

The Dalles Dam official water supply forecast is computed by RFC on the 5th working day of the month. The April final forecast of April-Aug runoff volume is used to set spring flow objectives and informs decisions on juvenile fish transportation at McNary Dam. See the 2013 Water Management Plan (Table 4) for more info.

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(TDAO3) THE DALLES Forecasts for Water Year 2013 Ensemble Date: 2013-04-04 Issue Date: 2013-04-05					
Official Forecast with 10 days of QPF					
Forecast Period	Forecast Are in KAF				30 Year Average
	90 %	50 %	% Average	10 %	
APR-SEP	82790	88613	96	98359	92704
APR-JUL	68700	73700	92	84270	79855
APR-AUG	76696	82594	94	92731	87532
JAN-JUL	86677	91677	90	102247	101368
with 3 days of QPF					
APR-SEP	81203	87248	94	97438	92704
APR-JUL	67272	73152	92	84085	79855
APR-AUG	75770	81811	93	92242	87532
JAN-JUL	85249	91129	90	102062	101368
with 0 days of QPF					
APR-SEP	76929	83817	90	94631	92704
APR-JUL	63973	70231	88	80102	79855
APR-AUG	71712	78858	90	88999	87532
JAN-JUL	81950	88208	87	98079	101368

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

Overlay

☐ ESP10 ☐ ESP3 ☐ ESP0

Data Files

Zoomout

CSV (ESP10 / APR-SEP)

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☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days

Note: Compatible with the latest browsers (Chrome, Firefox, Safari, and Internet Explorer (ie9+)).

APR-SEP

☐ Link to image of plot

The Lower Granite Dam official water supply forecast is computed by RFC on the 5th working day of the month. The April final forecast of April-July runoff volume is used to set spring flow objectives at Lower Granite and informs decisions on juvenile fish transportation at Lower Snake River projects. See the 2013 Water Management Plan (Table 4) for more info.

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(LGDW1) LOWER GRANITE DAM Forecasts for Water Year 2013 Ensemble Date: 2013-04-04 Issue Date: 2013-04-05					
Official Forecast with 10 days of QPF					
Forecast Period	Forecast Are in KAF				30 Year Average
	90 %	50 %	% Average	10 %	
APR-SEP	16996	18909	85	21749	22279
APR-JUL	14660	16574	84	19315	19848
APR-AUG	15811	17624	84	20598	21091
JAN-JUL	19722	21636	79	24377	27440
with 3 days of QPF					
APR-SEP	16381	18256	82	21399	22279
APR-JUL	14302	15976	80	18996	19848
APR-AUG	15346	17197	82	20258	21091
JAN-JUL	19364	21038	77	24058	27440
with 0 days of QPF					
APR-SEP	15354	17387	78	20565	22279
APR-JUL	13280	15090	76	18059	19848
APR-AUG	14290	16300	77	19380	21091
JAN-JUL	18342	20152	73	23121	27440

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

Overlay

☐ ESP10 ☐ ESP3 ☐ ESP0

Data Files

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☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days

Note: Compatible with the latest browsers (Chrome, Firefox, Safari, and Internet Explorer (ie9+)).

APR-SEP

☐ Link to image of plot

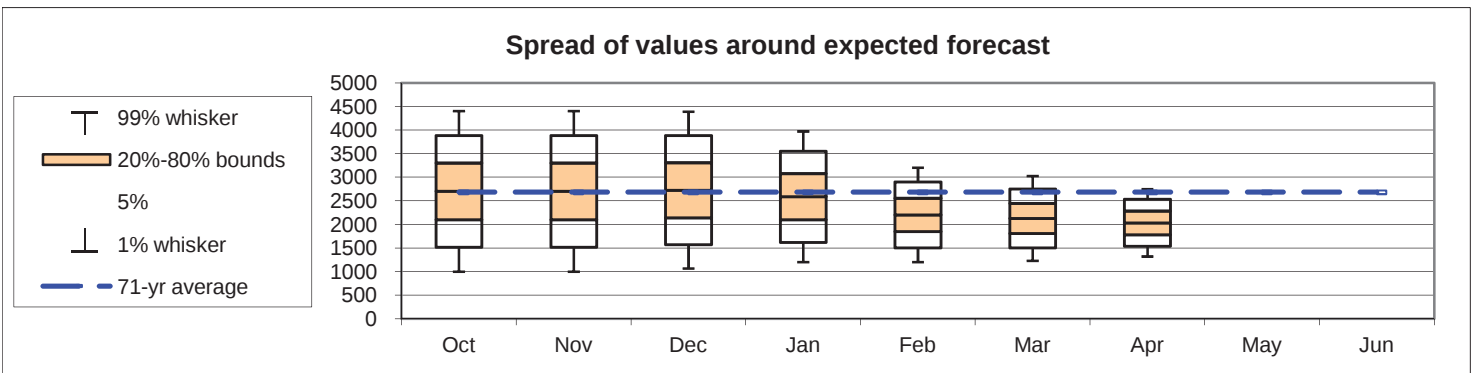
Dworshak : April Runoff Forecast & Flood Control Calculation

WY 2013

Runoff Forecast and Non-Shifted Flood Control			
Most Probable Runoff Volume	Apr-Jul	2036	KAF
	May-Jul	1502	KAF
30-Apr Flood Control Space		544	KAF
30-Apr Flood Control Elevation		1568.5	ft

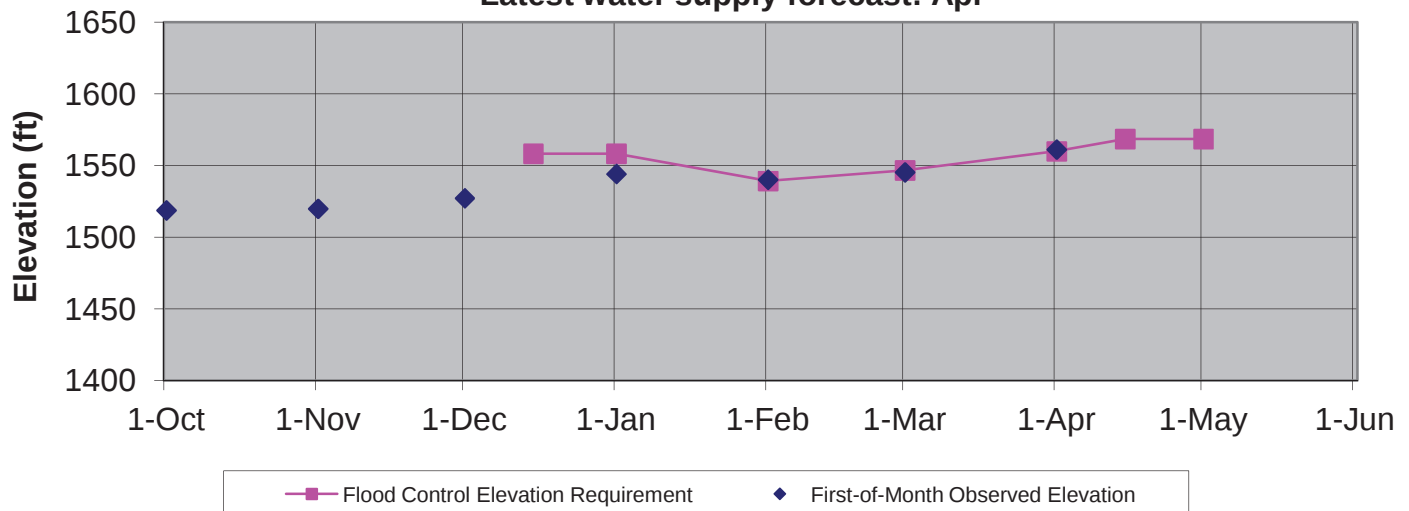
1929-1999 Average	Percent of Average
2683	76%
1980	76%

Seasonal Flood Control (assumes no shift of flood control space to Grand Coulee)									
Forecast Date>>	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Jul Runoff Forecast	2701	2701	2727	2587	2202	2128	2036		
First-of-Month Elev	1518.8	1519.9	1527.3	1544.2	1540.2	1545.3	1561.2		
Date >>		15-Dec	31-Dec	31-Jan	28-Feb	31-Mar	15-Apr	30-Apr	
Flood Control Space	--	700	700	970	867	675	544	544	
Flood Control Elevation	--	1558.2	1558.2	1539.2	1546.7	1560.0	1568.5	1568.5	



Dworshak Flood Control Elevations - 2013

Latest water supply forecast: Apr



- Notes:
1. The given forecast is the official Corps of Engineers forecast for Dworshak. If you have any questions please contact Jeremy Giovando (509 527 7053), or Steve Hall (509 527 7550).
 2. Due to updated values for precipitation, snow or streamflow, subsequent forecasts may be different from the forecast published herein.
 3. 15-Dec and 31-Dec flood control space is fixed at 700 KAF.
 4. 15-Apr target elevation does not reflect flood control shift operation between Dworshak and Grand Coulee.
 5. 30-Apr target elevation may vary as runoff occurs throughout the month of April.

Dworshak : April Runoff Forecast & Flood Control Calculation

Apr-Jul Runoff Forecast Calculation:					
Variable	Month	Observed Value	% of Average	Regression Coefficient	Marginal Runoff (KAF)
		A		B	=A*B
SOI	Sep	0.20		123.36	24.7
Elk Butte SWE	1-Apr	29.70	73%	15.71	466.6
Hemlock Butte SWE	1-Apr	38.30	78%	15.31	586.4
Hoodoo Basin SWE	1-Apr	36.60	81%	13.92	509.5
Shanghi Summit SWE	1-Apr	16.30	62%	17.92	292.1
DWR January Inflow	Jan	158.08	78%	0.750	118.6
DWR February Inflow	Feb	162.05	59%	0.210	34.0
DWR March Inflow	Mar	331.20	84%	0.440	145.7
Intercept		1		-141.94	-141.9
1-Apr Forecast (KAF)					2035.6

Data Station	Sept	Nov	Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
Climate (Stdzd SOI)									
September SOI	0.20								
Precipitation (monthly depth, inches)									
Headquarters, ID		5.30	6.30						
Snow Water Equiv (first of month SWE depth, inches)									
Elk Butte, ID				12.6	21.0	25.9	29.7	--	--
Hemlock Butte, ID				15.1	25.6	32.0	38.3	--	--
Hoodoo Basin, MT				17.2	23.8	29.9	36.6	--	--
Pierce RS, ID				1.9	5.6	6.2			
Shanghi Summit, ID							16.3	--	--
Lost Lake, ID								--	--
Streamflow (monthly volume, KAF)				Jan	Feb	Mar	Apr	May	Jun
Dworshak Inflow				158	162	331	--	--	--

Approval: HEITSTUMAN.JOH
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 ou=PKI, ou=USA,
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 Date: 2013.04.05 14:58:39 -0700

Peter Brooks, P.E., D. WRE
 Ch., Hydrologic Engineering and Power Brar
 Columbia Basin Water Management Division

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(GCDW1) GRAND COULEE DAM Forecasts for Water Year 2013 Ensemble Date: 2013-04-04 Issue Date: 2013-04-05					
Official Forecast with 10 days of QPF					
Forecast Period	Forecast Are in KAF				30 Year Average
	90 %	50 %	% Average	10 %	
APR-SEP	56695	60685	101	66503	60110
APR-JUL	46392	49717	97	56460	51015
APR-AUG	53047	56383	99	62575	56763
JAN-JUL	54644	57969	97	64712	59599
with 3 days of QPF					
APR-SEP	55725	59798	99	66496	60110
APR-JUL	45738	49210	96	55831	51015
APR-AUG	52277	55882	98	62642	56763
JAN-JUL	53990	57462	96	64083	59599
with 0 days of QPF					
APR-SEP	53616	58764	98	64535	60110
APR-JUL	43995	48047	94	53701	51015
APR-AUG	50340	54294	96	60732	56763
JAN-JUL	52247	56299	94	61953	59599

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

Overlay
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Data Files

Zoomout

CSV (ESP10 / APR-SEP)

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☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days

Note: Compatible with the latest browsers (Chrome, Firefox, Safari, and Internet Explorer (ie9+)).

APR-SEP

Link to image of plot

The Libby Dam official water supply forecast is computed by Corps Seattle District on the 5th working day of the month. The April final forecast of April-Aug runoff volume is used to set VARQ flood control targets and refill flows. See 2013 Water Management Plan (Table 4).

Libby : April Runoff Forecast & Flood Control Calculation

WY 2013

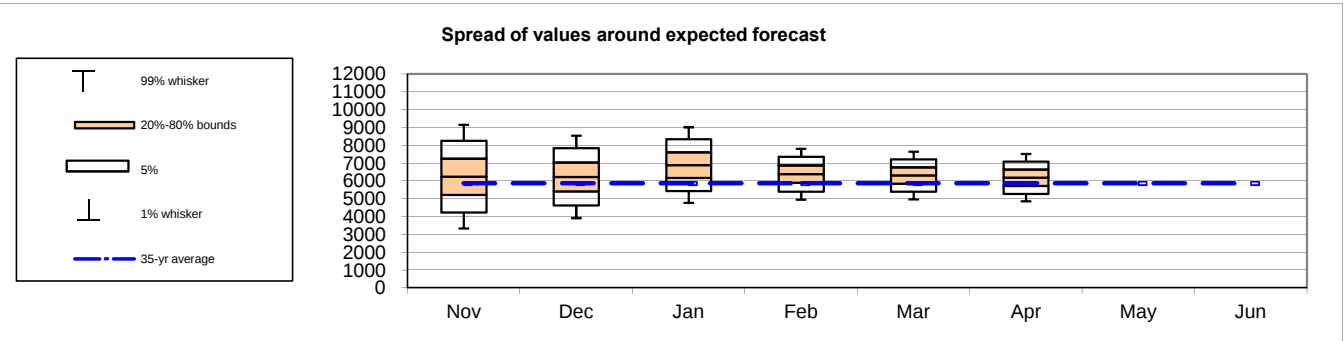
Runoff Forecast and Flood Control

Most Probable Runoff Volume:	Apr-Aug	6189	KAF
	Apr-Jul	5596	KAF
	May-Jul	5064	KAF
30-Apr Flood Control Space		1972	KAF
30-Apr Flood Control Elevation		2411.8	ft

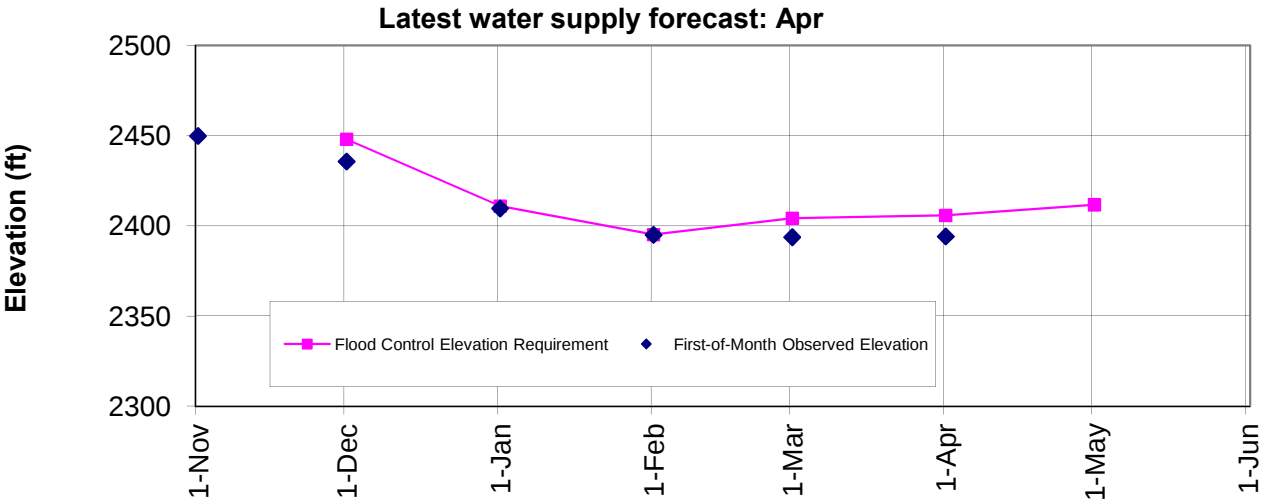
1981-2010 Average	Percent of Average	1929-1999 Average	Percent of Average
5885	105%	6337	98%
5342	105%	5771	97%
4821	105%	5247	97%

Seasonal Flood Control		VARQ Flood Control Implemented						
Forecast Date >>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Apr-Aug Runoff Forecast	6245	6238	6898	6384	6315	6189		
First-of-Month Elev	2449.9	2435.7	2409.7	2395.1	2393.8	2394.2		

Date >>	30-Nov	31-Dec	31-Jan	28/29-Feb	31-Mar	30-Apr
Flood Control Space	500	2000	2534	2238	2186	1972
Flood Control Elevation	2448.0	2411.0	2395.2	2404.3	2405.8	2411.8



Libby Flood Control Elevations - 2013



- Notes:
- 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.
 - 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.
 - Precipitation data was missing for Fernie for March 4-7 and March 28-31. Nearby Sites (Cranbrook and Sparwood) showed very little precipitation over that period, (respectively 6.9 mm and 8.0 mm) so the Fernie monthly total was used with the average of the 2 sites (7.5 mm) inserted for that data gap.

Libby : April Runoff Forecast & Flood Control Calculation

Apr-Aug Runoff Forecast Calculation:						
Variable	Month(s)	Units	Observed Value	Percent of Average	Regression Coefficient	Marginal Runoff (KAF)
			A		B	=A*B
QBO	Σ Jan:Mar		-48.06		-1.8	88.1
PNA	Σ Oct:Jan		-3.45		-83.9	289.6
West Glacier, MT	Σ Dec:Mar Prcp	inches	11.18	110%	51.3	574.1
Fernie, BC	Σ Dec:Mar Prcp	inches	16.90	96%	41.4	699.8
Sunshine Village, AB	1-Apr SWE	inches	21.89	99%	52.4	1148.0
East Creek, BC	1-Apr SWE	inches	32.32	96%	25.8	835.1
Stahl Peak, MT	1-Apr SWE	inches	34.50	99%	27.3	941.2
Gardiner Creek, AB	1-Apr SWE	inches	26.26	113%	18.1	476.0
Three Isle Lake, AB	1-Apr SWE	inches	17.36	91%	51.2	889.5
Intercept			1		247.9	247.9
1-Apr Forecast (KAF)					Σ	6189.3

Data used in Libby Water Supply Forecast

WY 2013

Climate Data	Jan-12	Feb-12	Mar-12	Jun-12	Jul-12	Oct-12	Nov-12	Dec-12	Jan-13
SOI				-0.40	0.00				
QBO	-16.07	-15.25	-16.74						
PNA						-1.13	-1.06	-1.31	0.05
Precipitation Data	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Units
Eureka, MT	1.24	0.76	1.21	0.31	0.21				inch
Libby 1 NE RS, MT	1.94	2.52	4.39	0.91	0.27				inch
West Glacier, MT	3.06	4.59	4.51	1.92	2.04	2.71			inch
Fernie, BC	136.60	153.20	186.00	54.00	45.50	143.70			mm
Snow Water Equiv	1-Jan			1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Floe Lake, BC			429	532	604				mm
Sunshine Village, AB			319	370	416	556			mm
East Creek, BC			459	533	635	821			mm
Stahl Peak, MT			14	20	25	35			inch
Gardiner Creek, AB			365	479	540	667			mm
Three Isle Lake, AB			249	294	339	441			mm
Lost Creek South, AB			355	452	547				mm
Morrissey Ridge, BC			331	428	514				mm
Hawkins Lake, MT			14	19	22				inch
Streamflow	Jan			Feb	Mar	Apr	May	Jun	Units
Libby Inflow Volume			213.0	179.9	260.0				KAF
Reservoir Elevation	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	Units
Libby FOM Elev	2449.9	2435.7	2409.7	2395.1	2393.8	2394.2			feet

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(ALFW1) ALBENI FALLS DAM Forecasts for Water Year 2013 Ensemble Date: 2013-04-04 Issue Date: 2013-04-05					
Official Forecast with 10 days of QPF					
Forecast Period	Forecast Are in KAF				30 Year Average
	90 %	50 %	% Average	10 %	
APR-SEP	10588	12067	94	13734	12815
APR-JUL	9698	10957	93	12652	11777
APR-AUG	10185	11610	94	13256	12354
JAN-JUL	11921	13180	93	14875	14189
with 3 days of QPF					
APR-SEP	10511	11832	92	13739	12815
APR-JUL	9616	10816	92	12606	11777
APR-AUG	10129	11384	92	13264	12354
JAN-JUL	11839	13039	92	14829	14189
with 0 days of QPF					
APR-SEP	10246	11441	89	13398	12815
APR-JUL	9356	10490	89	12310	11777
APR-AUG	9867	10982	89	12930	12354
JAN-JUL	11579	12713	90	14533	14189

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

Overlay
☐ ESP10 ☐ ESP3 ☐ ESP0

Data Files

[Zoomout](#)

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

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☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days

Note: Compatible with the latest browsers (Chrome, Firefox, Safari, and Internet Explorer (ie9+)).

APR-SEP

[Link to image of plot](#)

The official Hungry Horse Dam water supply forecast is computed by the Bureau of Reclamation on the 5th working day of the month from January-June.

The APRIL final forecast of the *May-September* runoff volume is used to set VARQ flood control targets and refill flows. See the [2013 Water Management Plan](#) (Table 4) for more info.

April 03, 2013 - April final forecast of volumes (kaf) for Hungry Horse inflow:

- Apr – Jul: 1,935 kaf (103%)
- Apr – Aug: 2,002 kaf (103%)
- May – Sep: 1,750 kaf (103%)
- Jan - Jul: 2,164 kaf (103%)

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John Roache, Civil Engineer
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U.S. Bureau of Reclamation
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