

The JULY Final WSF sets BiOp actions as defined in the table below where highlighted.

Other projects are provided for informational purposes only.

For flood control requirements, see: <http://www.nwd.usace.army.mil/Missions/Water/Columbia/FloodControl>

Forecast Point	Forecast period	Forecast	BiOp Actions to be Determined
Hungry Horse	April – August Provided by Reclamation	January, February, March Final	Sets min. flows at Hungry Horse and Columbia Falls
	May – September Provided by Reclamation	January, February, March Final	Sets VARQ FRM targets
		April Final	Sets VARQ FRM targets and VARQ refill flows
		May, June Final	Sets VARQ refill flows
The Dalles	April – September Provided by NWRFC	March Final	Sets CRWMP adjustments at Grand Coulee
	April – August Provided by NWRFC	April Final	Sets spring flow objective at McNary Dam
		May Final	Sets end of September draft limits at Hungry Horse and Libby
		July Final	Sets end of August draft limit at Grand Coulee
Lower Granite	April – July Provided by NWRFC	April Final	Sets spring flow objective at Lower Granite
		June Final	Sets summer flow objective at Lower Granite
Libby	April – August Provided by Corps Seattle District	December Final	Sets end of December variable draft target
		January, February, March Final	Sets VARQ FRM targets
		April Final	Sets VARQ FRM targets and VARQ refill flows
		May Final	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
		June Final	VARQ refill flows
Dworshak	April – July Provided by Corps Walla Walla District	January to June Final	Manage for reservoir FRM and refill

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SF FLATHEAD - HUNGRY HORSE DAM (HHWM8)					
Forecasts for Water Year 2016					
Official Forecast					
- 10 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	1743	1753	88	1783	1988
APR-JUL	1648	1649	88	1658	1871
APR-AUG	1703	1706	88	1728	1936
JAN-SEP	2023	2033	92	2063	2215
JAN-JUL	1928	1929	92	1938	2098
OCT-SEP	2168	2177	89	2208	2447
- 5 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	1744	1759	88	1803	1988
APR-JUL	1648	1652	88	1670	1871
APR-AUG	1703	1711	88	1738	1936
JAN-SEP	2024	2039	92	2083	2215
JAN-JUL	1928	1932	92	1950	2098
OCT-SEP	2168	2184	89	2228	2447
- 0 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	1720	1737	87	1782	1988
APR-JUL	1629	1638	88	1661	1871
APR-AUG	1679	1693	87	1729	1936
JAN-SEP	2000	2018	91	2062	2215
JAN-JUL	1909	1918	91	1941	2098
OCT-SEP	2145	2162	88	2207	2447
Move the mouse over the desired "Forecast Period" to display a graph.					

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COLUMBIA - THE DALLES DAM (TDAO3)					
Forecasts for Water Year 2016					
Official Forecast					
- 10 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	83283	83877	90	85784	92704
APR-JUL	72777	72972	91	73318	79855
APR-AUG	78802	79260	91	80066	87532
JAN-SEP	108315	108909	95	110817	114216
JAN-JUL	97810	98004	97	98350	101368
OCT-SEP	123829	124424	95	126331	130518
- 5 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	83035	83925	91	85796	92704
APR-JUL	72576	72905	91	73478	79855
APR-AUG	78632	79234	91	80401	87532
JAN-SEP	108067	108957	95	110828	114216
JAN-JUL	97608	97937	97	98511	101368
OCT-SEP	123582	124472	95	126343	130518
- 0 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	82379	83212	90	85835	92704
APR-JUL	71996	72514	91	73038	79855
APR-AUG	77851	78727	90	79910	87532
JAN-SEP	107411	108244	95	110867	114216
JAN-JUL	97028	97547	96	98070	101368
OCT-SEP	122926	123759	95	126382	130518
Move the mouse over the desired "Forecast Period" to display a graph.					

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SNAKE - LOWER GRANITE DAM (LGDW1)					
Forecasts for Water Year 2016					
Official Forecast					
- 10 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	18789	18840	85	18973	22279
APR-JUL	16475	16481	83	16491	19848
APR-AUG	17612	17636	84	17690	21091
JAN-SEP	26404	26454	89	26588	29872
JAN-JUL	24089	24095	88	24106	27440
OCT-SEP	30252	30302	87	30436	34667
- 5 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	18796	18844	85	18995	22279
APR-JUL	16473	16483	83	16499	19848
APR-AUG	17613	17639	84	17702	21091
JAN-SEP	26411	26459	89	26610	29872
JAN-JUL	24088	24098	88	24113	27440
OCT-SEP	30259	30307	87	30458	34667
- 0 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	18746	18796	84	18940	22279
APR-JUL	16435	16450	83	16470	19848
APR-AUG	17568	17598	83	17664	21091
JAN-SEP	26361	26410	88	26554	29872
JAN-JUL	24050	24064	88	24084	27440
OCT-SEP	30208	30258	87	30402	34667
Move the mouse over the desired "Forecast Period" to display a graph.					

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KOOTENAI - LIBBY DAM (LYDM8)					
Forecasts for Water Year 2016					
Official Forecast					
- 10 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	5524	5575	89	5804	6254
APR-JUL	4927	4930	92	4950	5342
APR-AUG	5279	5293	90	5372	5885
JAN-SEP	6209	6260	91	6489	6914
JAN-JUL	5612	5615	94	5635	6002
OCT-SEP	7027	7078	91	7307	7806
- 5 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	5510	5576	89	5784	6254
APR-JUL	4920	4925	92	4973	5342
APR-AUG	5269	5290	90	5411	5885
JAN-SEP	6195	6261	91	6469	6914
JAN-JUL	5605	5610	93	5658	6002
OCT-SEP	7013	7079	91	7287	7806
- 0 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	5485	5569	89	5783	6254
APR-JUL	4907	4918	92	4984	5342
APR-AUG	5252	5282	90	5408	5885
JAN-SEP	6170	6254	90	6468	6914
JAN-JUL	5592	5603	93	5669	6002
OCT-SEP	6988	7072	91	7286	7806
Move the mouse over the desired "Forecast Period" to display a graph.					

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NF CLEARWATER - DWORSHAK DAM (DWRI1)					
Forecasts for Water Year 2016					
Official Forecast					
- 10 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	2178	2183	85	2200	2575
APR-JUL	2069	2069	86	2071	2419
JAN-SEP	3386	3391	98	3408	3445
JAN-JUL	3276	3277	100	3279	3289
OCT-SEP	3741	3746	96	3763	3891
- 5 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	2178	2184	85	2210	2575
APR-JUL	2069	2069	86	2073	2419
JAN-SEP	3386	3391	98	3418	3445
JAN-JUL	3276	3277	100	3281	3289
OCT-SEP	3741	3746	96	3773	3891
- 0 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	2162	2169	84	2191	2575
APR-JUL	2055	2056	85	2060	2419
JAN-SEP	3370	3377	98	3399	3445
JAN-JUL	3263	3264	99	3268	3289
OCT-SEP	3725	3732	96	3754	3891
Move the mouse over the desired "Forecast Period" to display a graph.					

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Overlay

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Grand Coulee Dam forecasts are not used for implementation of BiOp actions.
This forecast from NWRFC is provided for informational purposes only.

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COLUMBIA - GRAND COULEE DAM (GCDW1)					
Forecasts for Water Year 2016					
Official Forecast					
- 10 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	54748	55294	92	57122	60110
APR-JUL	47529	47720	94	48046	51015
APR-AUG	51881	52322	92	53101	56763
JAN-SEP	65881	66427	97	68255	68694
JAN-JUL	58662	58853	99	59179	59599
OCT-SEP	74176	74722	97	76550	76824
- 5 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	54496	55240	92	56873	60110
APR-JUL	47315	47654	93	48181	51015
APR-AUG	51697	52274	92	53348	56763
JAN-SEP	65629	66373	97	68006	68694
JAN-JUL	58448	58787	99	59314	59599
OCT-SEP	73924	74668	97	76301	76824
- 0 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	53845	54679	91	57018	60110
APR-JUL	46768	47275	93	47773	51015
APR-AUG	50974	51814	91	52918	56763
JAN-SEP	64978	65812	96	68151	68694
JAN-JUL	57901	58408	98	58906	59599
OCT-SEP	73273	74107	96	76446	76824
Move the mouse over the desired "Forecast Period" to display a graph.					

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Albeni Falls Dam forecasts are not used for implementation of BiOp actions.
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PEND OREILLE - ALBENI FALLS DAM (ALFW1) Forecasts for Water Year 2016					
Official Forecast - 10 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	10716	10778	84	10935	12815
APR-JUL	9804	9812	83	9836	11777
APR-AUG	10305	10334	84	10418	12354
JAN-SEP	13672	13734	90	13890	15226
JAN-JUL	12760	12768	90	12792	14189
OCT-SEP	15364	15427	90	15583	17218
- 5 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	10723	10800	84	10996	12815
APR-JUL	9800	9814	83	9875	11777
APR-AUG	10309	10337	84	10473	12354
JAN-SEP	13679	13756	90	13952	15226
JAN-JUL	12756	12769	90	12831	14189
OCT-SEP	15371	15448	90	15645	17218
- 0 days QPF: Ensemble: 2016-07-08 Issued: 2016-07-08 Hide Forecast					
APR-SEP	10611	10697	83	10927	12815
APR-JUL	9720	9750	83	9805	11777
APR-AUG	10199	10251	83	10383	12354
JAN-SEP	13567	13653	90	13882	15226
JAN-JUL	12676	12706	90	12761	14189
OCT-SEP	15259	15345	89	15575	17218
Move the mouse over the desired "Forecast Period" to display a graph.					

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