# Water Supply Outlook For - Spring-Summer 2020

WSAC January 24, 2020 Brent Bower NWS Seattle

## Climate Prediction Center

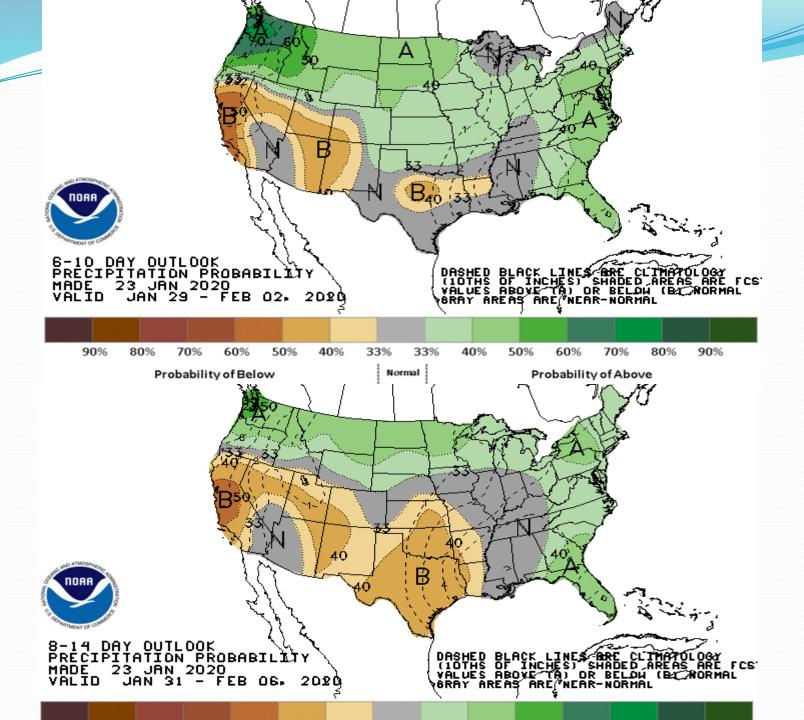
## Winter Outlook:

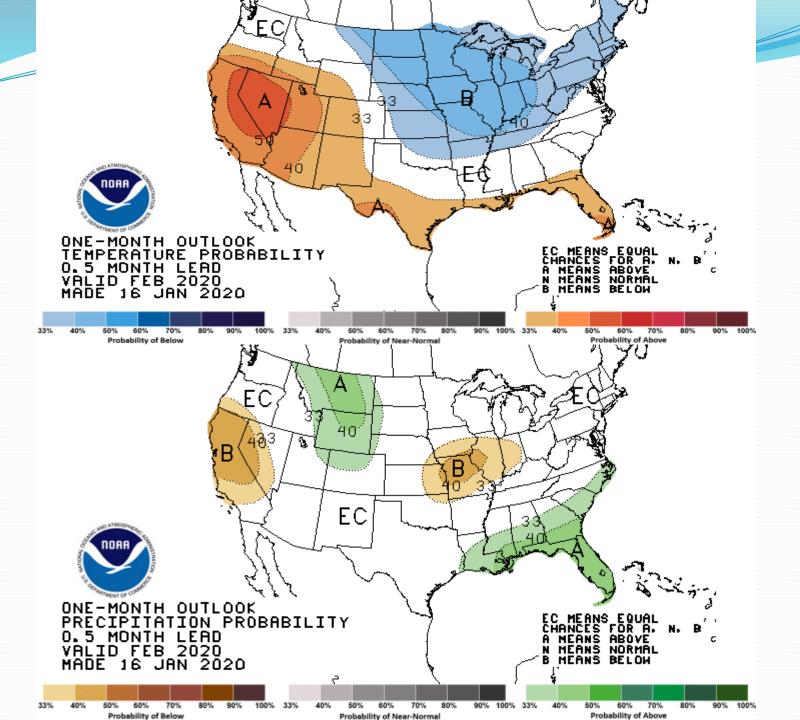
Precipitation: Above normal rest of Jan; Equal Chances for Feb to Apr; below normal May to July

Temperatures: Warmer near term; 3-month Equal chances then greater odds for warmer than normal

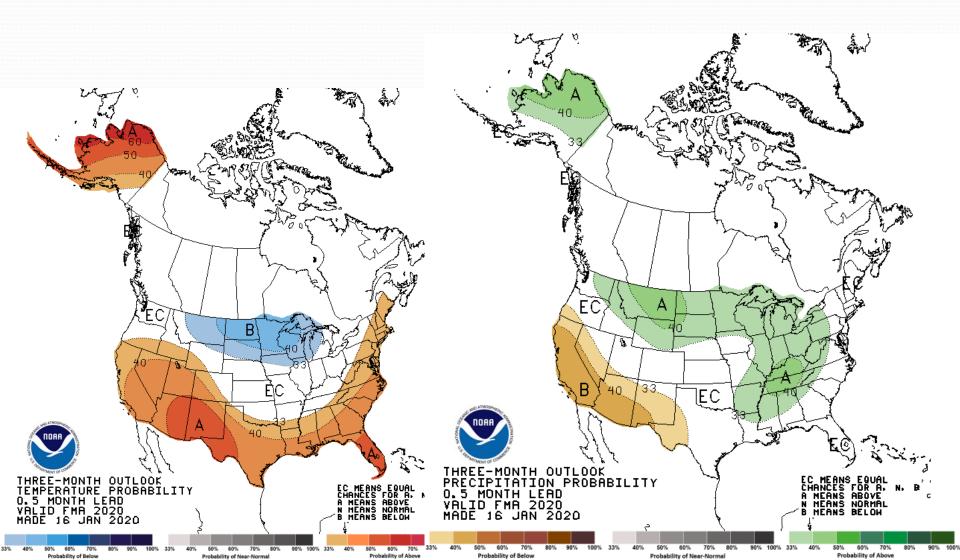
El Nino/La Nina: Currently neutral; best odds for neutral through spring

Warm Northeast Pacific Ocean – 'marine heat wave'





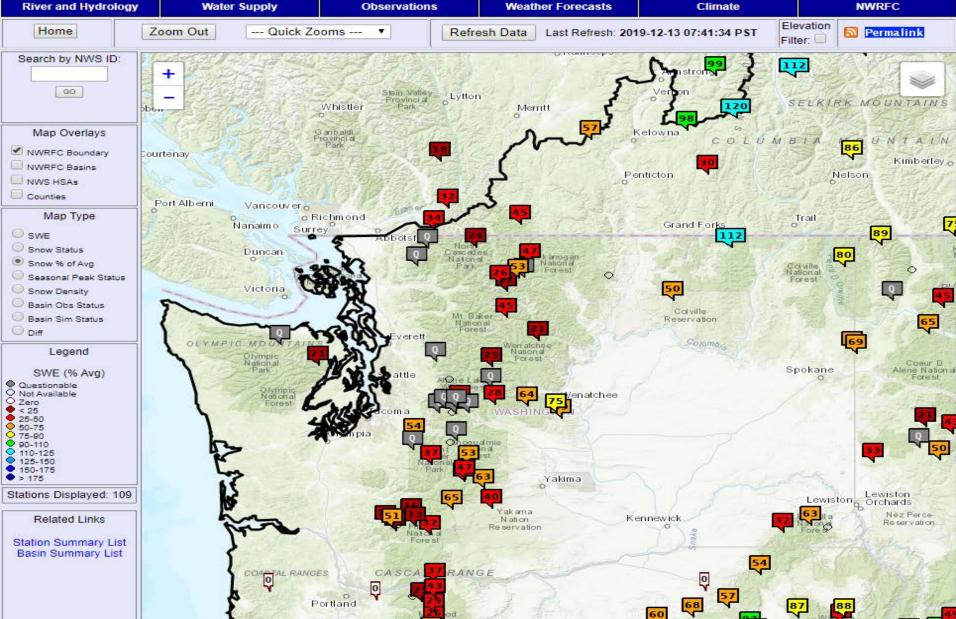
# Feb – Apr 2020 Outlook





#### Northwest River Forecast Center Current Station Snow Conditions







#### Northwest River Forecast Center Current Station Snow Conditions



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River and Hydrology	Water Supply	Observations	Weather Forecasts	Climate	NWRFC
Home	Zoom Out Q	uick Zooms ▼	fresh Data Last Refresh: 2020	-01-24 05:12:35 PST	Elevation Permalink
Search by NWS ID:	+ -	Stein Valley Provincial Whistler Park	ton Merritt	Vernon 143	SELKIRK MOUNTAINS
Map Overlays  NWRFC Boundary NWRFC Basins NWS HSAs Counties	Courtenay  Port Alberni Vanco	Garibaldi Provinci a Fark 77	7~~	colum icton	BIA UNTAIN Kimberley o
Map Type  SWE Snow Status Snow % of Avg Seasonal Peak Status Snow Density	Nanaimo Duncar 	a Richmond Surrey  a Dootsf 97  ADDotsf 97  No Case Nati	98 sdes 95 karogan 64 rk 7918 National	Grand Forks	Trail  116  123  Colville National Forest
Basin Obs Status Basin Sim Status Diff Legend SWE (% Avg)	OLYMPIC MOD Olympic Nation al Park	Q DEVerett	Baker  thorial prest  Werratchee National Por est	Colville Reservation	Spokane Aleae Nation al
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**River and Hydrology** 

**Water Supply** 

#### Northwest River Forecast Center Water Supply Forecasts

**Weather Forecasts** 

Climate

Observations



Kiver and Trydrology		ater Suppry	Observations	Wednier i Orecasis	Cimiate	MINIG C
Home	Zoom Out	Quick Zooms	- ▼	ESP Issued: 2020-01-23	Ensemble Date: 2020-0	01-23 Nermalink
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Map Overlays	NAME OF THE PARTY	Garibaldi Provinci al Park		www.	Kelowna COLUMB	
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NWRFC Basins		30月1日	100	Pe	enticton	114 Nelson
NWS HSAs			THE WAR		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 P 2 P 2 P 2 P 2 P 2 P 2 P 2 P 2 P 2 P
Counties	Port Alberni	Vancouvero	Enser	~		15
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WS % of Normal		Duncan	No	orth cades Okanogan National		96 Kog
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Water Supply Forecast	1	Park 15 %	Sattle Alpine	94	S	po 96 95 Court Alene 99 on al
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		82	National Forest		99	94
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Forecast Listing		Portland	84		92	CEN STEP AND



#### Northwest River Forecast Center ESP Natural Forecast



River and Hydrology	Wat	ter Supply	Observations	Weather Forecasts	Climate	NWRFC
Home	Zoom Out	Quick Zooms	- ▼	ESP Issued: 2020-01-23	Ensemble Date: 2020-01-2	23 Nermalink
Search Enter NWS ID:	+	Whistler	Stein Valley Provincial Park	MEHILL	Amistrong Vernon SEL	KIRK MOUNTAINS
Map Overlays  NWRFC Boundary  NWRFC Basins  NWS HSAs	ırtenay	Garibaldi Provinci a Park		Kelo Pentio		105 Kimberley
Counties  ESP Natural Forecast  Natural Status	Port Alberni	Vancouver o Richmond	- Look ar	\$ 9130	[1]107 [106]   Gra[126] ks [123	116
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Percentile (%) Natural Runoff Runoff Status Runoff % of Normal		Victoria P4 101	97 100 196 100 100 100 100 100 100 100 100 100 100	94 98 101	Colville Reservation	PUR
ESP Natural Forecast  Period: APR-SEP  Forecast (% Normal)	DEVINE	Olympic National Park	98 797 98 78 93 97 8 4 La 92 91 92 5 8 100	Werr atch 96 91 Nation 96 Per est 94 104 ss		116 83 84 Ale 98
○ No Normal, No Data • < 25 • 25-50 • 50-75 • 75-90 • 90-110 • 110-125 • 125-150 • 150-175 • > 175	6	93 92 93	10 97 6 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9	95 94 104 99 94 104 97	84 84	81 84 84 84 84 89
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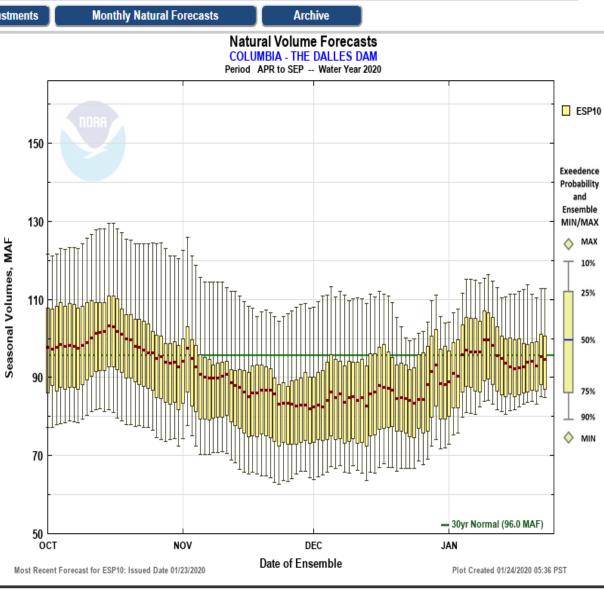


### **ESP Natural Forecasts**

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Home	Data/Norma	als R	ankings	ENSO/	Runoff	Adjus		
COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2020								
Official Water Supply ESP with 10 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23								
		Forecasts	Are in KAF		30 Year			
Forecast Period	90 %	50 %	% Average	10 %	Average (1981-2010			
APR-SEP	85170	94963	99	113231	96012			
APR-JUL	69989	77288	94	93832	82019			
APR-AUG	79548	88099	97	106028	90465			
JAN-SEP	101320	114115	98	134715	116431			
JAN-JUL	86184	95666	93	115315	102438	:		
OCT-SEP	115188	127982	97	148582	132349	שַׁוּי.		
Experimental Water Supply HEFS with 15 days EQPF Ensemble: 2020-01-23 Issued: 2020-01-23								
APR-SEP	87388	100749	105	118093	96012	=  :		
APR-JUL	72725	82623	101	99649	82019			
APR-AUG	81343	94592	105	112121	90465			
JAN-SEP	105803	119967	103	140331	116431			
JAN-JUL	91962	103690	101	118585	102438			
OCT-SEP	119670	133834	101	154199	132349			
Reference ESP with 0 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23								
APR-SEP	83761	97131	101	112831	96012			
APR-JUL	68981	77972	95	93674	82019			
APR-AUG	77317	89698	99	105695	90465			
JAN-SEP	99325	114174	98	133633	116431			
JAN-JUL	86053	97150	95	112754	102438			
OCT-SEP	113193	128041	97	147501	132349			

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

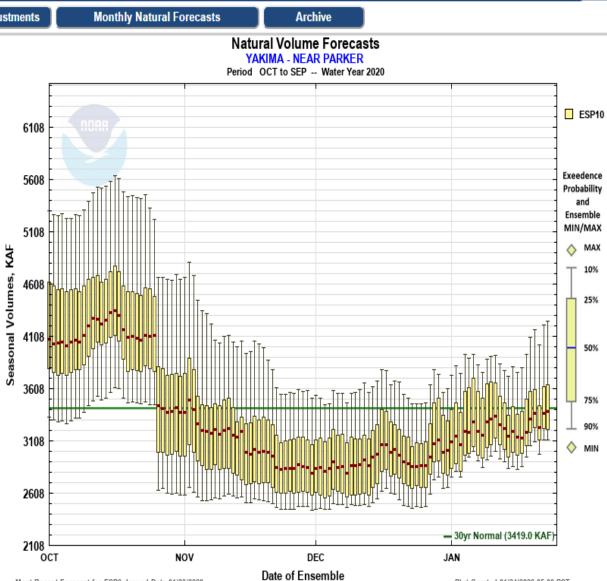
May Scale ® Scale To Data





## **ESP Natural Forecasts**

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Home	Home Data/Normals F			ENSO	/ Runoff	Adjus		
YAKIMA - NEAR PARKER (PARW1) Forecasts for Water Year 2020								
Official Water Supply ESP with 10 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23								
		Forecas	sts Are in KAF		30 Year			
Forecast Period	90 %	50 %	% Average	10 %	Average (1981-2010	))		
APR-SEP	1667	1961	97	2572	2025			
APR-JUL	1423	1763	96	2336	1827			
JAN-SEP	2708	2983	104	3840	2868			
JAN-JUL	2523	2784	104	3557	2669			
OCT-SEP	3116	3391	99	4248	3419			
Experimental Water Supply HEFS with 15 days EQPF Ensemble: 2020-01-23 Issued: 2020-01-23								
APR-SEP	1020	2075	102	2678	2025			
APR-JUL	1330	1868	102	2447	1827			
JAN-SEP	2749	3267	114	3825	2868			
JAN-JUL	2550	3039	114	3568	2669			
OCT-SEP	3157	3675	107	4233	3419			
Reference ESP with 0 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23								
APR-SEP		1950	96	2613	2025			
APR-JUL		1744	95	2360	1827			
JAN-SEP	2522	2872	100	3431	2868			
JAN-JUL	2281	2677	100	3249	2669			
OCT-SEP	2930	3280	96	3839	3419			
Move the mouse over the desired "Forecast Period" to display a graph.								



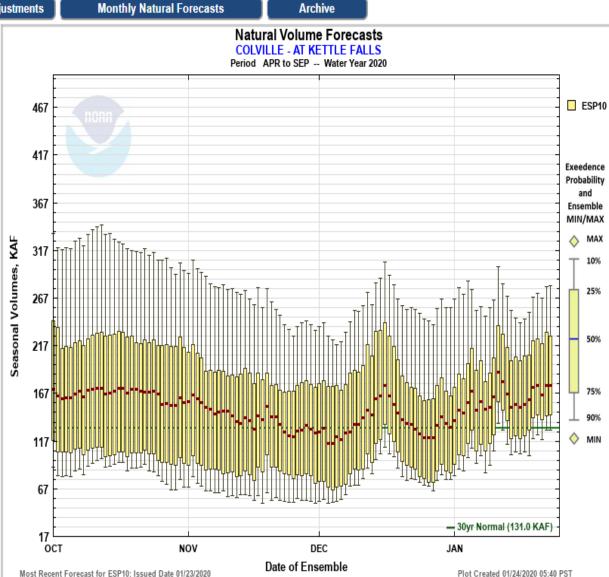
Plot Created 01/24/2020 05:38 PST

Most Recent Forecast for ESP0: Issued Date 01/23/2020



#### **ESP Natural Forecasts**

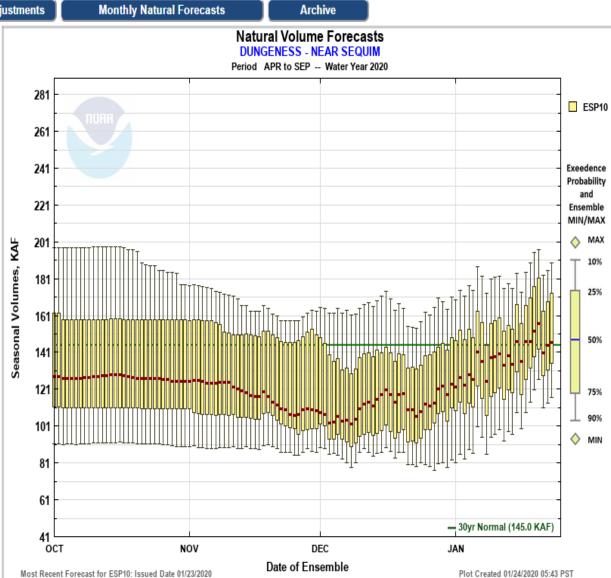
Rankings Data/Normals **ENSO / Runoff** Adjustments Home COLVILLE - AT KETTLE FALLS (KTFW1) Forecasts for Water Year 2020 Official Water Supply ESP with 10 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23 Forecasts Are in KAF 30 Year Forecast Average 50 % Period 90 % Average 10 % (1981-2010) APR-SEP APR-JUL JAN-SEP JAN-JUL OCT-SEP **Experimental Water Supply** HEFS with 15 days EQPF Ensemble: 2020-01-23 Issued: 2020-01-23 APR-SEP APR-JUL JAN-SEP JAN-JUL OCT-SEP Reference ESP with 0 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23 APR-SEP APR-JUL JAN-SEP JAN-JUL OCT-SEP Move the mouse over the desired "Forecast Period" to display a graph.





#### **ESP Natural Forecasts**

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Home	Data/Norm	nals	Rankings	ENSO	/ Runoff	Adjust		
DUNGENESS - NEAR SEQUIM (DRSW1) Forecasts for Water Year 2020								
Official Water Supply ESP with 10 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23								
		Forecas	ts Are in KAF		30 Year			
Forecast Period	90 %	50 %	% Average	10 %	Average (1981-2010	))		
APR-SEP	117	147	101	190	145			
APR-JUL	101	125	104	153	120			
JAN-SEP	170	216	100	269	216			
JAN-JUL	154	197	103	232	192			
OCT-SEP	202	248	88	301	281	\		
Experimental Water Supply HEFS with 15 days EQPF Ensemble: 2020-01-23 Issued: 2020-01-23								
APR-SEP	122	152	105	198	145	1-23   Note of the control of the co		
APR-JUL	101	127	106	154	120			
JAN-SEP	177	239	110	307	216	5		
JAN-JUL	159	215	112	261	192			
OCT-SEP	209	271	96	339	281			
Reference ESP with 0 Days QPF Ensemble: 2020-01-23 Issued: 2020-01-23								
APR-SEP	105	146	101	186	145			
APR-JUL	91	123	103	154	120			
JAN-SEP	153	209	97	263	216			
JAN-JUL	138	186	97	239	192			
OCT-SEP	OCT-SEP 185 242 86 295 281							
Move the mouse over the desired "Forecast Period" to display a graph.								



# **NWS Water Supply Forecasts**

- Mostly near normal water volumes
  - Big upward change in 5 weeks
  - Snow pack is much improved
  - Northeast above, southeast below
  - Some below normal southwest
- More improvement likely through the end of the month if snow levels stay modest