

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

In 2017, the official WSF will be computed January through July on the 3rd work day of the month using the 5-day QPF 50% exceedance value. FRM will be computed at the same intervals as before and posted online at: <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



Northwest River Forecast Center Water Supply Forecasts

Close Data/Normals Rankings **ENSO / Runoff** Adjustments Verification Verify All Years Archive Monthly Water Supply Forecasts

SF FLATHEAD - HUNGRY HORSE DAM (HHWM8) Forecasts for Water Year 2017

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	2120	2125	107	2150	1988
APR-JUL	2027	2027	108	2027	1871
APR-AUG	2081	2082	108	2092	1936
JAN-SEP	2578	2582	117	2607	2215
JAN-JUL	2484	2484	118	2484	2098
OCT-SEP	3065	3070	125	3095	2447

5 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	2121	2131	107	2164	1988
APR-JUL	2027	2027	108	2041	1871
APR-AUG	2081	2084	108	2100	1936
JAN-SEP	2578	2588	117	2621	2215
JAN-JUL	2484	2484	118	2499	2098
OCT-SEP	3066	3076	126	3109	2447

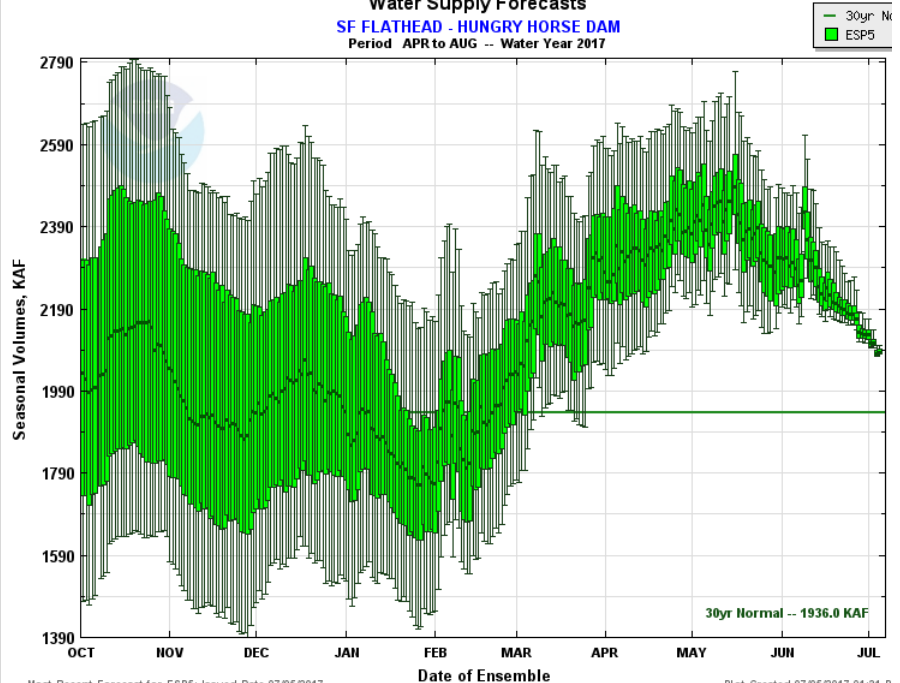
0 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	2120	2135	107	2175	1988
APR-JUL	2025	2031	109	2052	1871
APR-AUG	2080	2088	108	2118	1936
JAN-SEP	2578	2593	117	2632	2215
JAN-JUL	2482	2488	119	2509	2098
OCT-SEP	3065	3080	126	3120	2447

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

Water Supply Forecasts

SF FLATHEAD - HUNGRY HORSE DAM
Period APR to AUG -- Water Year 2017



Most Recent Forecast for ESP5: Issued Date 07/05/2017

Plot Created 07/05/2017 01:31 P

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Overlay

ESP10 ESP5 ESP0

Data Files

CSV (ESP5 / APR-AUG)

Forecast Ensemble

SF FLATHEAD - HUNGRY HORSE DAM (HHWM8) Forecasts for Water Year 2018

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	2120	2135	107	2175	1988
APR-JUL	2025	2031	109	2052	1871
APR-AUG	2080	2088	108	2118	1936
JAN-SEP	2578	2593	117	2632	2215
JAN-JUL	2482	2488	119	2509	2098
OCT-SEP	3065	3080	126	3120	2447

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

Overlay

ESP10

Data Files

CSV (ESP10 / JAN-SEP)

Forecast Ensemble

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



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COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2017

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	Average	10 %	
APR-SEP	115577	116436	126	118396	92704
APR-JUL	103316	103627	130	104190	79855
APR-AUG	110346	111017	127	112019	87532
JAN-SEP	149831	150690	132	152649	114216
JAN-JUL	137569	137880	136	138443	101368
OCT-SEP	171904	172763	132	174722	130518

5 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	115652	116758	126	119166	92704
APR-JUL	103303	103790	130	104429	79855
APR-AUG	110470	111423	127	112489	87532
JAN-SEP	149906	151012	132	153420	114216
JAN-JUL	137557	138044	136	138683	101368
OCT-SEP	171979	173085	133	175493	130518

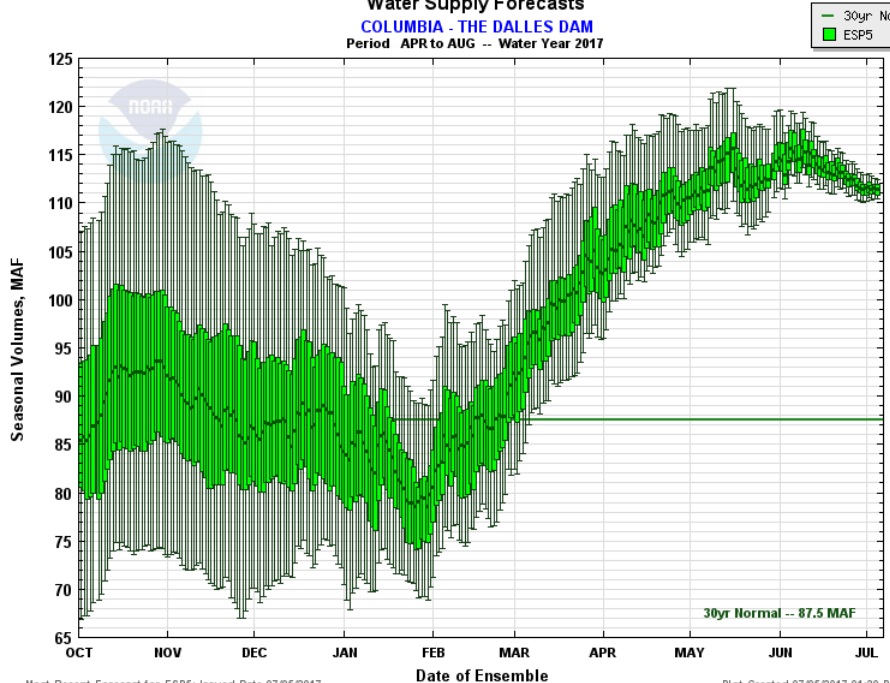
0 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	115454	117096	126	119971	92704
APR-JUL	102962	103925	130	104589	79855
APR-AUG	110188	111548	127	113058	87532
JAN-SEP	149707	151349	133	154224	114216
JAN-JUL	137216	138178	136	138843	101368
OCT-SEP	171780	173422	133	176297	130518

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

Water Supply Forecasts

COLUMBIA - THE DALLES DAM
Period APR to AUG -- Water Year 2017



Most Recent Forecast for ESP5: Issued Date 07/05/2017

Plot Created 07/05/2017 01:30 P

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Overlay

ESP10 ESP5 ESP0

Data Files

CSV (ESP5 / APR-AUG)

Forecast Ensemble

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2018

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	Average	10 %	
APR-SEP	115454	117096	126	119971	92704
APR-JUL	102962	103925	130	104589	79855
APR-AUG	110188	111548	127	113058	87532
JAN-SEP	149707	151349	133	154224	114216
JAN-JUL	137216	138178	136	138843	101368
OCT-SEP	171780	173422	133	176297	130518

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

Overlay

ESP10

Data Files

CSV (ESP10 / JAN-SEP)

Forecast Ensemble

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SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2017

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	31611	31671	142	31839	22279
APR-JUL	28740	28749	145	28767	19848
APR-AUG	30182	30214	143	30304	21091
JAN-SEP	44817	44877	150	45045	29872
JAN-JUL	41945	41955	153	41973	27440
OCT-SEP	49246	49307	142	49474	34667

5 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	31622	31700	142	31874	22279
APR-JUL	28742	28760	145	28812	19848
APR-AUG	30187	30234	143	30332	21091
JAN-SEP	44828	44906	150	45080	29872
JAN-JUL	41947	41965	153	42017	27440
OCT-SEP	49258	49336	142	49509	34667

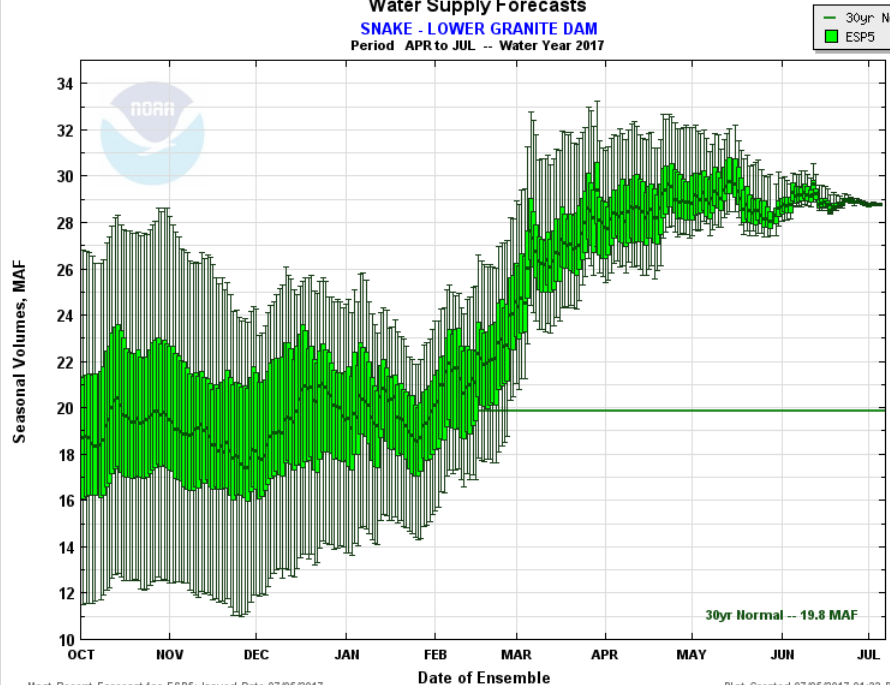
0 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	31613	31702	142	31955	22279
APR-JUL	28728	28761	145	28855	19848
APR-AUG	30182	30235	143	30428	21091
JAN-SEP	44819	44907	150	45160	29872
JAN-JUL	41934	41966	153	42060	27440
OCT-SEP	49249	49337	142	49590	34667

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 2017



Most Recent Forecast for ESP5: Issued Date 07/05/2017

Plot Created 07/05/2017 01:32 P

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Overlay

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Data Files

[CSV \(ESP5 / APR-JUL\)](#)[Forecast Ensemble](#)

SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2018

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	

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

Overlay

[ESP10](#)

Data Files

[CSV \(ESP10 / JAN-SEP\)](#)[Forecast Ensemble](#)

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



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KOOTENAI - LIBBY DAM (LYDM8) Forecasts for Water Year 2017

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	7463	7571	121	7767	6254
APR-JUL	6702	6712	126	6730	5342
APR-AUG	7183	7224	123	7304	5885
JAN-SEP	8353	8461	122	8657	6914
JAN-JUL	7591	7602	127	7619	6002
OCT-SEP	9930	10038	129	10234	7806

5 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	7470	7588	121	7771	6254
APR-JUL	6702	6715	126	6748	5342
APR-AUG	7188	7234	123	7350	5885
JAN-SEP	8360	8478	123	8660	6914
JAN-JUL	7592	7604	127	7637	6002
OCT-SEP	9937	10055	129	10237	7806

0 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

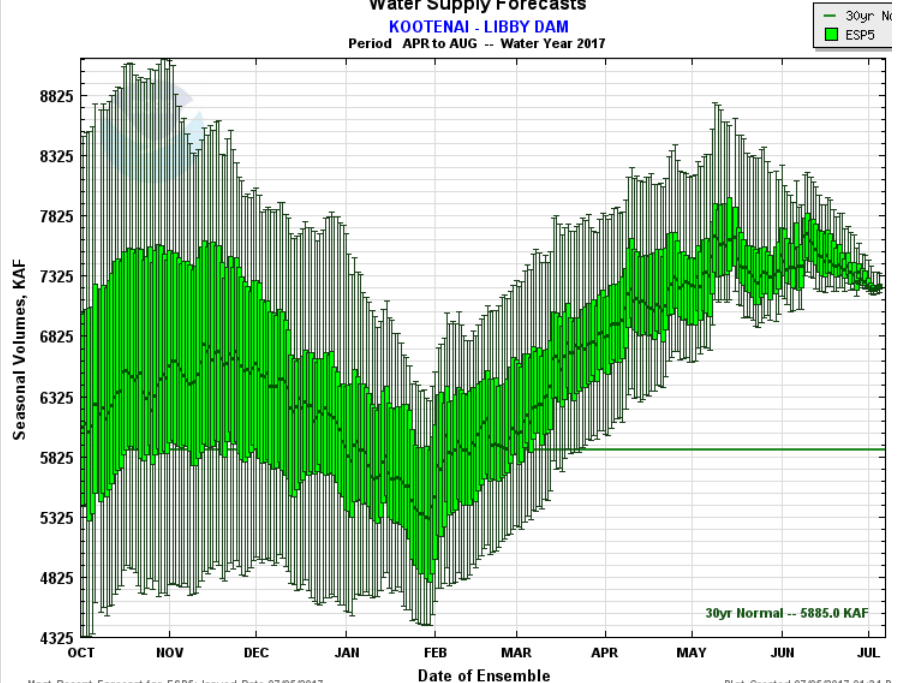
APR-SEP	7489	7653	122	7898	6254
APR-JUL	6686	6719	126	6882	5342
APR-AUG	7196	7253	123	7463	5885
JAN-SEP	8379	8542	124	8788	6914
JAN-JUL	7576	7608	127	7771	6002
OCT-SEP	9956	10119	130	10365	7806

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

Water Supply Forecasts

KOOTENAI - LIBBY DAM

Period: APR to AUG -- Water Year 2017



Most Recent Forecast for ESP5: Issued Date 07/05/2017

Plot Created 07/05/2017 01:34 P

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Overlay

ESP10 ESP5 ESP0

Data Files

CSV (ESP5 / APR-AUG)

Forecast Ensemble

KOOTENAI - LIBBY DAM (LYDM8) Forecasts for Water Year 2018

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	

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

Overlay

ESP10

Data Files

CSV (ESP10 / JAN-SEP)

Forecast Ensemble

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



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Northwest River Forecast Center Water Supply Forecasts

Close Data/Normals Rankings **ENSO / Runoff** Adjustments Verification Verify All Years Archive Monthly Water Supply Forecasts

NF CLEARWATER - DWORSHAK DAM (DWR11) Forecasts for Water Year 2017

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	3045	3050	118	3070	2575
APR-JUL	2908	2909	120	2912	2419
JAN-SEP	4892	4898	142	4917	3445
JAN-JUL	4756	4756	145	4759	3289
OCT-SEP	5452	5458	140	5477	3891

5 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

APR-SEP	3045	3051	118	3070	2575
APR-JUL	2908	2909	120	2913	2419
JAN-SEP	4893	4899	142	4918	3445
JAN-JUL	4756	4757	145	4761	3289
OCT-SEP	5452	5458	140	5478	3891

0 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

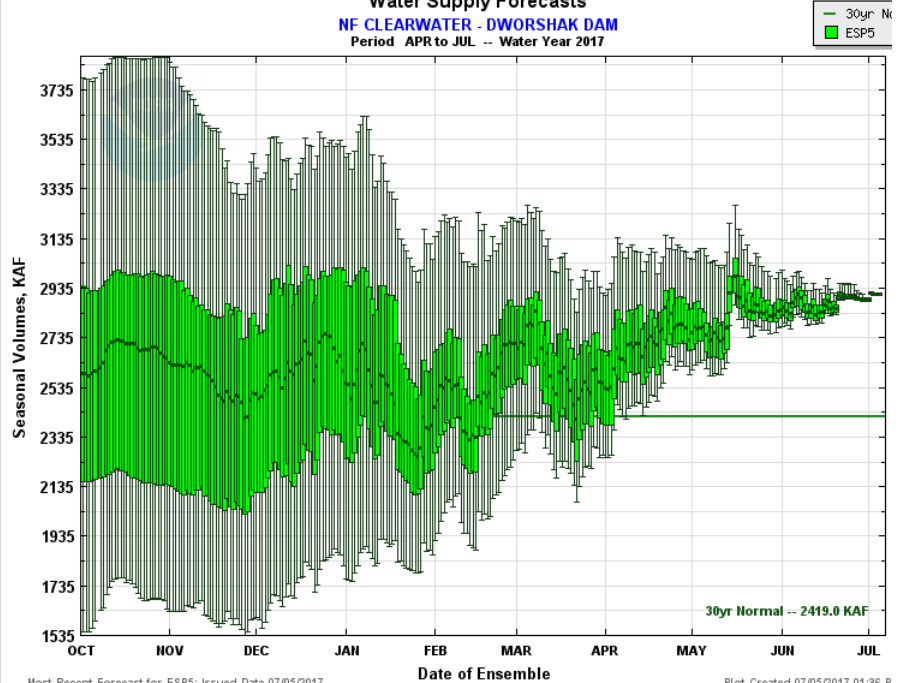
APR-SEP	3045	3054	119	3091	2575
APR-JUL	2908	2911	120	2924	2419
JAN-SEP	4893	4902	142	4939	3445
JAN-JUL	4756	4759	145	4771	3289
OCT-SEP	5453	5461	140	5499	3891

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

Water Supply Forecasts

NF CLEARWATER - DWORSHAK DAM

Period APR to JUL -- Water Year 2017



Most Recent Forecast for ESP5: Issued Date 07/05/2017

Plot Created 07/05/2017 01:36 P

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Overlay

ESP10 ESP5 ESP0

Data Files

CSV (ESP5 / APR-JUL)

Forecast Ensemble

NF CLEARWATER - DWORSHAK DAM (DWR11) Forecasts for Water Year 2018

Official Forecast

10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	3045	3054	119	3091	2575
APR-JUL	2908	2911	120	2924	2419
JAN-SEP	4893	4902	142	4939	3445
JAN-JUL	4756	4759	145	4771	3289
OCT-SEP	5453	5461	140	5499	3891

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

Overlay

ESP10

Data Files

CSV (ESP10 / JAN-SEP)

Forecast Ensemble

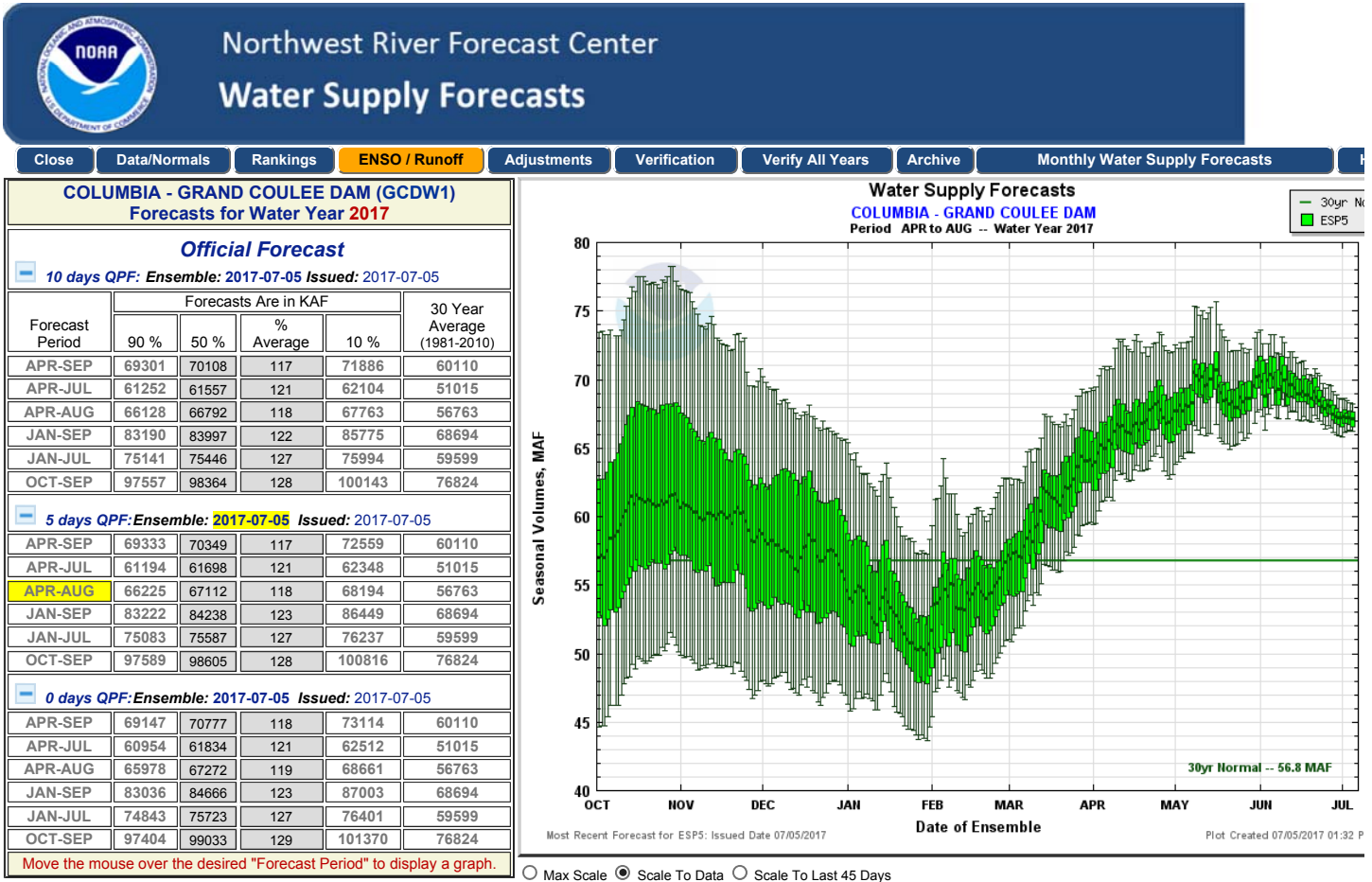
☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days



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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.



Overlay

ESP10 **ESP5** ESP0

Data Files

CSV (ESP5 / APR-AUG)

Forecast Ensemble

COLUMBIA - GRAND COULEE DAM (GCDW1)
Forecasts for Water Year 2018

Official Forecast
10 days QPF: Ensemble: 2017-07-05 Issued: 2017-07-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	

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

Overlay

ESP10

Data Files

CSV (ESP10 / JAN-SEP)

Forecast Ensemble

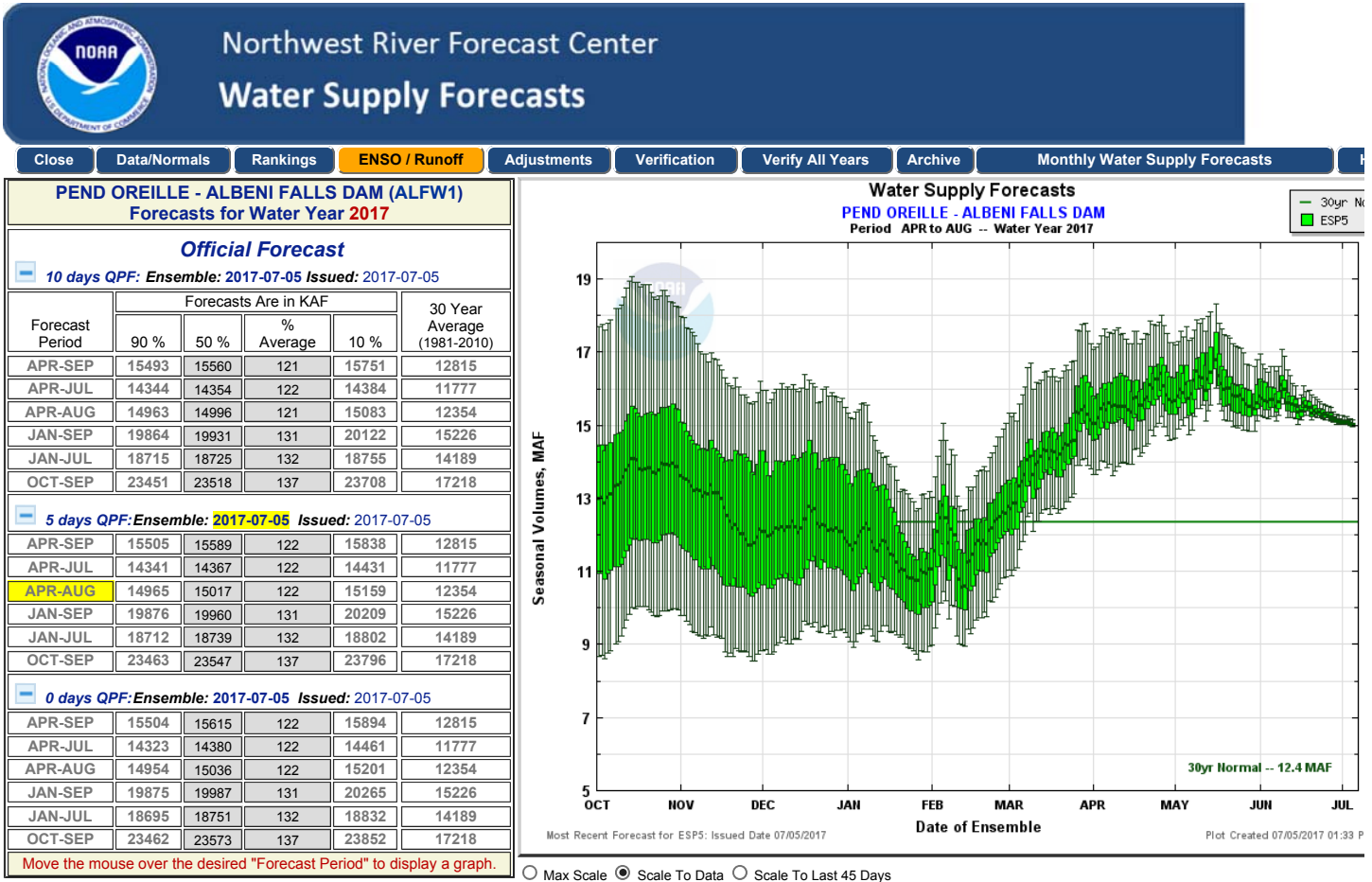
☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days



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Albeni Falls Dam forecasts are not used for implementation of BiOp actions.
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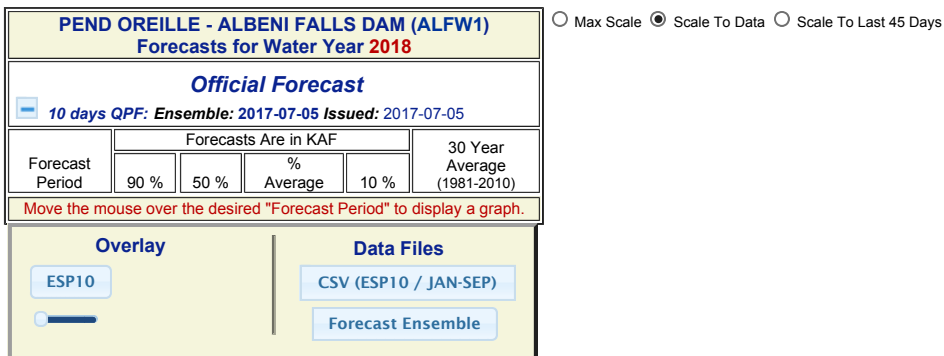
Overlay

ESP10 **ESP5** ESP0

Data Files

CSV (ESP5 / APR-AUG)

Forecast Ensemble



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