

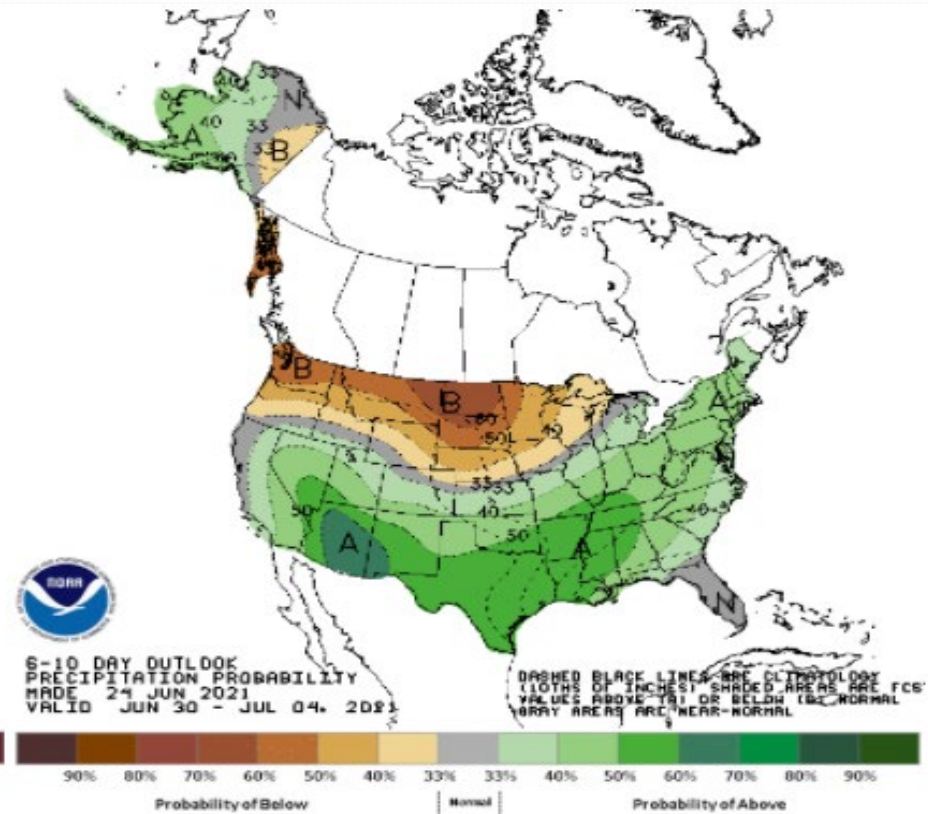
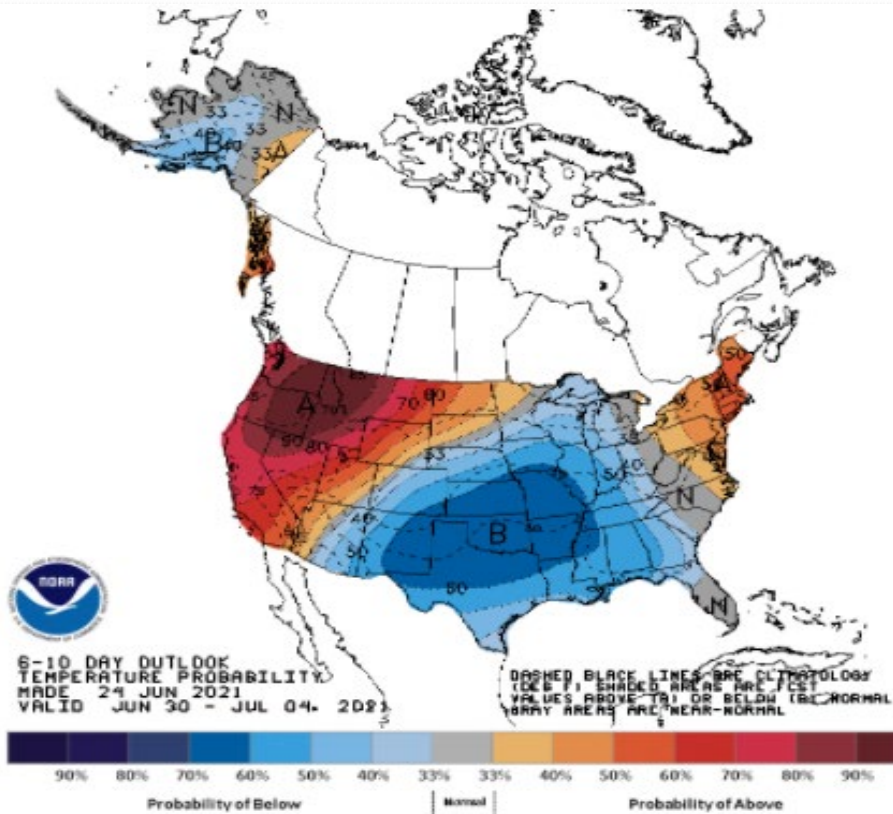
# Water Supply Outlook Summer 2021

WSAC June 25 , 2021

Amy Burke - Northwest River Forecast Center

Marilyn Lohmann - NWS Pendleton

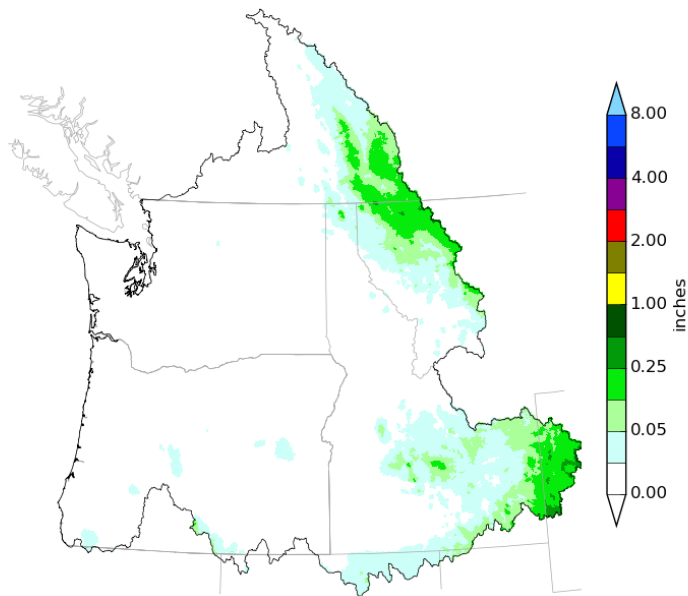
# 6-10 Day Outlook



# 10 Day QPF



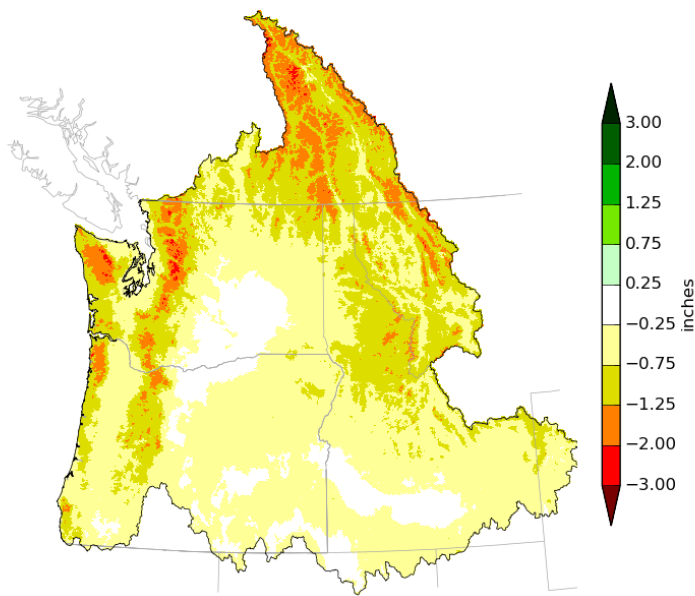
Northwest River Forecast Center  
10 Day QPF, Ending 12Z, 07/04/21



Creation Time: Thu Jun 24 21:09:45 UTC 2021



Northwest River Forecast Center  
10 Day QPF (Deviation from Climatology), Ending 12Z, 07/04/21

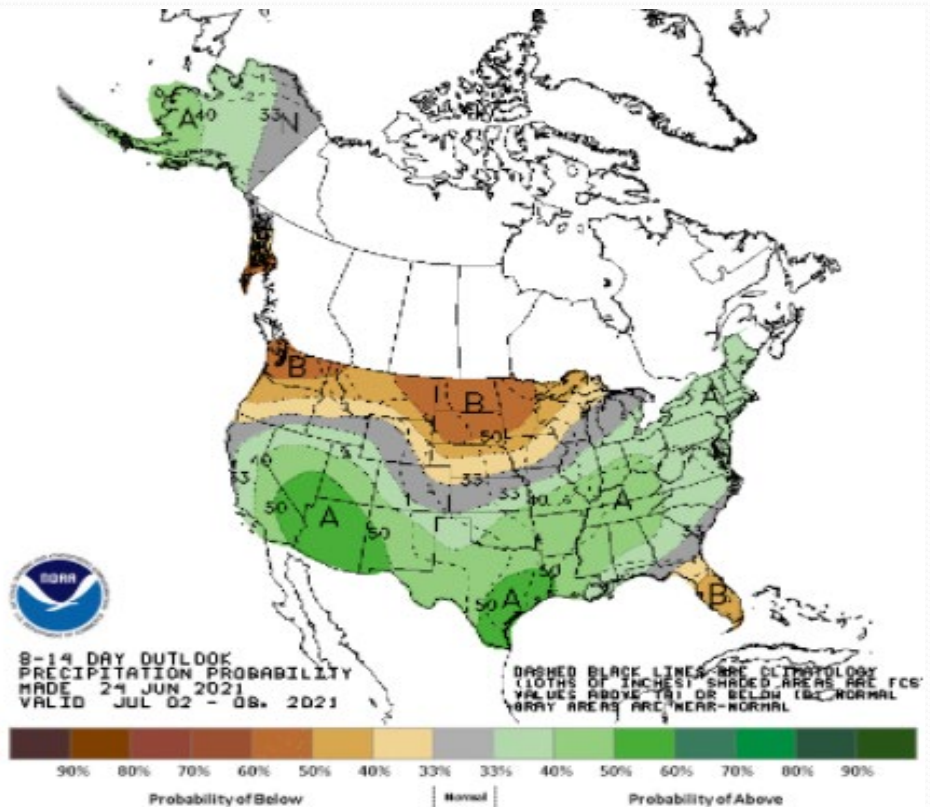
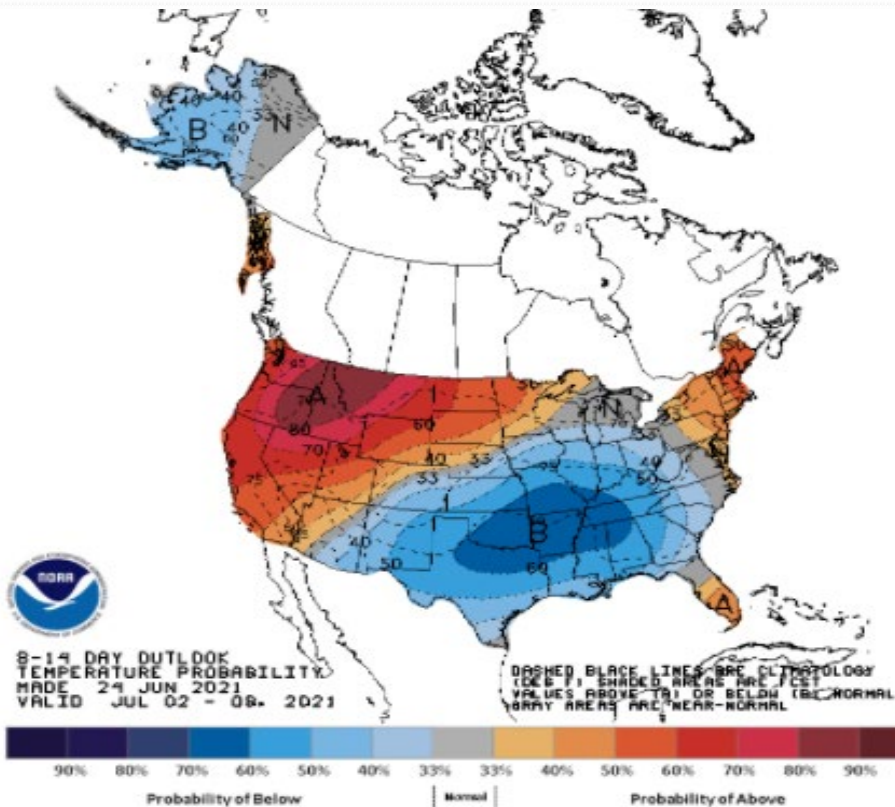


Creation Time: Thu Jun 24 21:11:01 UTC 2021

Left graphic:  
No precip is  
forecast for the  
10 day period

Right graphic:  
The next 10  
days are  
forecast to  
increase  
Washington's  
precip deficit

# 8-14 Day Outlook



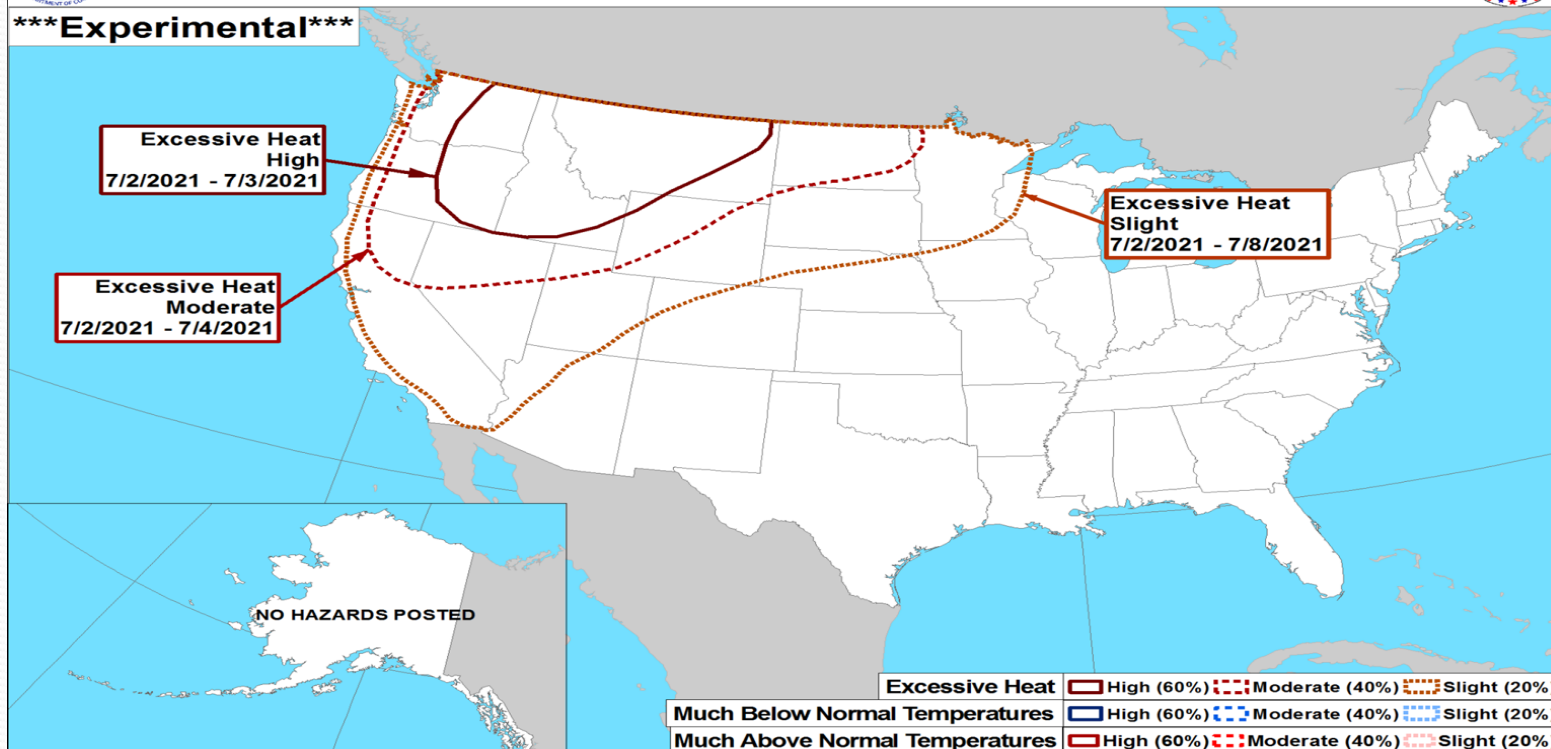
# Risk of Hazardous Temperatures



**Risk of Hazardous Temperatures**  
**Valid: 07/02/2021-07/08/2021**



\*\*\*Experimental\*\*\*



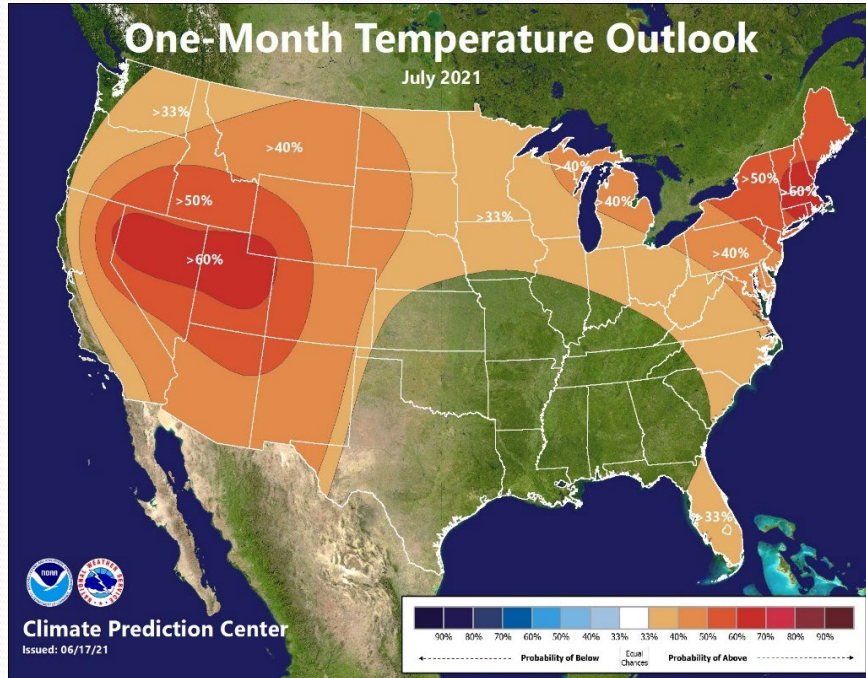
**Climate Prediction Center**

Made: 06/24/2021 3PM EDT

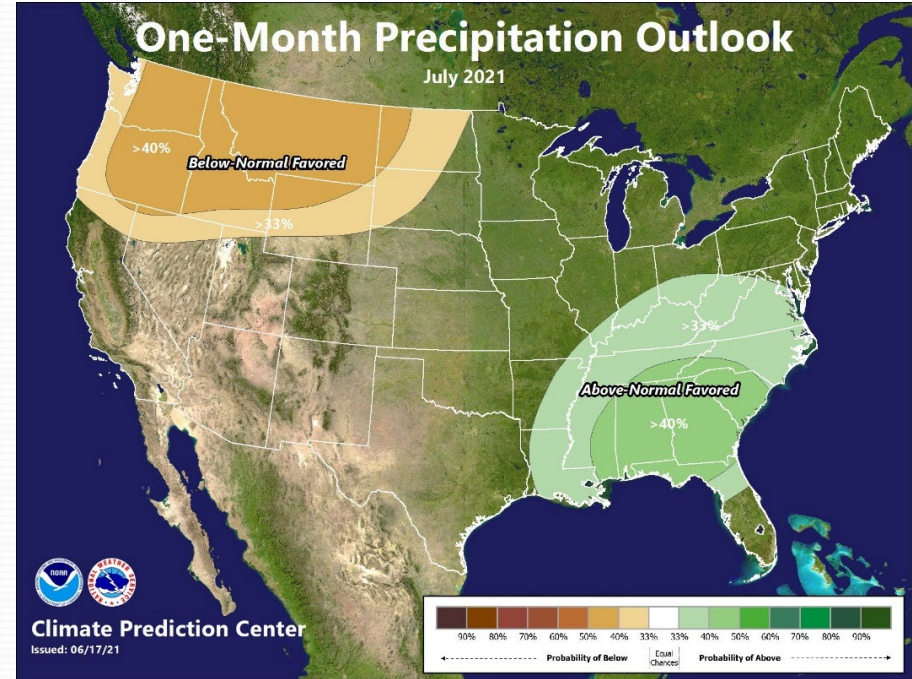
Follow us:

[www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

# July Outlook

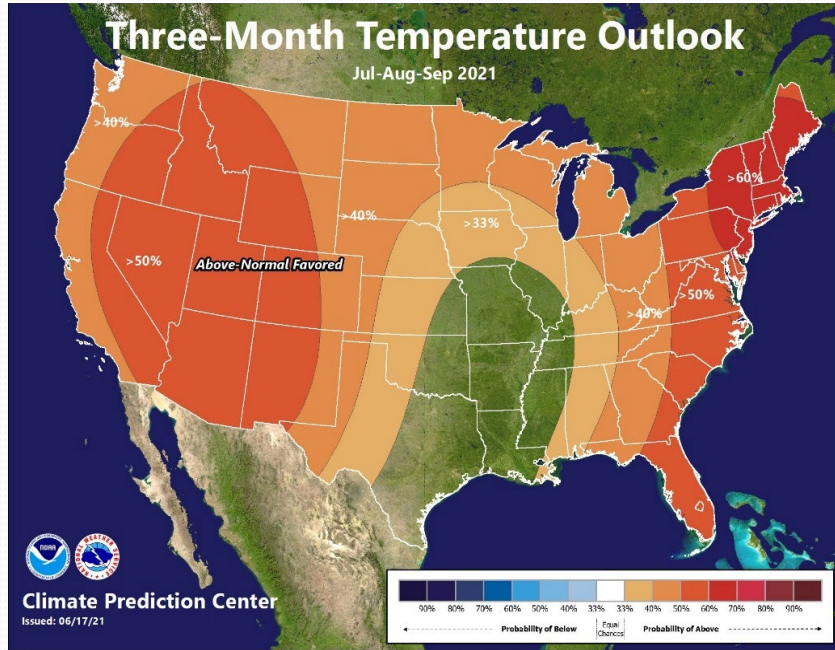


Increased chances for above normal temperatures over **most** of Washington

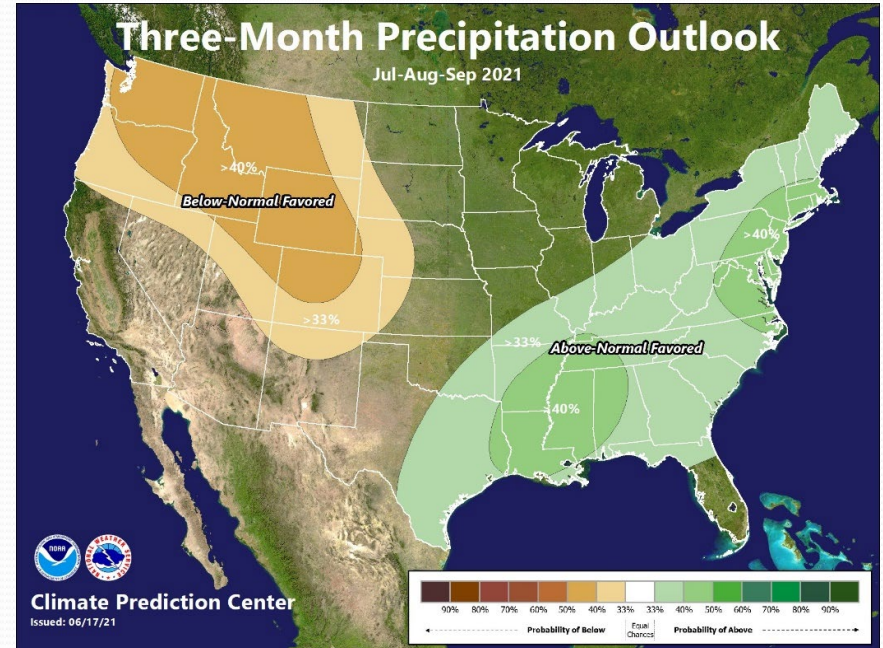


Increased chances for below normal precipitation over all of Washington

# July-August-September Outlook

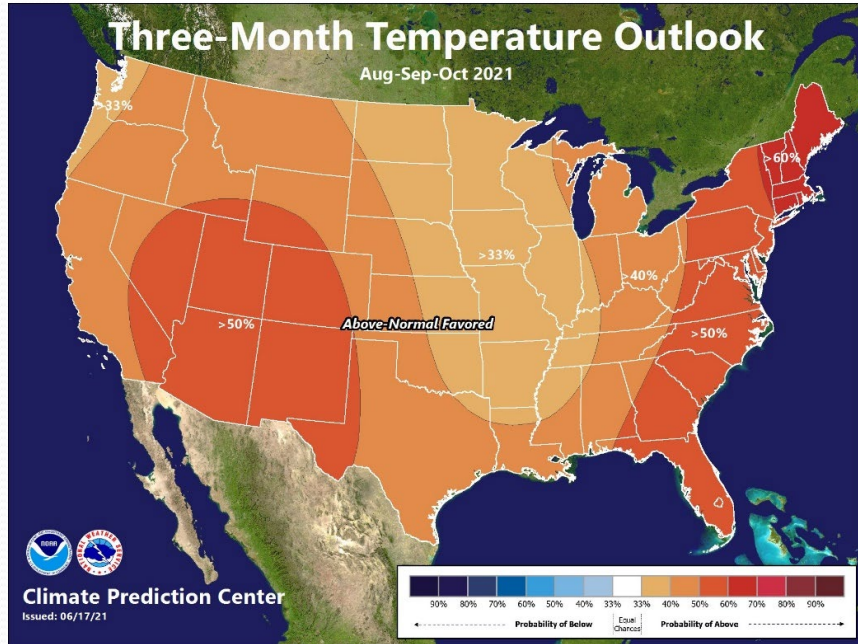


Increased chances for above normal temperatures over all of Washington

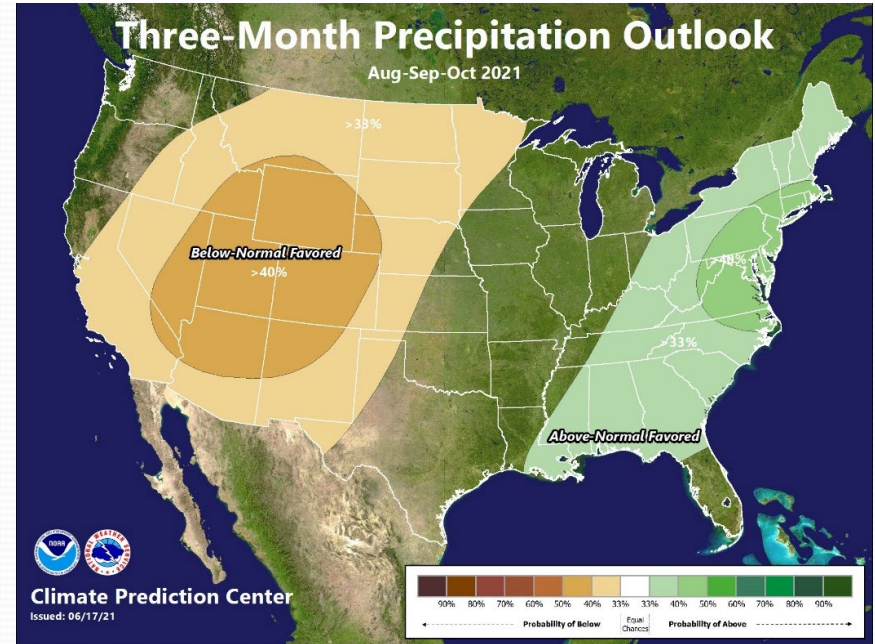


Increased chances for below normal precipitation over all of Washington

# August-September-October Outlook



Increased chances for above normal temperatures over all of Washington



Equal chances for below, above or normal precipitation over all of Washington

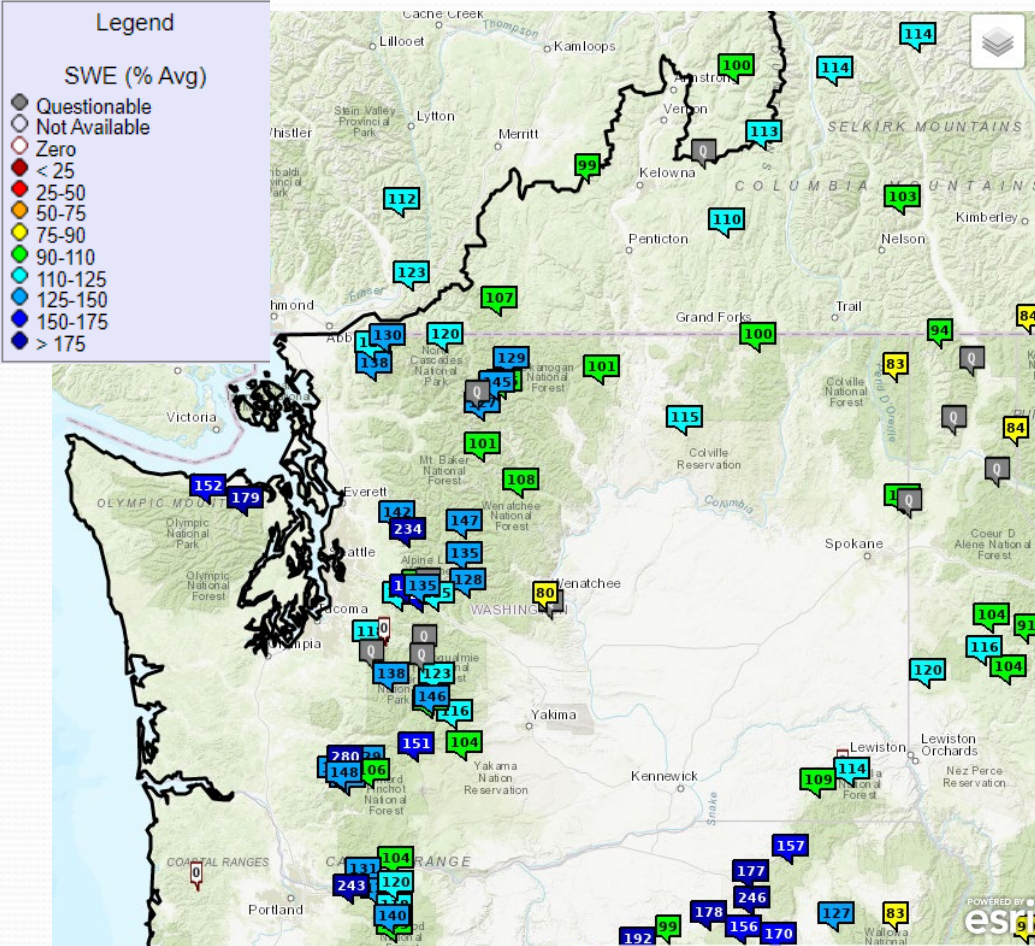
# Climate Prediction Center

## Summary

### Rest of Summer Outlook/Peek at Fall:

- Precipitation:
  - July – Greater chance of below normal
  - Greater chances below normal July-Sep
  - Equal chances above/below Aug -Oct
- Temperatures:
  - July - Greater chances above most of state
  - Greater chances for above normal Jul – Sep
  - Greater chances for above normal Aug - Oct

# April 1, 2021 Snow Water Equivalent

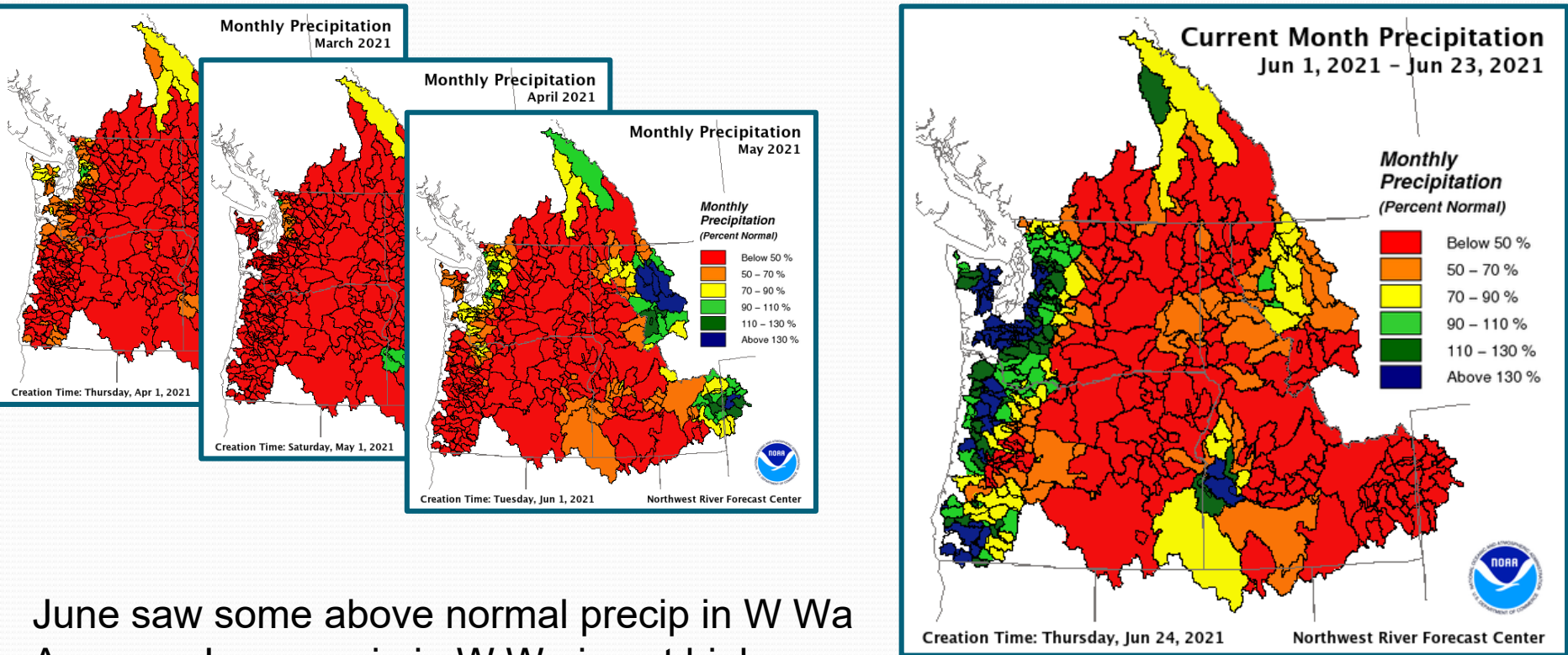


Most of the the snowpack peaked by around April 1st.

After a slow start, more storms Feb through March allowed for the snowpack to reach above normal levels.

The mountains also saw below normal precipitation April/May. Sites started dropping below normal by May 1.

# Monthly Precipitation



June saw some above normal precip in W Wa  
Average June precip in W Wa is not high



# Northwest River Forecast Center ESP Natural Forecast



River and Hydrology

Water Supply

Observations

Weather Forecasts

Climate

NWRFC

Home

Zoom Out

--- Quick Zooms ---

ESP Issued: 2021-06-24

Ensemble Date: 2021-06-24

[Permalink](#)

Search

Enter NWS ID:

GO

Map Overlays

- ☒ NWRFC Boundary
- ☐ NWRFC Basins
- ☐ NWS HSAs
- ☐ Counties

ESP Natural Forecast

- ☐ Natural Status
- ☒ Natural % of Normal
- ☐ Rank (ASC)
- ☐ Rank (DESC)
- ☐ Exceedance (%)
- ☐ Percentile (%)

Natural Runoff

- ☐ Runoff Status
- ☐ Runoff % of Normal

ESP Natural Forecast

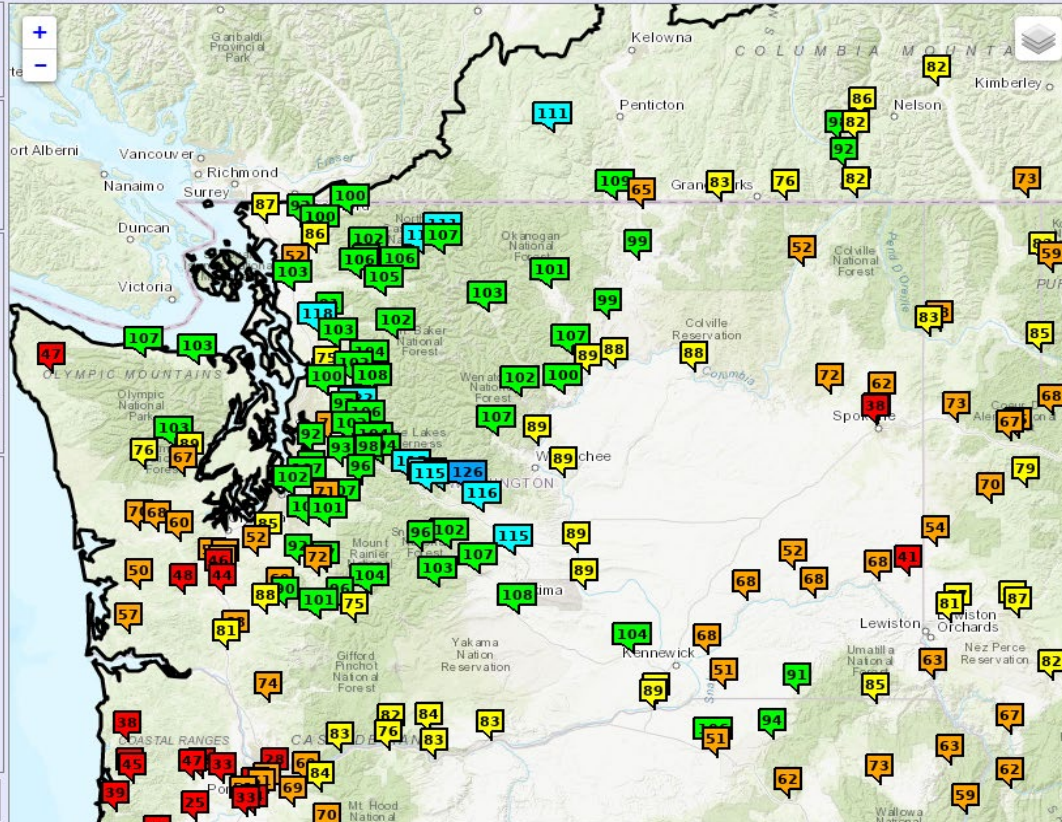
Period: APR-SEP  
Forecast (% Normal)

- ☐ No Normal, No Data
- ☐ < 25
- ☐ 25-50
- ☐ 50-75
- ☐ 75-90
- ☐ 90-110
- ☐ 110-125
- ☐ 125-150
- ☐ 150-175
- ☐ > 175



Stations Displayed:

215



Forecasts for east/southeast and southwest Washington saw some further declines

Continue to see near to above normal forecasts central/northern Cascades and nw Washington

# ESP10 Natural Forecasts

June 24, 2021

○ No Normal, No data

● < 25  
● 25-50  
● 50-75  
● 75-90  
● 90-110  
● 110-125  
● 125-150  
● 150-175  
● > 175

Map Overlays

☒ NWRFC Boundary  
☐ NWRFC Basins  
☐ NWS HSAs  
☐ Counties

ESP Natural Forecast

☐ Natural Status  
☒ Natural % of Normal  
☐ Rank (ASC)  
☐ Rank (DESC)  
☐ Exceedance (%)  
☐ Percentile (%)

Natural Runoff

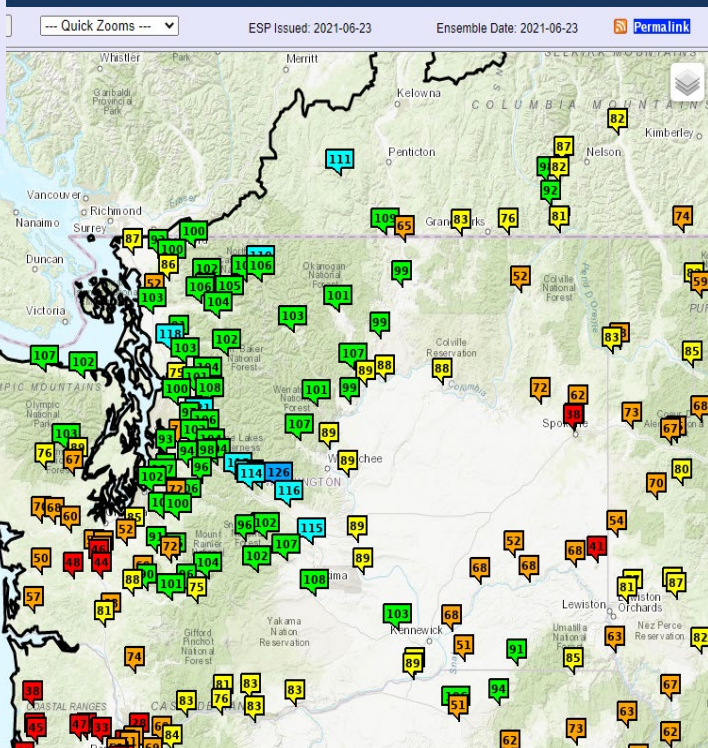
☐ Runoff Status  
☐ Runoff % of Normal

ESP Natural Forecast

Period: APR-SEP  
Forecast (% Normal)

○ No Normal, No data  
● < 25  
● 25-50  
● 50-75  
● 75-90  
● 90-110  
● 110-125  
● 125-150  
● 150-175  
● > 175

Stations Displayed:



Apr-Sep Vol

Washington

% Normal

Δ (since May 13)

Skagit nr Mt Vernon

103

+5

Dungeness nr Sequim

103

+3

Chehalis at Porter

60

+6

Okanogan at Malott

99

-9

Methow nr Pateros

107

-7

Yakima at Parker

108

+4

Walla Walla nr Touchet

51

-16

# ESP10 Natural Forecasts Ranked

- ☒ NWRFC Boundary
- ☐ NWRFC Basins
- ☐ NWS HSAs
- ☐ Counties

ESP Natural Forecast

- ☐ Natural Status
- ☐ Natural % of Normal
- ☐ Rank (ASC)
- ☒ Rank (DESC)
- ☐ Exceedance (%)
- ☐ Percentile (%)

Natural Runoff

- ☐ Runoff Status
- ☐ Runoff % of Normal

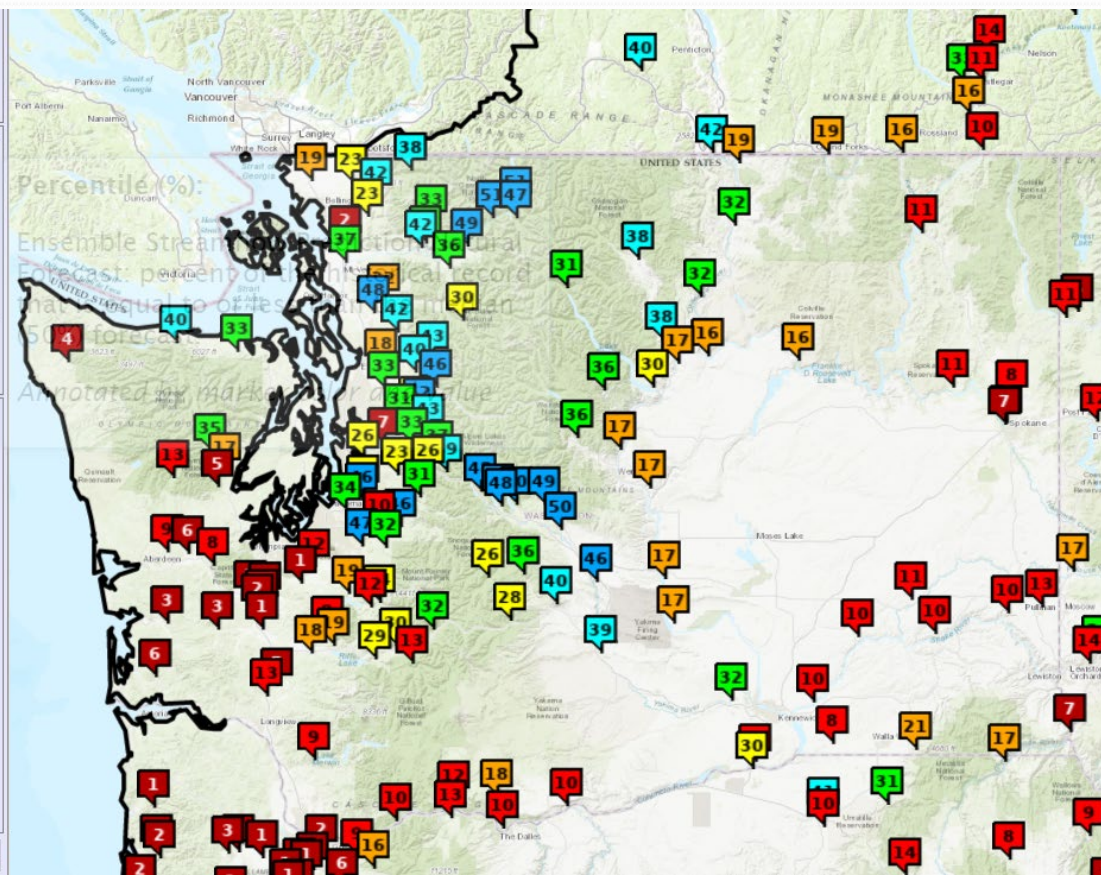
ESP Natural Forecast

**Period: APR-SEP**  
Rank (Descending)  
Marker Color Shows Percentile (%)

Legend for Percentile (%):

- No Data
- 0-10
- 10-20
- 20-30
- 30-40
- 40-50
- 50-60
- 60-70
- 70-80
- 80-90
- 90-100

Stations Displayed: 204



Forecasts in the SW continue to predict record low Apr-Sep volumes

Note the lower elevation forecast points in W Wa are ranked low



# Northwest River Forecast Center

## ESP Natural Forecasts

### SKAGIT - NEAR MT VERNON (MVEW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	6382	6482	103	6828	6268
APR-JUL	5474	5559	107	5649	5206
JAN-SEP	9134	9235	104	9581	8903
JAN-JUL	8226	8312	106	8401	7841
OCT-SEP	12653	12754	109	13100	11740

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	6365	6480	103	6812	6268
APR-JUL	5466	5540	106	5639	5206
JAN-SEP	9118	9232	104	9564	8903
JAN-JUL	8218	8293	106	8391	7841
OCT-SEP	12637	12751	109	13083	11740

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

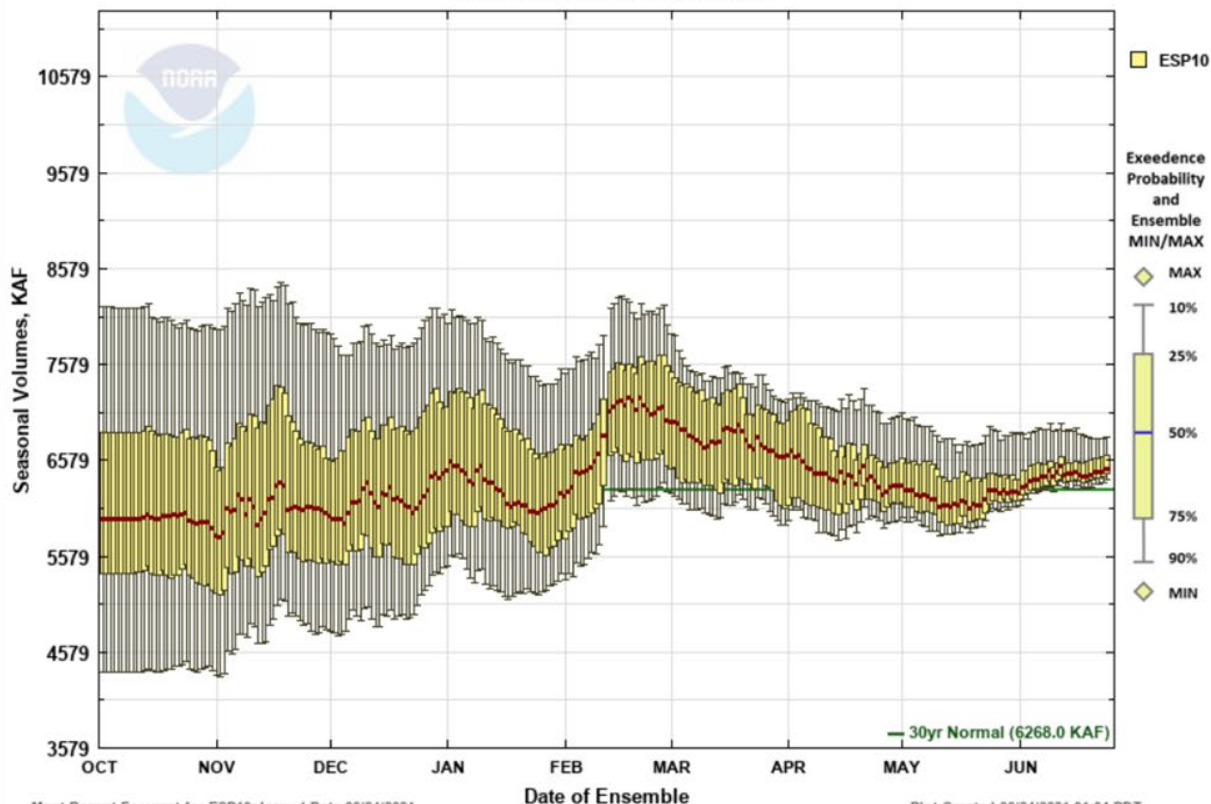
APR-SEP	6259	6420	102	6872	6268
APR-JUL	5304	5414	104	5637	5206
JAN-SEP	9011	9172	103	9625	8903
JAN-JUL	8056	8166	104	8389	7841
OCT-SEP	12530	12691	108	13144	11740

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

### Natural Volume Forecasts

#### SKAGIT - NEAR MT VERNON

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

### DUNGENESS - NEAR SEQUIM (DRSW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	145	149	103	157	145
APR-JUL	124	128	106	131	120
JAN-SEP	206	210	97	218	216
JAN-JUL	186	189	98	192	192
OCT-SEP	257	261	93	269	281

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	144	148	102	156	145
APR-JUL	123	126	105	130	120
JAN-SEP	205	209	97	217	216
JAN-JUL	184	187	98	192	192
OCT-SEP	255	260	93	268	281

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

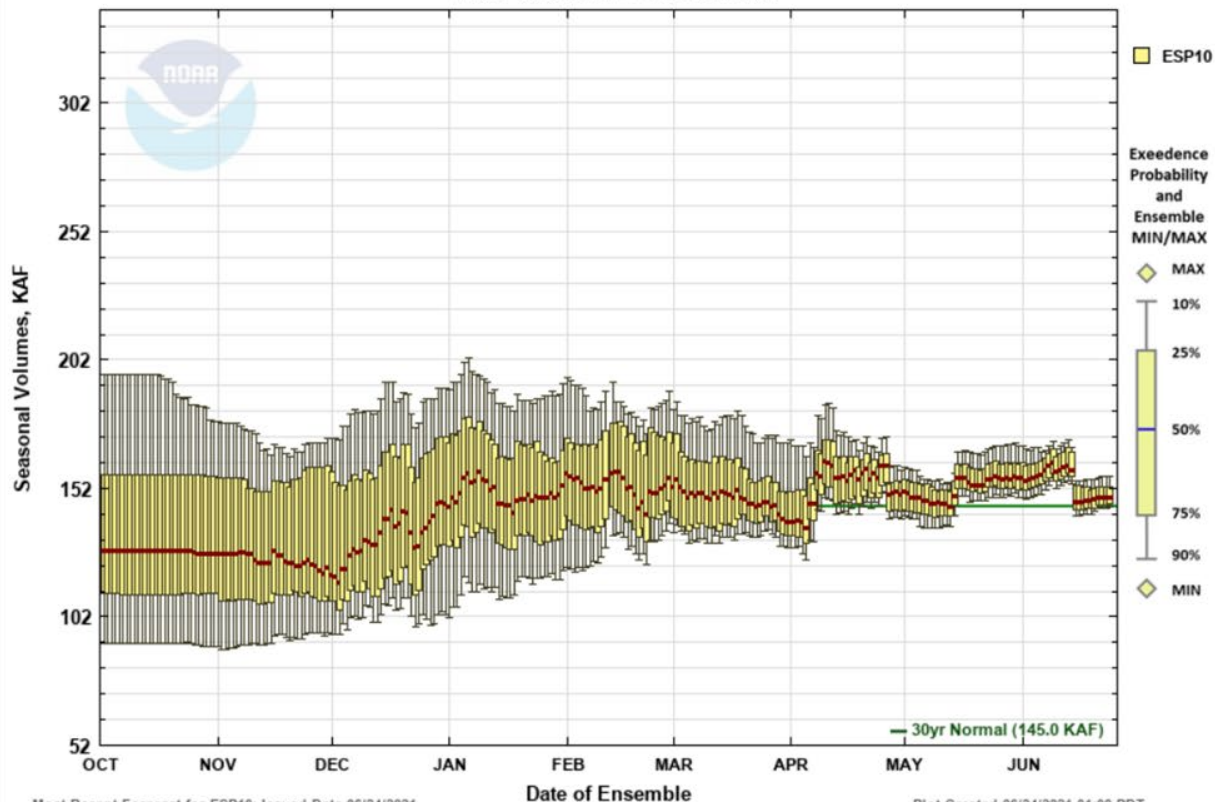
APR-SEP	142	147	102	155	145
APR-JUL	120	124	103	129	120
JAN-SEP	203	208	96	216	216
JAN-JUL	181	185	96	191	192
OCT-SEP	254	259	92	267	281

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

### Natural Volume Forecasts

#### DUNGENESS - NEAR SEQUIM

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

### CHEHALIS - AT PORTER (CRPW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	339	346	60	365	575
APR-JUL	299	300	57	305	522
JAN-SEP	2027	2034	104	2053	1957
JAN-JUL	1986	1988	104	1992	1904
OCT-SEP	2865	2873	100	2891	2873

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	339	346	60	366	575
APR-JUL	299	300	57	305	522
JAN-SEP	2027	2034	104	2053	1957
JAN-JUL	1986	1988	104	1992	1904
OCT-SEP	2865	2872	100	2892	2873

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

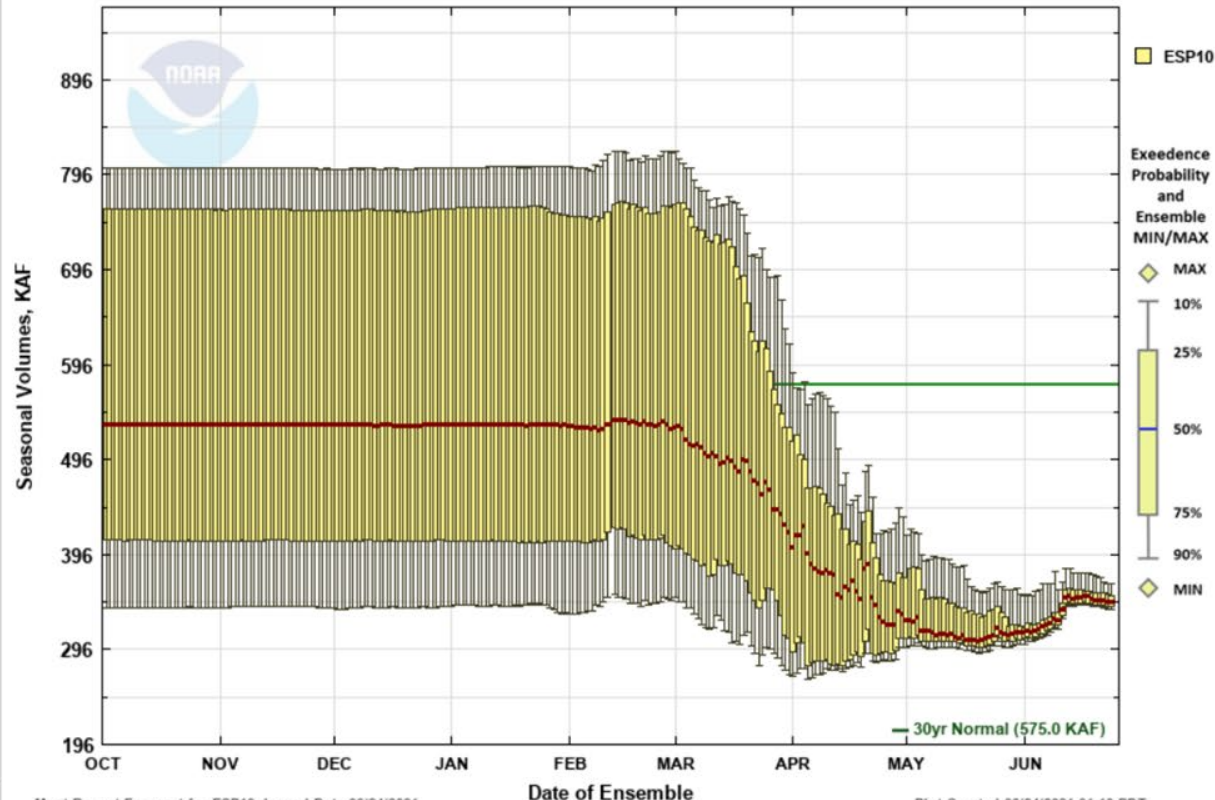
APR-SEP	340	349	61	374	575
APR-JUL	299	302	58	308	522
JAN-SEP	2028	2036	104	2062	1957
JAN-JUL	1987	1989	104	1995	1904
OCT-SEP	2866	2875	100	2901	2873

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

### Natural Volume Forecasts

CHEHALIS - AT PORTER

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

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Archive: [Water Year](#) ▼

### CALAWAH - NEAR FORKS (CALW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	69	74	47	95	158
APR-JUL	63	63	46	70	138
JAN-SEP	409	413	85	434	485
JAN-JUL	402	403	87	410	464
OCT-SEP	712	716	92	738	782

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	69	74	47	95	158
APR-JUL	63	63	46	65	138
JAN-SEP	409	413	85	434	485
JAN-JUL	402	403	87	404	464
OCT-SEP	712	716	92	738	782

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

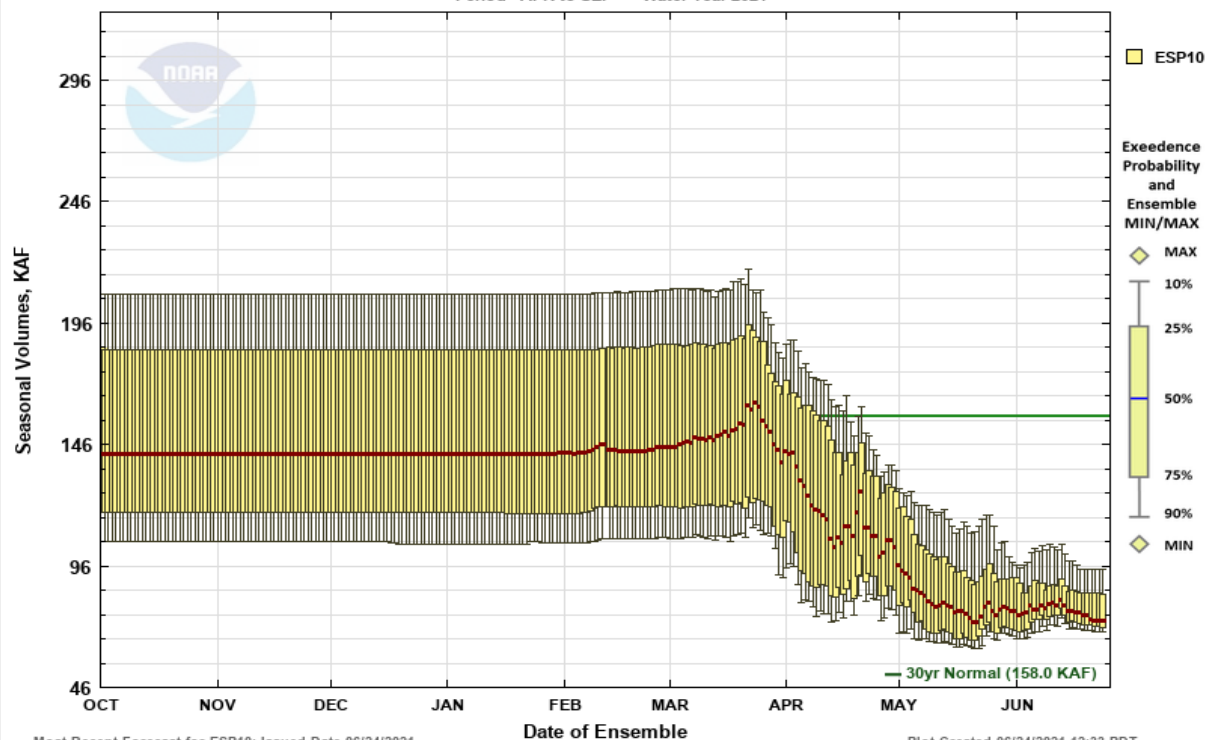
APR-SEP	70	78	49	98	158
APR-JUL	63	64	46	74	138
JAN-SEP	410	417	86	438	485
JAN-JUL	402	403	87	413	464
OCT-SEP	713	720	92	741	782

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

### Natural Volume Forecasts

#### CALAWAH - NEAR FORKS

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

### OKANOGAN - AT MALOTT (OKMW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	1630	1644	99	1669	1663
APR-JUL	1560	1562	105	1566	1494
JAN-SEP	1910	1923	100	1948	1916
JAN-JUL	1839	1841	105	1846	1746
OCT-SEP	2240	2254	105	2279	2151

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	1625	1642	99	1677	1663
APR-JUL	1554	1560	104	1581	1494
JAN-SEP	1905	1922	100	1957	1916
JAN-JUL	1833	1840	105	1860	1746
OCT-SEP	2235	2252	105	2287	2151

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

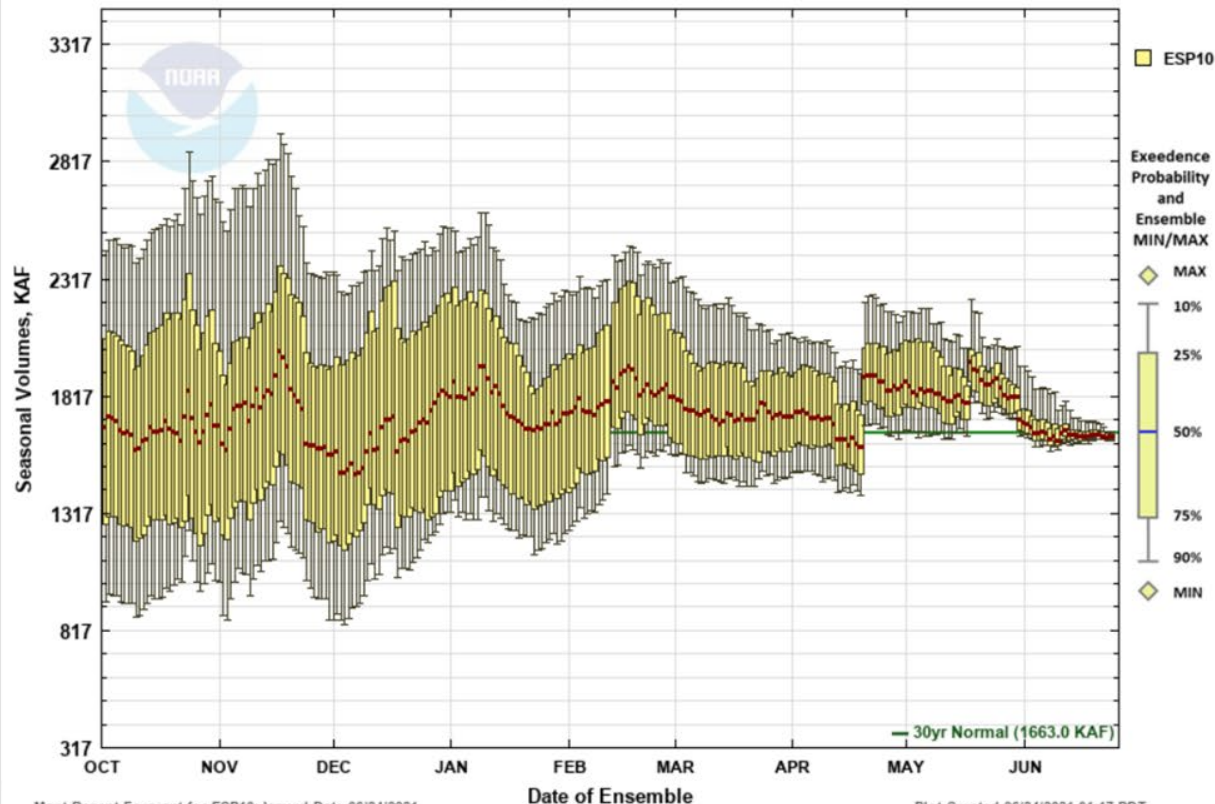
APR-SEP	1592	1630	98	1701	1663
APR-JUL	1520	1543	103	1601	1494
JAN-SEP	1871	1910	100	1980	1916
JAN-JUL	1800	1823	104	1881	1746
OCT-SEP	2202	2240	104	2311	2151

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

### Natural Volume Forecasts

OKANOGAN - AT MALOTT

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

### METHOW - NEAR PATEROS (PATW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	958	960	107	973	895
APR-JUL	905	905	109	916	833
JAN-SEP	1059	1061	108	1075	985
JAN-JUL	1006	1007	109	1018	923
OCT-SEP	1182	1184	110	1198	1075

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	946	952	106	979	895
APR-JUL	893	897	108	919	833
JAN-SEP	1047	1053	107	1080	985
JAN-JUL	994	998	108	1020	923
OCT-SEP	1170	1176	109	1203	1075

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

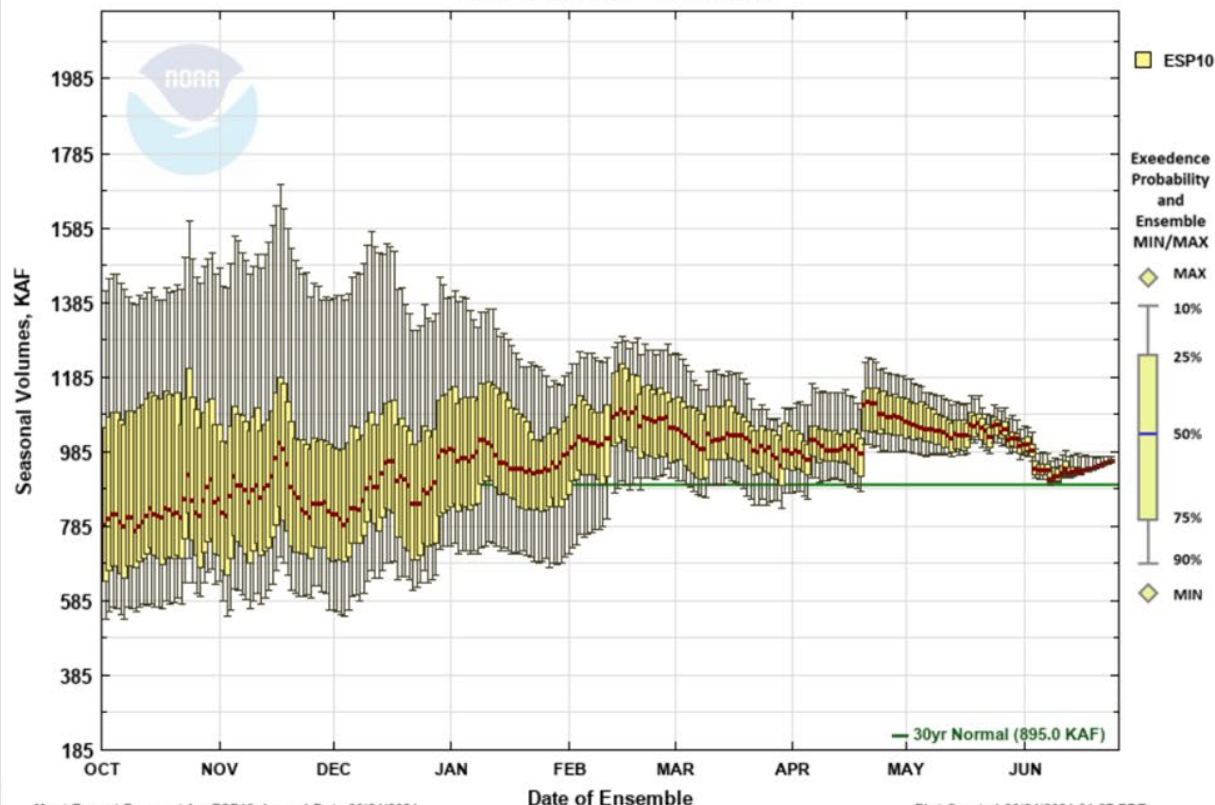
APR-SEP	920	928	104	972	895
APR-JUL	868	876	105	903	833
JAN-SEP	1021	1029	105	1073	985
JAN-JUL	969	977	106	1004	923
OCT-SEP	1144	1153	107	1196	1075

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

### Natural Volume Forecasts

#### METHOW - NEAR PATEROS

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

### YAKIMA - NEAR PARKER (PARW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	2180	2191	108	2234	2025
APR-JUL	2007	2015	110	2031	1827
JAN-SEP	2877	2888	101	2931	2868
JAN-JUL	2704	2712	102	2728	2669
OCT-SEP	3484	3495	102	3538	3419

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	2180	2197	109	2238	2025
APR-JUL	2003	2015	110	2035	1827
JAN-SEP	2877	2894	101	2935	2868
JAN-JUL	2700	2712	102	2732	2669
OCT-SEP	3484	3501	102	3543	3419

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

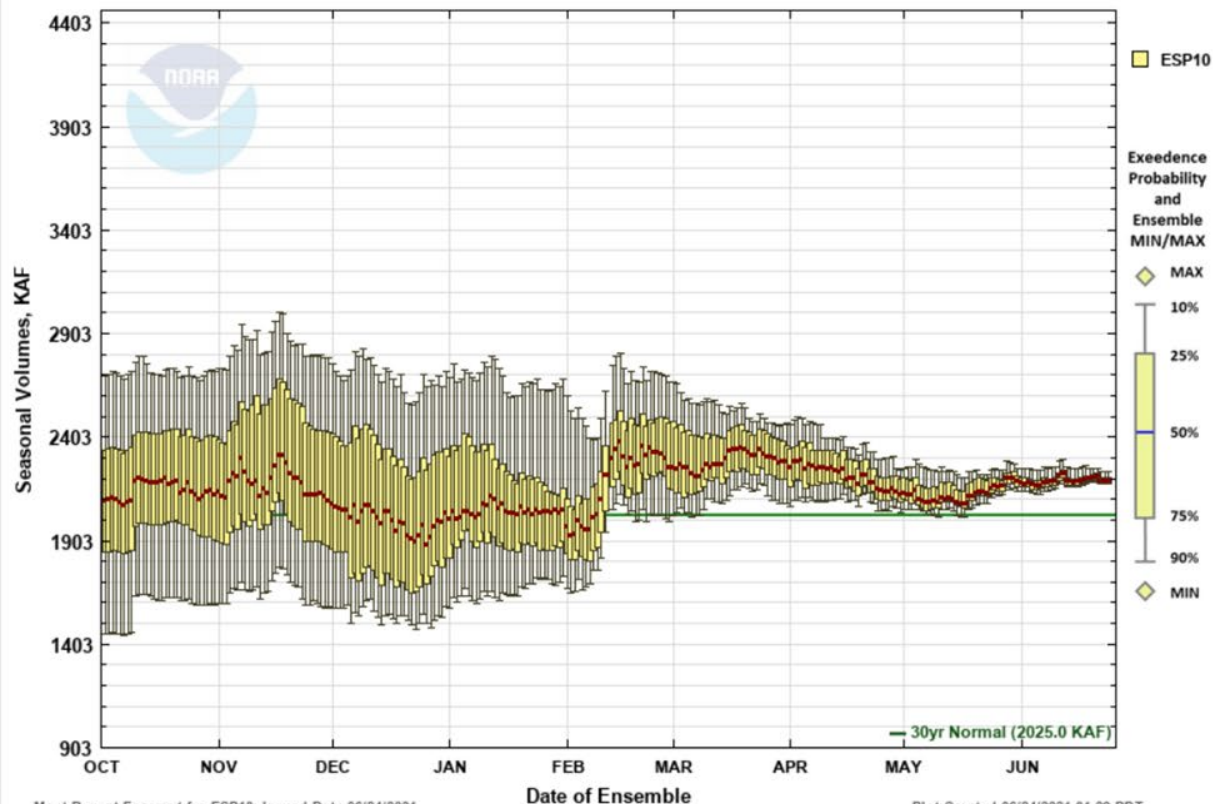
APR-SEP	2151	2178	108	2243	2025
APR-JUL	1959	1981	108	2015	1827
JAN-SEP	2848	2875	100	2940	2868
JAN-JUL	2656	2678	100	2712	2669
OCT-SEP	3455	3482	102	3547	3419

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

### Natural Volume Forecasts

YAKIMA - NEAR PARKER

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

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### WALLA WALLA - NEAR TOUCHET (TCHW1) Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	Average	10 %	
APR-SEP	78	79	51	80	155
APR-JUL	75	76	54	76	141
JAN-SEP	264	265	74	267	359
JAN-JUL	262	262	76	263	345
OCT-SEP	324	325	77	326	422

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	78	79	51	80	155
APR-JUL	75	76	54	76	141
JAN-SEP	264	265	74	267	359
JAN-JUL	262	262	76	263	345
OCT-SEP	324	325	77	326	422

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

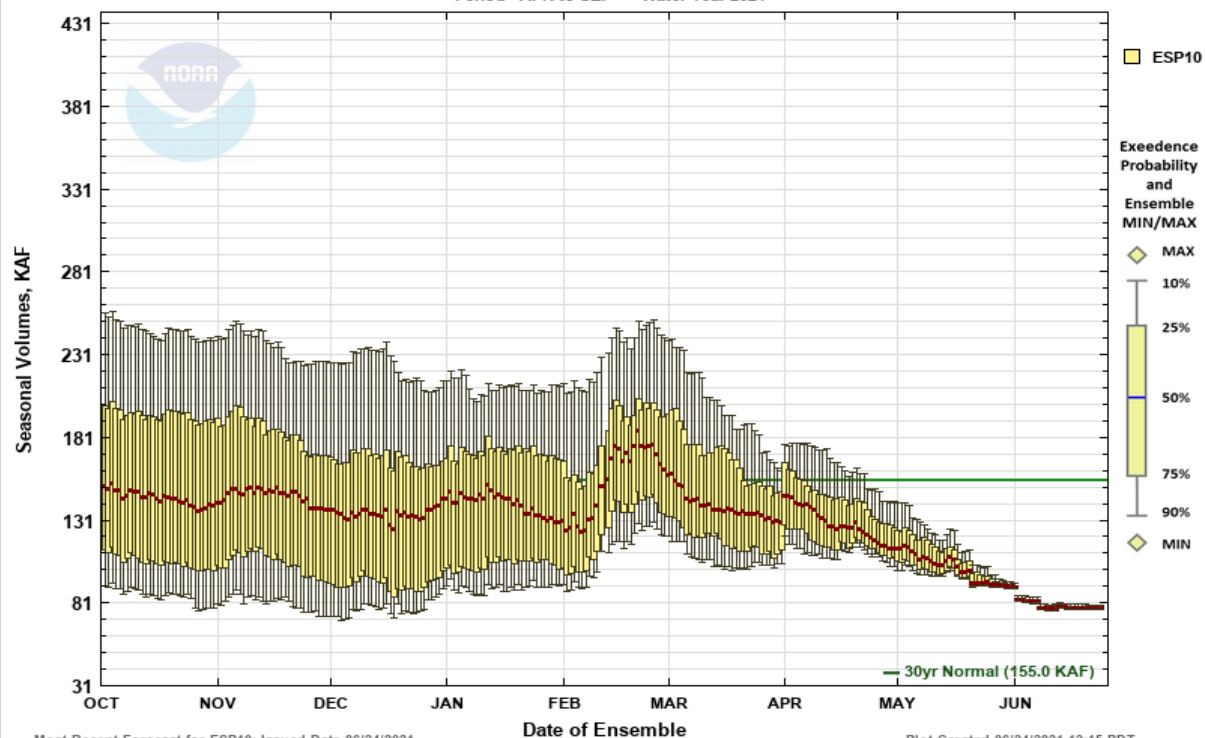
APR-SEP	78	79	51	81	155
APR-JUL	76	76	54	77	141
JAN-SEP	265	266	74	268	359
JAN-JUL	262	263	76	264	345
OCT-SEP	324	325	77	327	422

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

### Natural Volume Forecasts

#### WALLA WALLA - NEAR TOUCHET

Period APR to SEP -- Water Year 2021





# Northwest River Forecast Center

## ESP Natural Forecasts

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### PALOUSE - AT HOOVER (HOPW1)

Forecasts for Water Year 2021

#### Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	68	68	52	70	131
APR-JUL	67	67	53	67	127
JAN-SEP	249	250	67	251	375
JAN-JUL	248	248	67	248	370
OCT-SEP	278	278	68	279	411

#### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-24 Issued: 2021-06-24

APR-SEP	68	68	52	70	131
APR-JUL	67	67	53	67	127
JAN-SEP	249	249	67	251	375
JAN-JUL	248	248	67	248	370
OCT-SEP	278	278	68	279	411

#### Reference

ESP with 0 Days QPF Ensemble: 2021-06-24 Issued: 2021-06-24

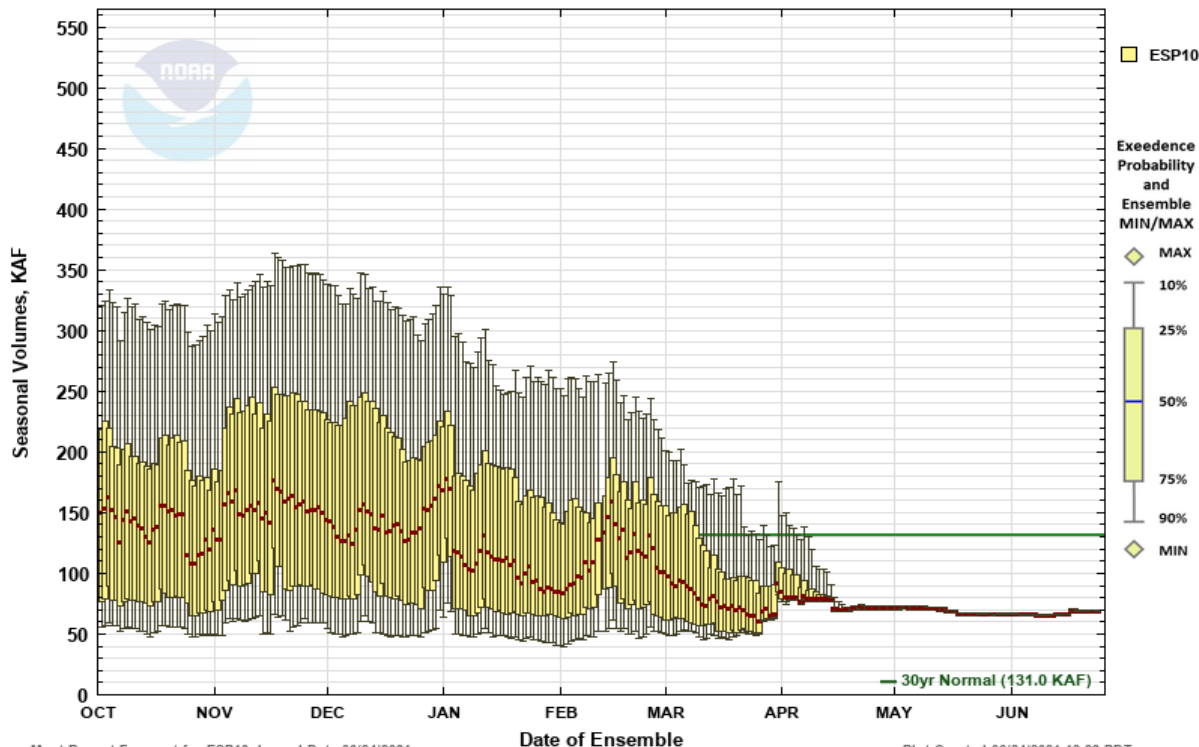
APR-SEP	68	69	53	71	131
APR-JUL	67	67	53	68	127
JAN-SEP	249	250	67	252	375
JAN-JUL	248	248	67	249	370
OCT-SEP	278	279	68	280	411

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

### Natural Volume Forecasts

PALOUSE - AT HOOVER

Period APR to SEP -- Water Year 2021



Most Recent Forecast for ESP10: Issued Date 06/24/2021

Plot Created 06/24/2021 12:22 PDT

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

# NWS Water Supply Forecasts

- Supply forecasts in general have not changed significantly from last month.
  - June rain provided some small increases for west side locations.
  - A mix of changes, but overall small for most of the east side locations.
- Water supply volume forecasts differences:
  - Cascade runoff mostly normal or above – east and west sides
  - Much less coast and southwest and east and southeast

# CALAWAH - NEAR FORKS | 2021 FORECASTED RUNOFF (APR-SEPT) COMPARED TO HISTORIC RUNOFF (1949-2020)

