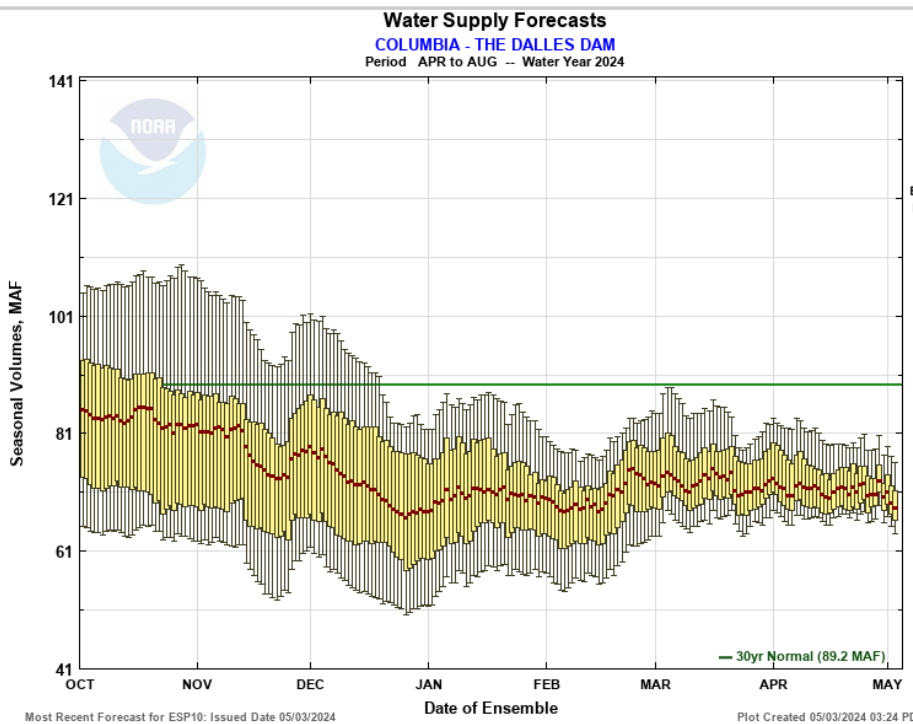
APR-SEP	68638	73851	78	81083	94166
APR-JUL	58317	62670	76	70027	81933
APR-AUG	64284	69375	78	76515	89196
JAN-SEP	87976	93189	80	100421	115946
JAN-JUL	77655	82007	79	89364	103714
OCT-SEP	101230	106443	80	113675	132314

Reference

ESP with 0 Days QPF Ensemble: 2024-05-03 Issued: 2024-05-03

APR-SEP	68413	73462	78	81057	94166
APR-JUL	57580	62300	76	70059	81933
APR-AUG	64074	68953	77	76563	89196
JAN-SEP	87750	92800	80	100394	115946
JAN-JUL	76917	81638	79	89397	103714
OCT-SEP	101005	106054	80	113649	132314

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



☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days ☐ Show Min/Max Ensemble Volume ☐ Show Tooltips Help

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ESP10

HEFS

ESP0

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SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2024

Official Water Supply

ESP with 10 Days QPF Ensemble: 2024-05-03 Issued: 2024-05-03

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	18937	20046	90	23246	22232
APR-JUL	16632	17556	88	20666	19946
APR-AUG	17786	18897	89	21954	21121
JAN-SEP	24819	25928	87	29128	29736
JAN-JUL	22514	23438	85	26548	27450
OCT-SEP	28664	29772	87	32972	34287

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2024-05-03 Issued: 2024-05-03

APR-SEP	18609	19994	90	23354	22232
APR-JUL	16327	17559	88	20901	19946
APR-AUG	17487	18696	89	22160	21121
JAN-SEP	24491	25876	87	29236	29736
JAN-JUL	22209	23441	85	26783	27450
OCT-SEP	28335	29721	87	33081	34287

Reference

ESP with 0 Days QPF Ensemble: 2024-05-03 Issued: 2024-05-03

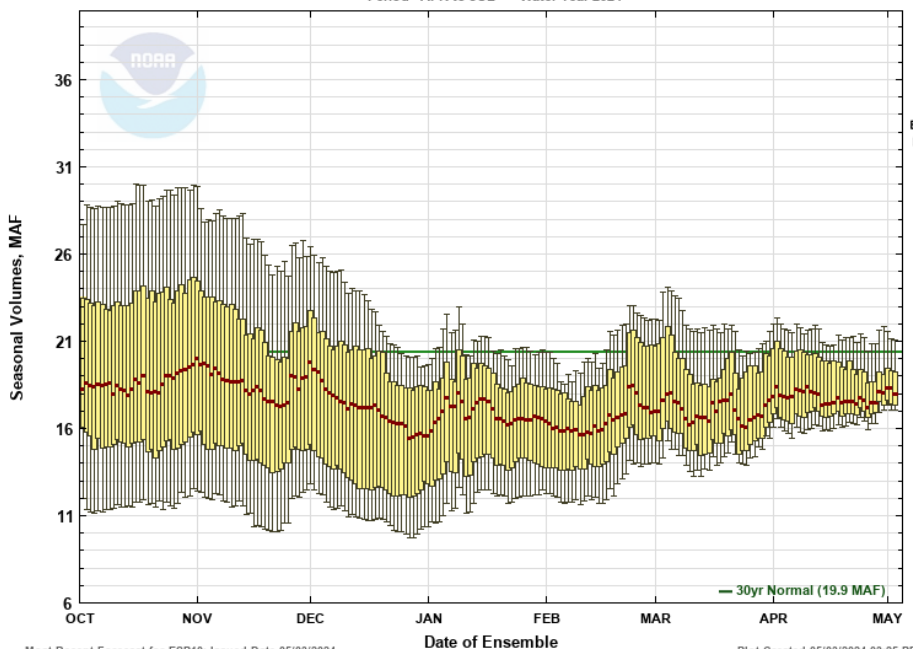
APR-SEP	18349	19745	89	23432	22232
APR-JUL	16131	17433	87	20983	19946
APR-AUG	17229	18618	88	22238	21121
JAN-SEP	24231	25627	86	29314	29736
JAN-JUL	22013	23315	85	26865	27450
OCT-SEP	28076	29472	86	33158	34287

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

Water Supply Forecasts

SNAKE - LOWER GRANITE DAM

Period APR to JUL -- Water Year 2024



Most Recent Forecast for ESP10: Issued Date 05/03/2024

Plot Created 05/03/2024 03:25 PM

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Libby : May Runoff Forecast & Flood Risk Management Calculation

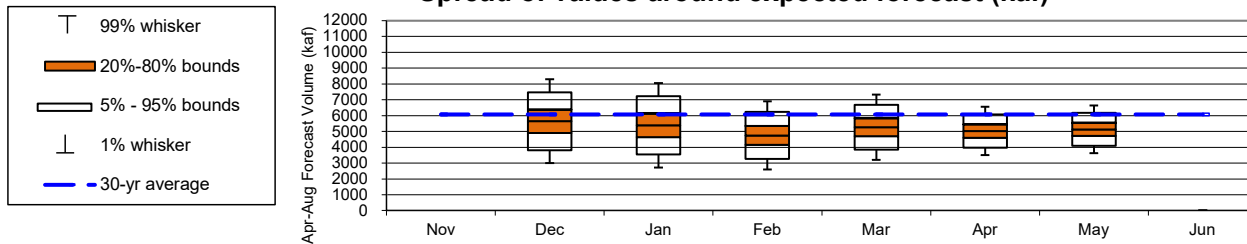
WY 2024

Runoff Forecast	May	1991-2020 Average	1991 - 2020 Percent of Average	1929-2020 Average	1929 - 2020 Percent of Average
Most Probable Runoff Volume: Apr-Aug (kaf)	5129	6080	84%	6259	82%
Most Probable Runoff Volume: Apr-Jul (kaf)	4697	5570	84%	5708	82%
Most Probable Runoff Volume: May-Jul (kaf)	4240	5014	85%	5183	82%

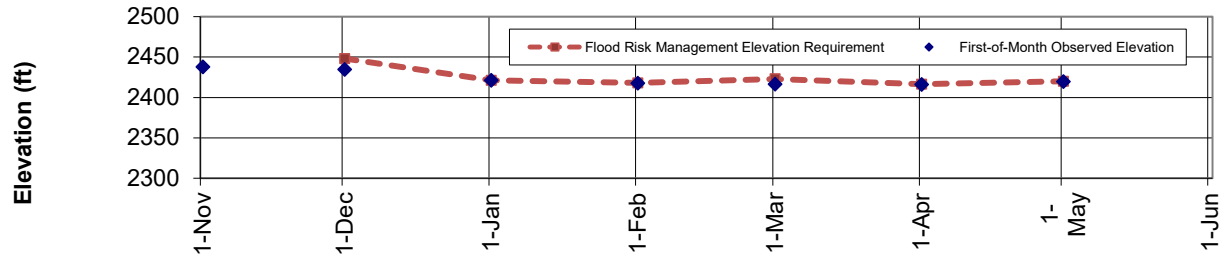
Forecast/Reservoir Data	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast (kaf)		5642	5385	4743	5261	5026	5129	
First-of-Month Elev (ft)	2437.9	2434.8	2421.2	2417.5	2416.4	2415.9	2419.7	

Seasonal FRM Requirements	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr		
Flood Risk Management Space (kaf)	500	1613	1745	1547	1799	1658		
Flood Risk Management Elevation (ft)	2448.0	2421.3	2417.9	2423.0	2416.4	2420.1		

Spread of values around expected forecast (kaf)



Libby Flood Risk Management Elevations May- 2024



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 : May 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	Σ Jun:Jul					
Eureka RS, MT	Σ Oct:Apr Prcp	inches	6.4	89%	57.5	370.0
West Glacier, MT	Σ Oct:Apr Prcp	inches	17.5	88%	28.0	491.0
Cranbrook A, BC	Σ Oct:Apr Prcp	millimeters	151.4	77%	2.8	423.9
Fernie, BC	Σ Oct:Apr Prcp	millimeters	791.6	104%	0.6	482.9
Hawkins Lake, MT	1-May SWE	inches	20.7	78%	17.3	358.1
Stahl Peak, MT	1-May SWE	inches	32.0	84%	16.7	535.7
East Creek, BC	1-May SWE	millimeters	834.5	87%	0.6	475.7
Moyie Mountain, BC	1-May SWE	millimeters	170.3	45%	0.9	155.0
Sunshine Village, AB	1-May SWE	millimeters	494.8	81%	1.3	623.5
Akamina Pass, AB	1-May SWE	millimeters	215.2	59%	0.6	118.3
South Racehorse Creek, AB	1-May SWE	millimeters	276.3	78%	0.8	229.3
Intercept			1		408.0	408.0
Forecast Inflow	May-August	kaf				4671.3
Observed Inflow	April	kaf	457.3			457.3
May Forecast	April - August	kaf				5128.6

Data used in Libby Water Supply Forecast

Climate Data	Jun-23	Jul-23
SOI	0.3	-0.3

Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Eureka RS, MT (inch)	0.6	1.9	0.7	1.1	0.6	0.8	0.8	
West Glacier, MT (inch)	1.5	4.1	2.7	3.4	2.5	2.0	1.3	
Cranbrook A, BC (mm)	4.8	22.2	27.4	24.1	25.3	23.8	23.8	
Fernie, BC (mm)	98.3	129.8	243.3	87.6	96.4	89.9	46.2	

Snow Water Equiv	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
Hawkins Lake, MT (inch)				8.7	15.6	20.5	20.7	
Stahl Peak, MT (inch)			11.9	21.4	26.3	30.7	32.0	
East Creek, BC (mm)				433.0	602.5	711.5	834.5	
Moyie Mountain, BC (mm)			85.0	138.4	226.5	270.0	170.3	
Sunshine Village, AB (mm)			168.7	233.9	370.1	372.2	494.8	
Akamina Pass, AB (mm)				211.6	289.5	383.9	215.2	
South Racehorse Creek, AB (mm)				147.6	264.0	340.7	276.3	

	c	Jan	Feb	Mar	Apr	May	Jun
Libby Inflow Volume (kaf)		161.5	192.0	226.6	457.3		

Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
Libby FOM Elev (feet)	2437.9	2434.8	2421.2	2417.5	2416.4	2415.9	2419.7	

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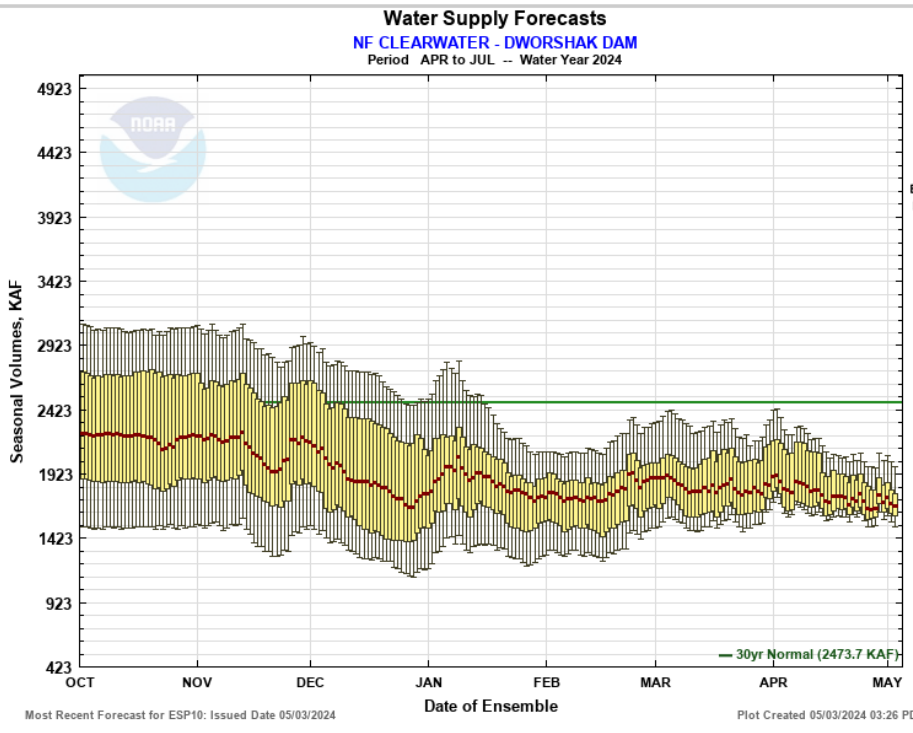
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NF CLEARWATER - DWORSHAK DAM (DWR11) Forecasts for Water Year 2024					
Official Water Supply					
ESP with 10 Days QPF Ensemble: 2024-05-03 Issued: 2024-05-03					
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	1629	1797	69	2114	2620
APR-JUL	1516	1677	68	1977	2474
JAN-SEP	2341	2510	71	2826	3543
JAN-JUL	2228	2389	70	2689	3397
OCT-SEP	2640	2809	70	3125	3998
Experimental Water Supply					
HEFS with 15 days EQPF Ensemble: 2024-05-03 Issued: 2024-05-03					
APR-SEP	1660	1836	70	2141	2620
APR-JUL	1546	1709	69	2005	2474
JAN-SEP	2372	2548	72	2854	3543
JAN-JUL	2258	2421	71	2717	3397
OCT-SEP	2671	2848	71	3153	3998
Reference					
ESP with 0 Days QPF Ensemble: 2024-05-03 Issued: 2024-05-03					
APR-SEP	1633	1778	68	2107	2620
APR-JUL	1523	1656	67	1971	2474
JAN-SEP	2345	2491	70	2819	3543
JAN-JUL	2235	2368	70	2683	3397
OCT-SEP	2644	2790	70	3119	3998
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		Forecast Ensemble	



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Dworshak Flood Risk Management Requirements:
<https://www.nwd-wc.usace.army.mil/report/colsum/>