

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 **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: 2023 Water Management Plan, page 15 - <https://pweb.crohms.org/tmt/documents/wmp/2023/>

Hungry Horse Dam – Official Water Supply Forecast JANUARY 2023

Below are the volumes for the January 2023 final forecast for Hungry Horse:

- Jan-Jul: 2,300 kaf (109%)
- Apr-Aug: 2,100 kaf (104%)
- Apr-Jul: 2120 kaf (107%)
- May-Sep: 1950 kaf (110%)

The minimum flows downstream of Hungry Horse are as follows:

- Columbia Falls: 3,500 cfs
- Hungry Horse: 900 cfs

Joel Fenolio, P.E.

Water Management - Operations Team Supervisor
U.S. Bureau of Reclamation
Columbia - Pacific Northwest Region
Boise, ID 83706

Northwest River Forecast Center

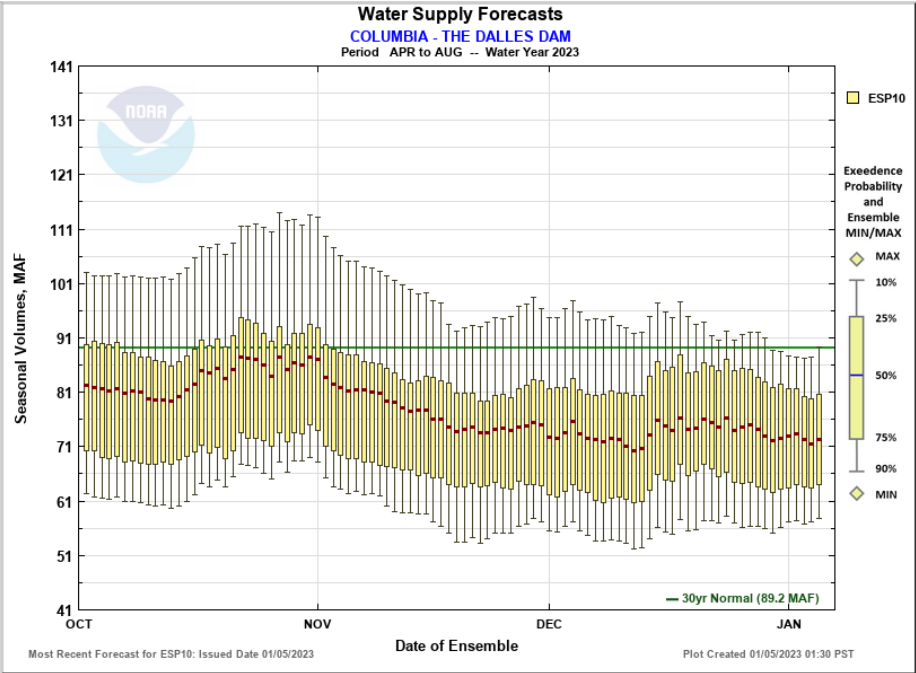
Water Supply Forecasts

- Home
- Data/Normals
- Rankings
- ENSO / Runoff
- Adjustments
- Verification
- Verify All Years
- Archive
- Monthly Water Supply Forecasts
- Help

Choose Date: Archive:

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2023					
Official Water Supply					
ESP with 10 Days QPF Ensemble: 2023-01-05 Issued: 2023-01-05					
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	61885	77502	82	94869	94166
APR-JUL	52068	65109	79	81780	81933
APR-AUG	57830	72362	81	89454	89196
JAN-SEP	78139	96686	83	117319	115946
JAN-JUL	68412	84918	82	103820	103714
OCT-SEP	88496	107043	81	127677	132314
Experimental Water Supply					
HEFS with 15 days EQPF Ensemble: 2023-01-05 Issued: 2023-01-05					
APR-SEP	63561	82457	88	99016	94166
APR-JUL	53314	69650	85	86489	81933
APR-AUG	58758	77322	87	93885	89196
JAN-SEP	80979	101106	87	122636	115946
JAN-JUL	71191	89542	86	108759	103714
OCT-SEP	91336	111464	84	132994	132314
Reference					
ESP with 0 Days QPF Ensemble: 2023-01-05 Issued: 2023-01-05					
APR-SEP	63054	81313	86	98663	94166
APR-JUL	53265	69288	85	86444	81933
APR-AUG	58287	76748	86	93743	89196
JAN-SEP	79473	99709	86	121532	115946
JAN-JUL	69937	87071	84	107291	103714
OCT-SEP	89830	110067	83	131890	132314

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



Most Recent Forecast for ESP10: Issued Date 01/05/2023 Plot Created 01/05/2023 01:30 PST

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

Overlay

ESP10
 HEFS
 ESPO

Data Files

[CSV \(ESP10 / APR-AUG\)](#)

[Forecast Ensemble](#)



Commerce Home | NOAA | NWS Organization | NWRFC Site Map | Search

Freedom of Information Act | Privacy Policy | Information Quality | USA.gov | Career Opportunities

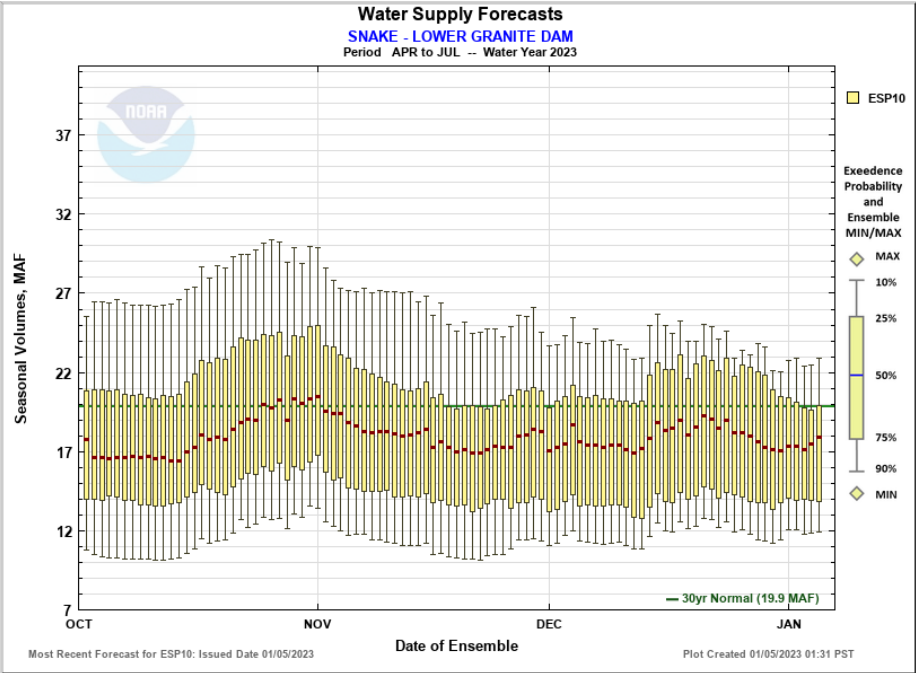
NOAA Northwest River Forecast Center
Water Supply Forecasts

- Home
- Data/Normals
- Rankings
- ENSO / Runoff
- Adjustments
- Verification
- Verify All Years
- Archive
- Monthly Water Supply Forecasts
- Help

Choose Date: 01/05/2023 Archive: Water Year

SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2023					
Official Water Supply					
ESP with 10 Days QPF Ensemble: 2023-01-05 Issued: 2023-01-05					
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	Average	10 %	
APR-SEP	14010	20424	92	25744	22232
APR-JUL	12058	17996	90	23045	19946
APR-AUG	13034	19243	91	24390	21121
JAN-SEP	19996	26458	89	35062	29736
JAN-JUL	18028	23877	87	32469	27450
OCT-SEP	23466	29928	87	38532	34287
Experimental Water Supply					
HEFS with 15 days EQPF Ensemble: 2023-01-05 Issued: 2023-01-05					
APR-SEP	14430	21121	95	27188	22232
APR-JUL	12431	18514	93	24427	19946
APR-AUG	13432	19870	94	25869	21121
JAN-SEP	20801	27362	92	36121	29736
JAN-JUL	18791	24900	91	33403	27450
OCT-SEP	24271	30831	90	39591	34287
Reference					
ESP with 0 Days QPF Ensemble: 2023-01-05 Issued: 2023-01-05					
APR-SEP	14359	20994	94	26266	22232
APR-JUL	12383	18557	93	23659	19946
APR-AUG	13364	19807	94	25042	21121
JAN-SEP	20406	27529	93	35185	29736
JAN-JUL	18395	25008	91	32407	27450
OCT-SEP	23876	30999	90	38655	34287

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



Most Recent Forecast for ESP10: Issued Date 01/05/2023 Plot Created 01/05/2023 01:31 PST

Overlay

ESP10 HEFS ESPO

Data Files

CSV (ESP10 / APR-JUL)

Forecast Ensemble



Commerce Home | NOAA | NWS Organization | NWRFC Site Map | Search

Freedom of Information Act | Privacy Policy | Information Quality | USA.gov | Career Opportunities

Libby : January Runoff Forecast & Flood Risk Management Calculation

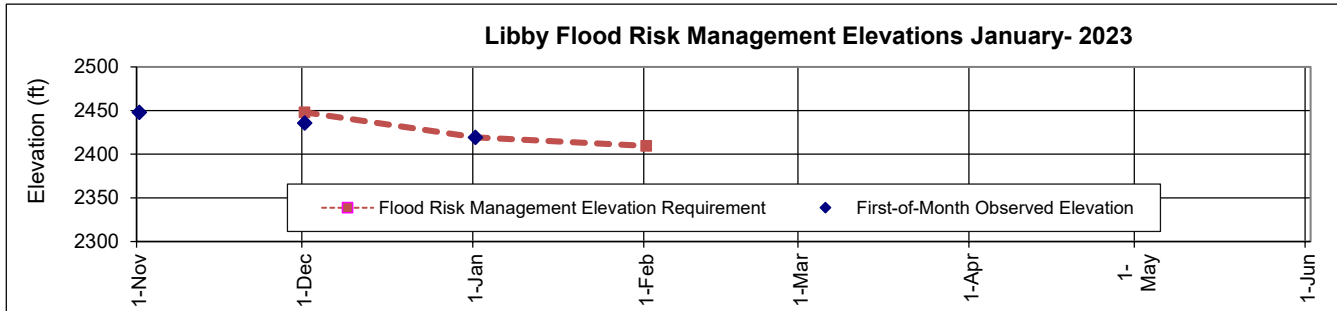
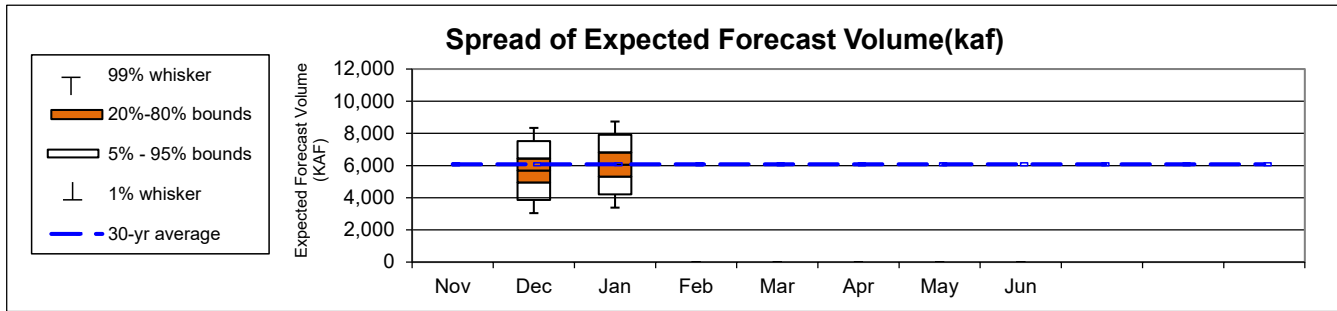
WY 2023

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)	6061	6080	100%	6259	97%
Most Probable Runoff Volume: Apr-Jul (kaf)	5553	5570	100%	5708	97%
Most Probable Runoff Volume: May-Jul (kaf)	4998	5014	100%	5183	96%

Flood Risk Management	January
31-Jan Flood Risk Management Space (kaf)	2054
31-Jan Flood Risk Management Elevation (ft)	2409.5

Forecast/Reservoir Data	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast (kaf)		5692	6061					
First-of-Month Elev (ft)	2448.0	2435.9	2419.3					

Seasonal FRM Requirements	30 Nov	31-Dec	31-Jan	28-Feb	31-Mar	30 Apr		
Flood Risk Management Space (kaf)	500	1689	2054					
Flood Risk Management Elevation (ft)	2448.0	2419.3	2409.5					



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, Jason Chang (206) 764-3528, Lumas Helaire (206) 316-3875, Ethan Cheng (206) 316-3909, or Kevin Shaffer (206) 764-3660.
- 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:

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		95.28	238.2
Eureka RS, MT	ΣOct:Dec Prcp	inches	3.05	82%	141.74	432.3
West Glacier, MT	ΣOct:Dec Prcp	inches	9.26	98%	58.42	541.0
Cranbrook A, BC	ΣOct:Dec Prcp	millimeters	73.70	76%	4.58	337.5
Fernie, BC	ΣOct:Dec Prcp	millimeters	329.08	87%	1.20	394.9
Hawkins Lake, MT	1-Jan SWE	inches				
Stahl Peak, MT	1-Jan SWE	inches	15.60	92%	34.63	540.2
East Creek, BC	1-Jan SWE	millimeters				
Moyie Mountain, BC	1-Jan SWE	millimeters	219.00	121%	1.59	347.1
Sunshine Village, AB	1-Jan SWE	millimeters	236.14	87%	2.14	505.3
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				6061.0

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	1.57					
West Glacier, MT (inch)	2.02	2.76	4.48					
Cranbrook A, BC (mm)	13.00	24.50	36.20					
Fernie, BC (mm)	98.81	118.00	112.27					

Snow Water Equiv	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Hawkins Lake, MT (inch)								
Stahl Peak, MT (inch)			16					
East Creek, BC (mm)								
Moyie Mountain, BC (mm)			219					
Sunshine Village, AB (mm)			236					
Akamina Pass, AB (mm)								
South Racehorse Creek, AB (mm)								

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

Reservoir Elevation	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Libby FOM Elev (feet)	2448.0	2435.9	2419.3					

WHORLEY.KASI.A
 NNE.1402720006
 Digitally signed by WHORLEY.KASI.ANNE.14027200
 06
 Date: 2023.01.06 14:27:29 -08'00'

Kasi Whorley, P.E. signing for William Proctor
 Approving Official
 Ch., Hydrologic Engineering and Power Branch

BASDEKAS.LEO
 N.1607343833
 Digitally signed by BASDEKAS.LEON.1607343833
 Date: 2023.01.06 14:35:01 -08'00'

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



Northwest River Forecast Center Water Supply Forecasts

- Home
- Data/Normals
- Rankings
- ENSO / Runoff
- Adjustments
- Verification
- Verify All Years
- Archive
- Monthly Water Supply Forecasts
- Help

Choose Date: 01/05/2023 Archive: Water Year

NF CLEARWATER - DWORSHAK DAM (DWR11) Forecasts for Water Year 2023

Official Water Supply

ESP with 10 Days QPF Ensemble: 2023-01-05 Issued: 2023-01-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	1717	2316	88	3113	2620
APR-JUL	1611	2178	88	2962	2474
JAN-SEP	2495	3086	87	4205	3543
JAN-JUL	2389	2952	87	4030	3397
OCT-SEP	2788	3378	84	4497	3998

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2023-01-05 Issued: 2023-01-05

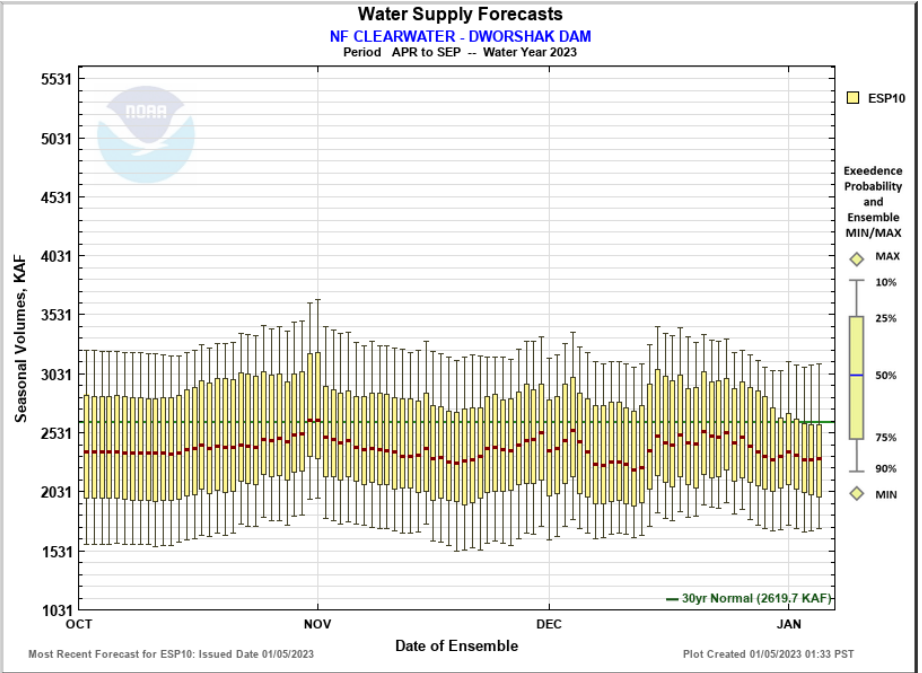
APR-SEP	1801	2387	91	3115	2620
APR-JUL	1694	2254	91	2964	2474
JAN-SEP	2631	3312	93	4367	3543
JAN-JUL	2481	3178	94	4188	3397
OCT-SEP	2923	3604	90	4659	3998

Reference

ESP with 0 Days QPF Ensemble: 2023-01-05 Issued: 2023-01-05

APR-SEP	1861	2480	95	3227	2620
APR-JUL	1752	2343	95	3079	2474
JAN-SEP	2592	3353	95	4416	3543
JAN-JUL	2459	3214	95	4233	3397
OCT-SEP	2885	3645	91	4708	3998

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

Overlay

ESP10 | HEFS | ESPO

Data Files

CSV (ESP10 / APR-JUL)

Forecast Ensemble



[Commerce Home](#) | [NOAA](#) | [NWS Organization](#) | [NWRFC Site Map](#) | [Search](#)

[Freedom of Information Act](#) | [Privacy Policy](#) | [Information Quality](#) | [USA.gov](#) | [Career Opportunities](#)