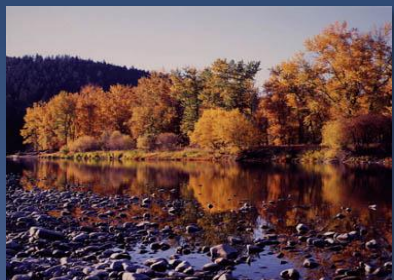




# Northwest River Forecast Center



## June 2022 Water Supply Briefing

Telephone Conference: (562) 247-8422

Audio Access Code: 146-348-602#

Amy Burke

[NWRFC.watersupply@noaa.gov](mailto:NWRFC.watersupply@noaa.gov)

\*Audio PIN is provided when logging into the webinar and will be required if you wish to ask questions at the end of presentation



# Take Home Messages

May was cold basin-wide but precipitation varied.

Snowmelt has been delayed, especially in the north.

Year to date percent of normal runoff decreased in basins with delayed melt but increased in many locations west of the Cascades.

Water supply forecasts increased in the majority of basins.



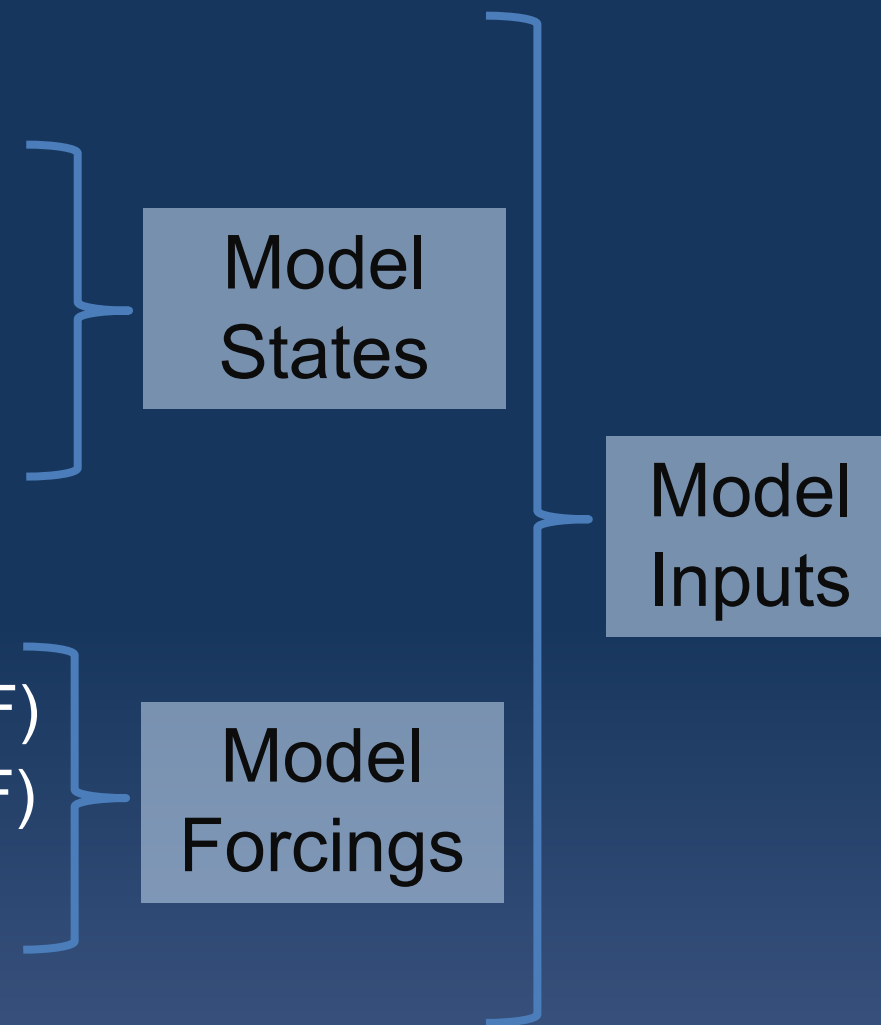
# Water Supply Forecast Briefing

## Observed Conditions:

- Temperature
- Precipitation
- Snowpack
- Runoff

## Future Conditions:

- 10 days of quantitative precipitation forecast (QPF)
- 10 days of quantitative temperature forecast (QTF)
- Historical climate forcings appended thereafter

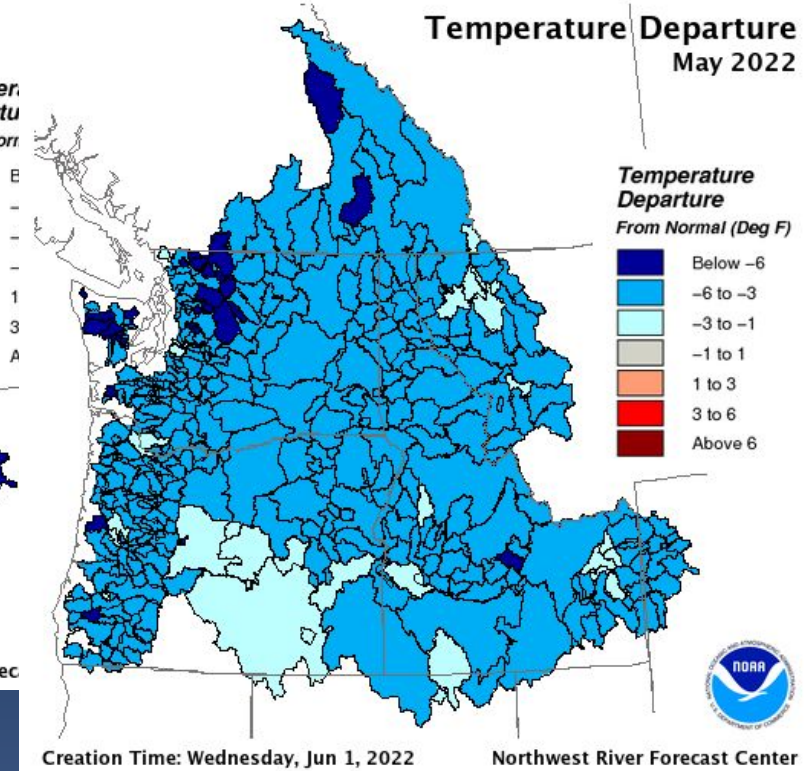
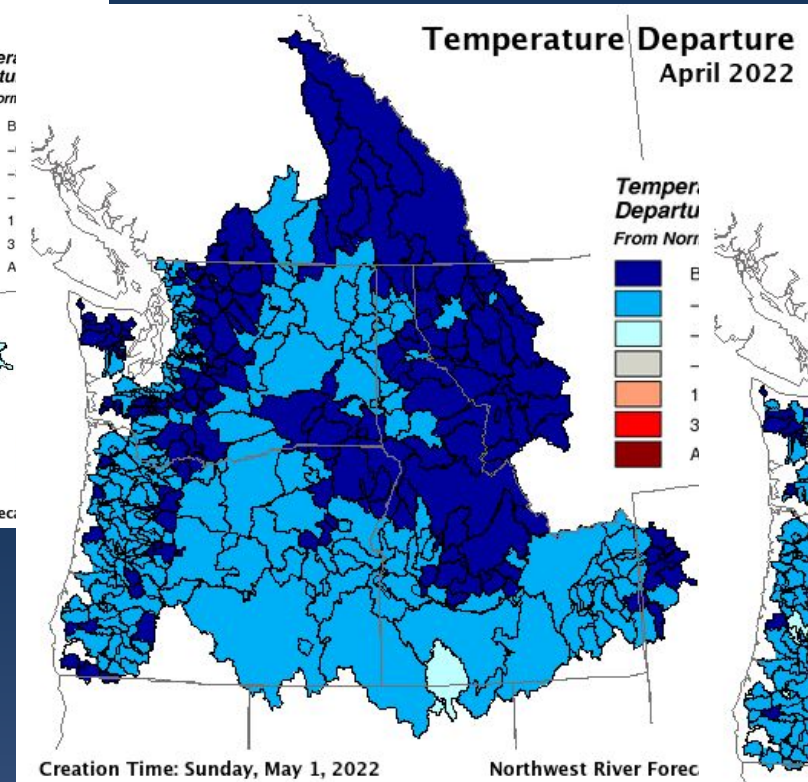
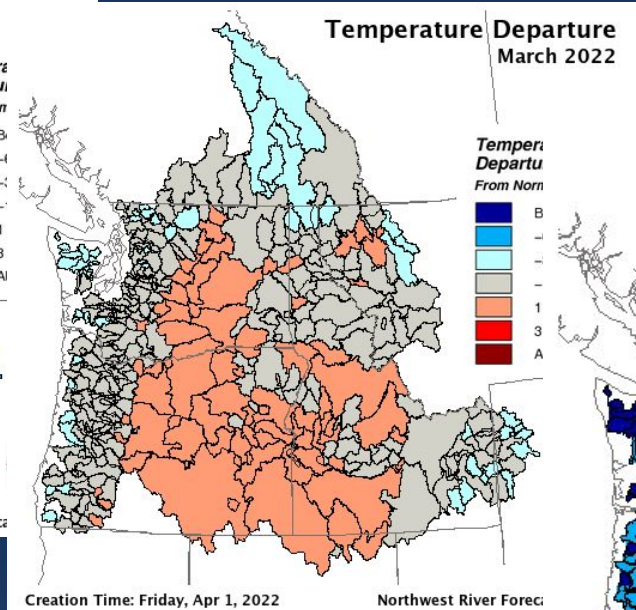
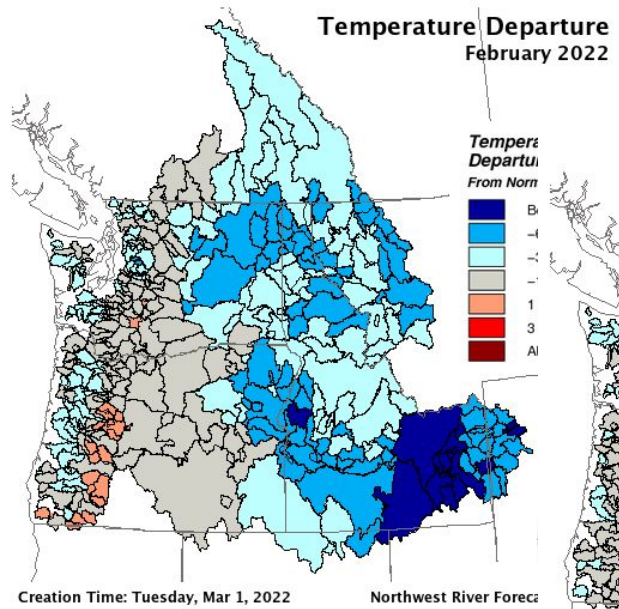


## Water Supply Forecasts



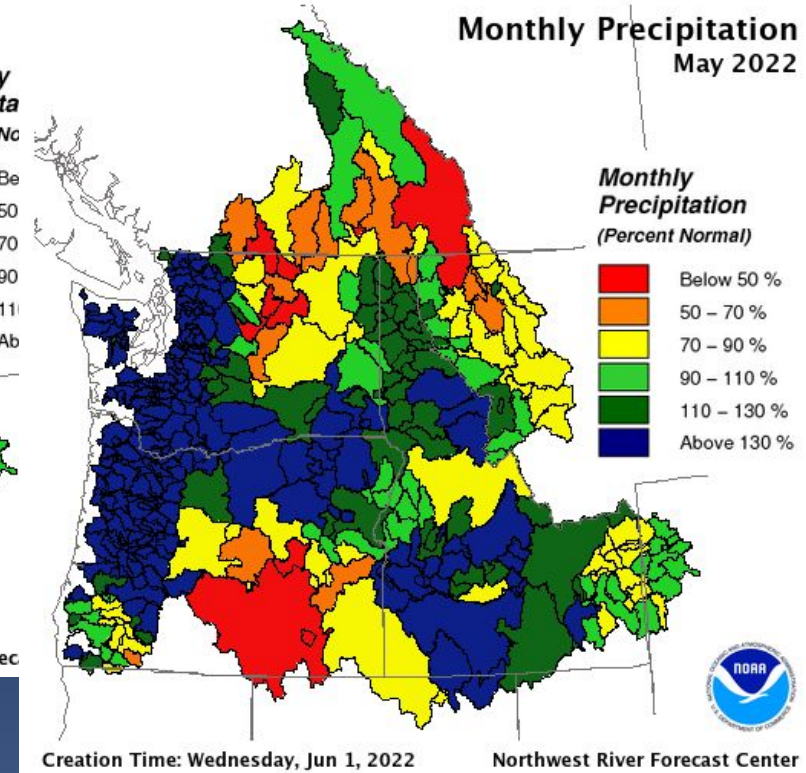
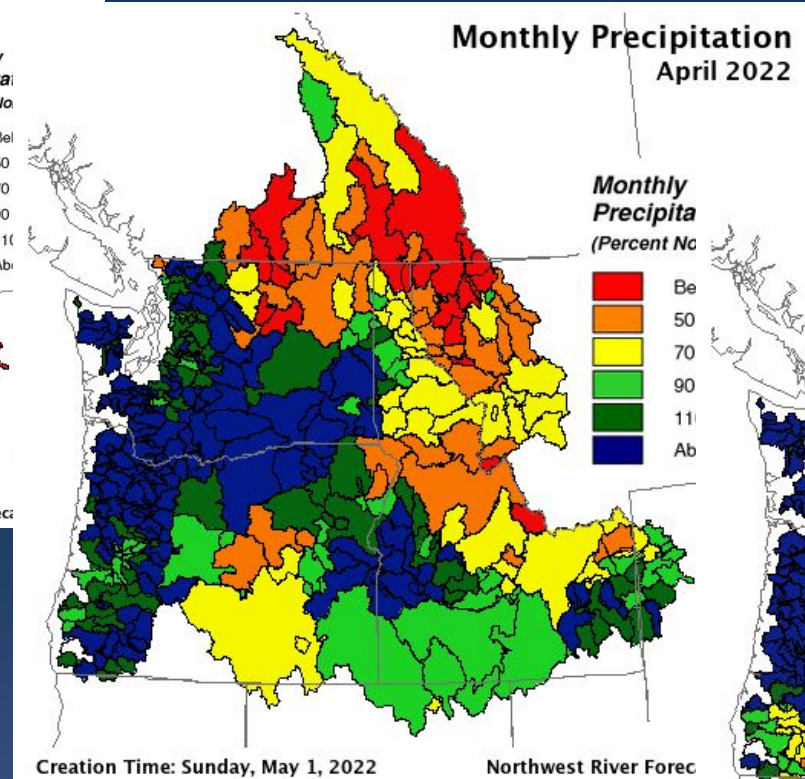
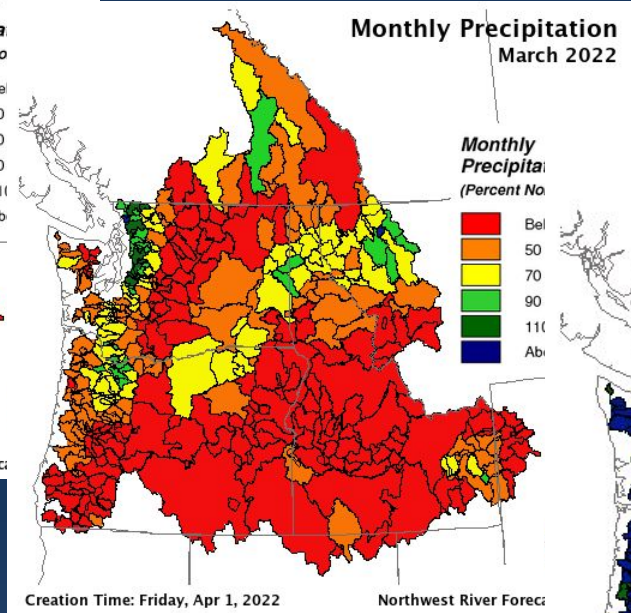
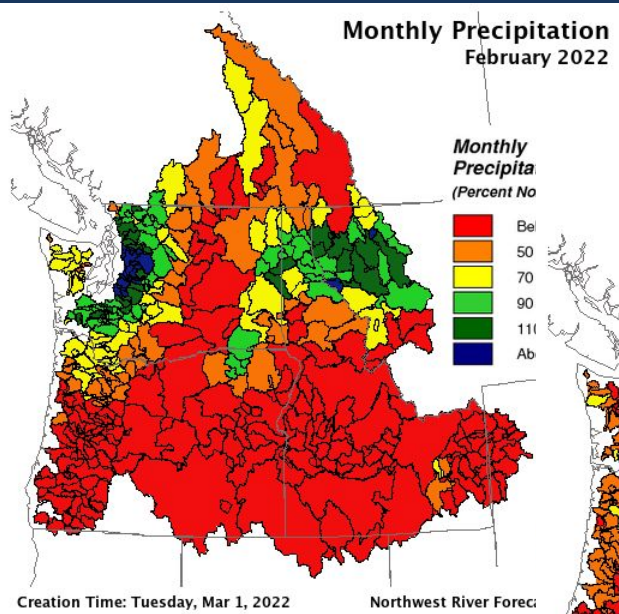


# Monthly Temperature Departure





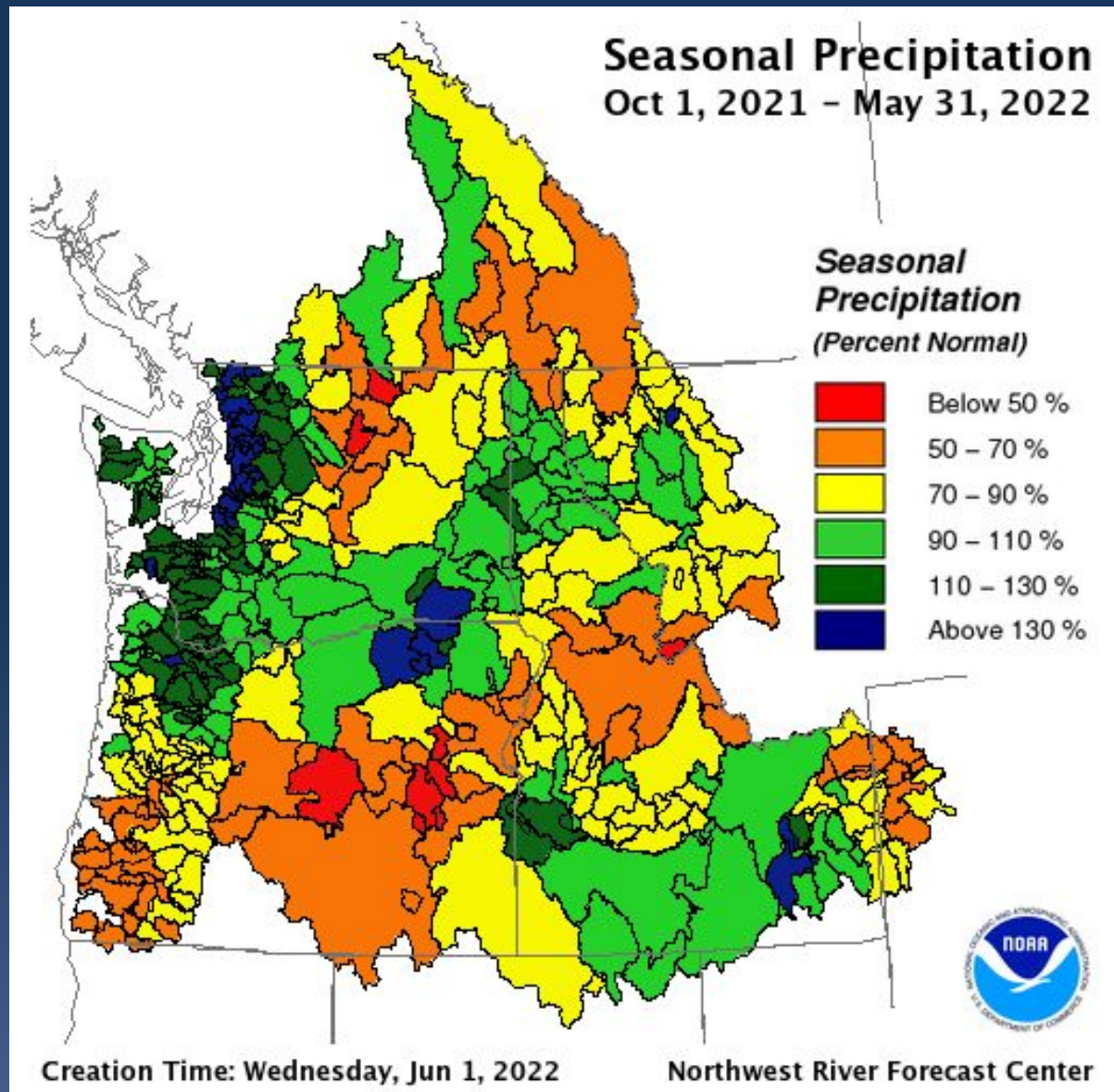
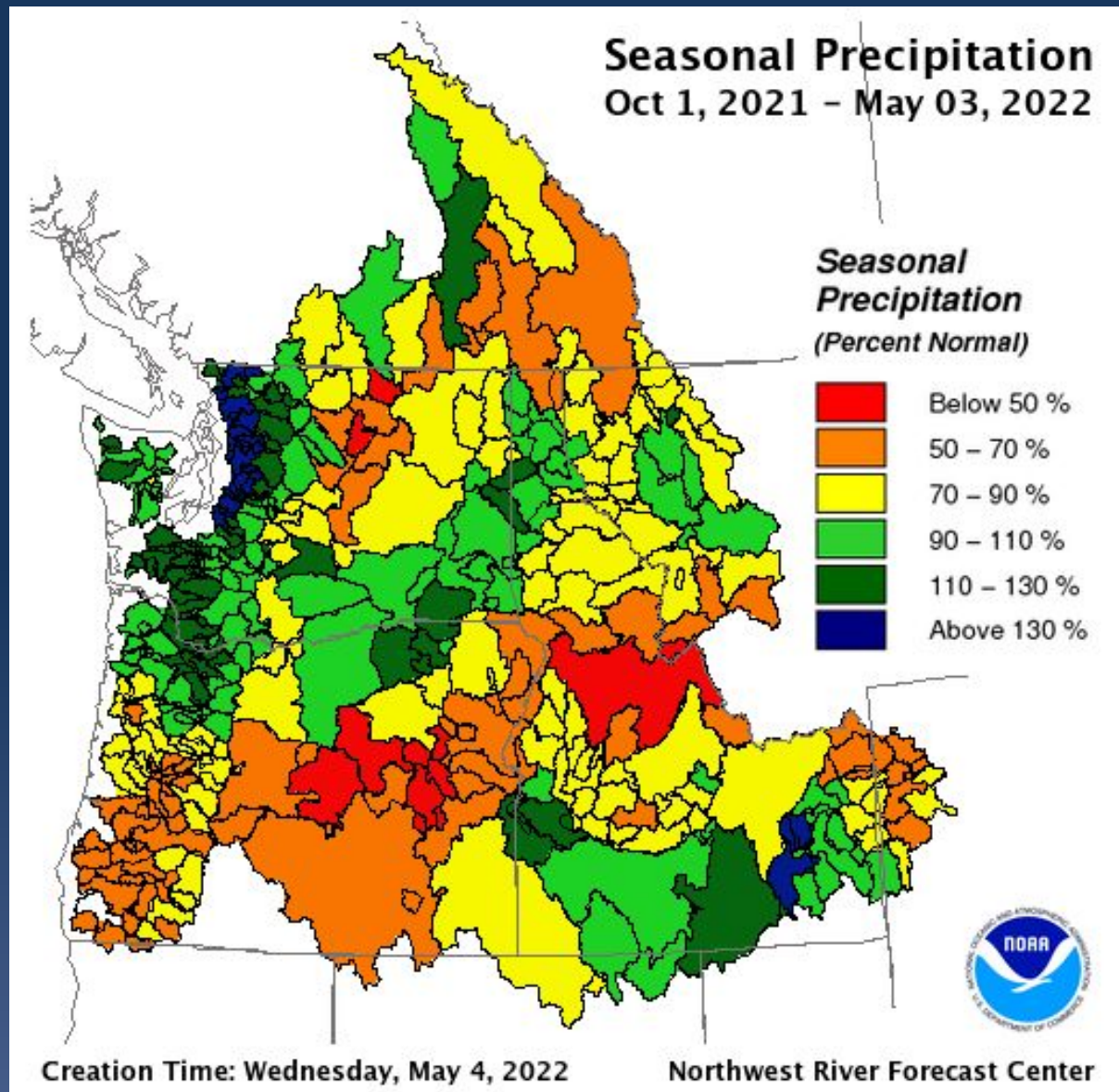
# Monthly Precipitation







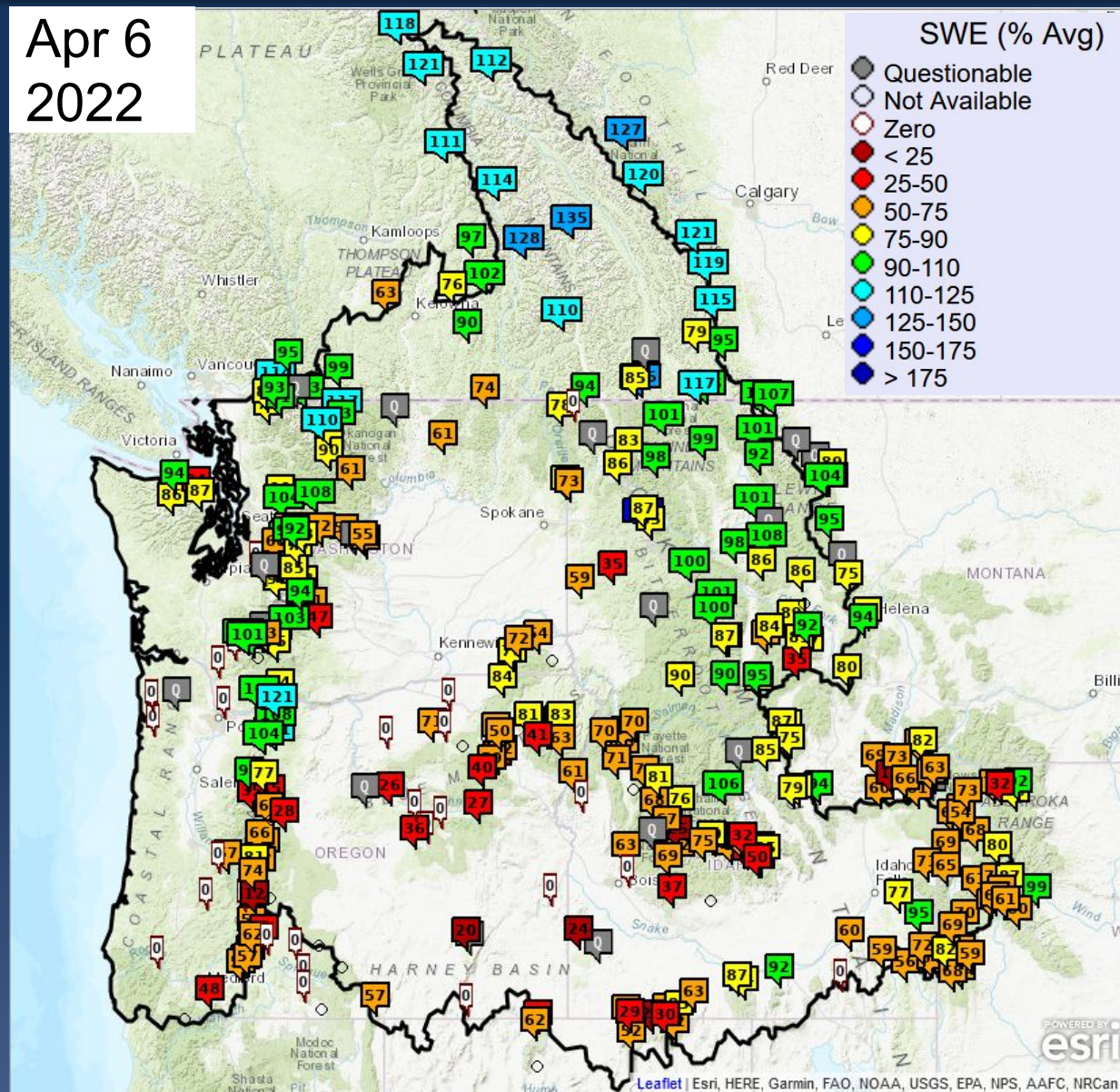
# Water Year to Date Precipitation



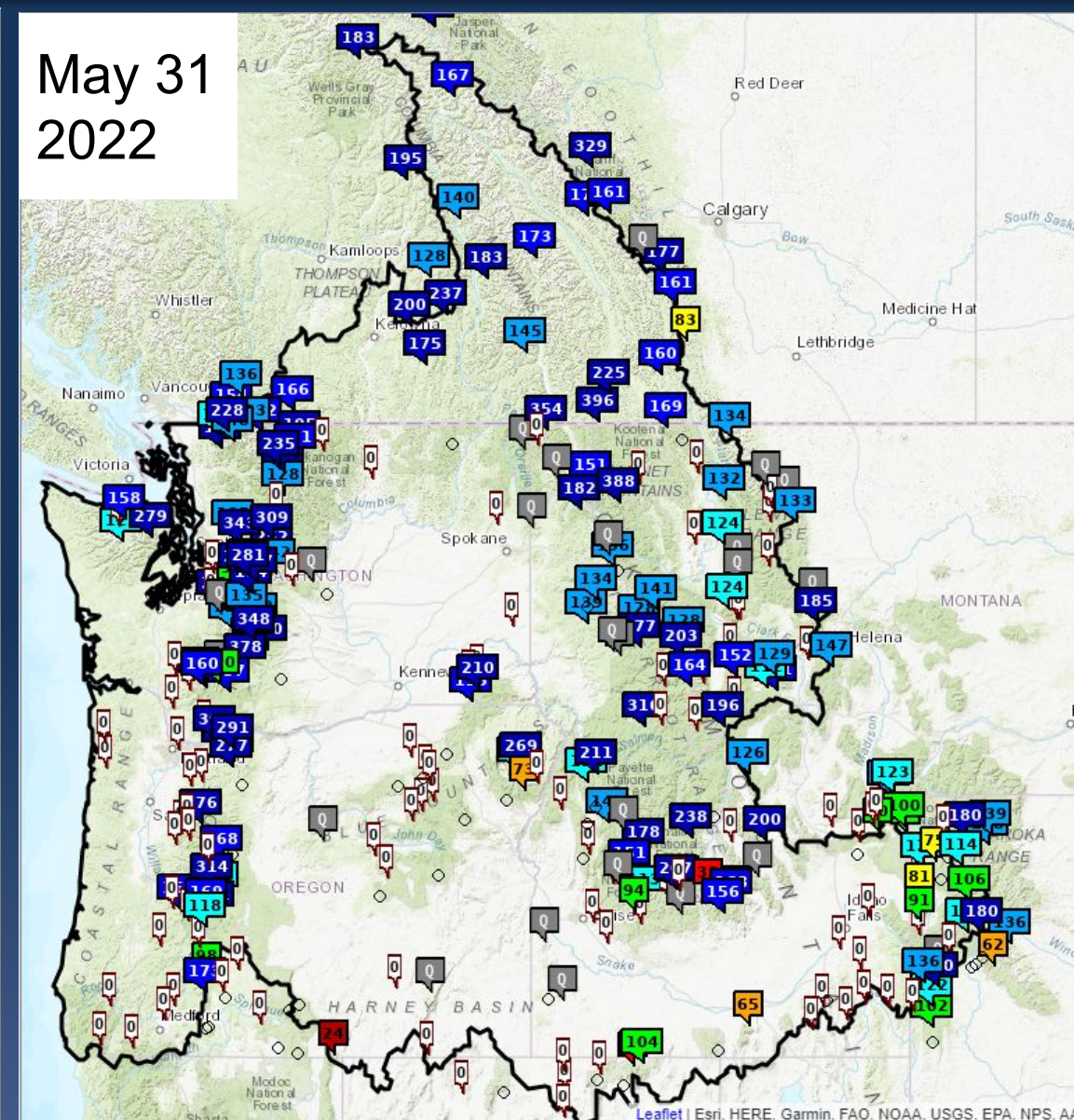


# Snowpack

Apr 6  
2022



May 31  
2022

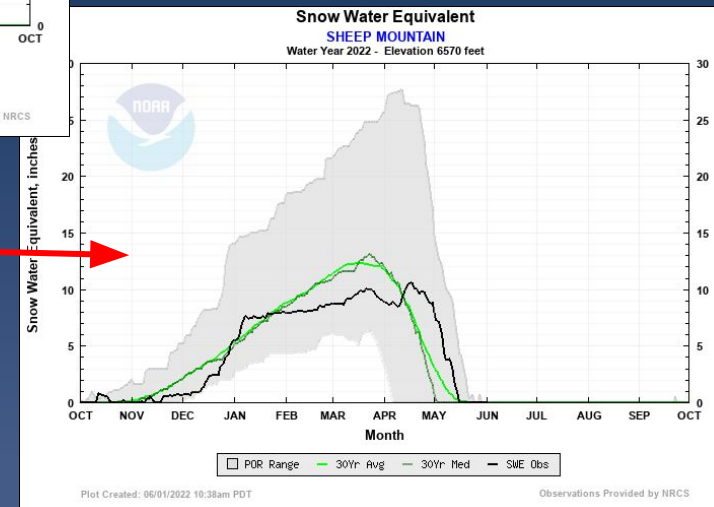
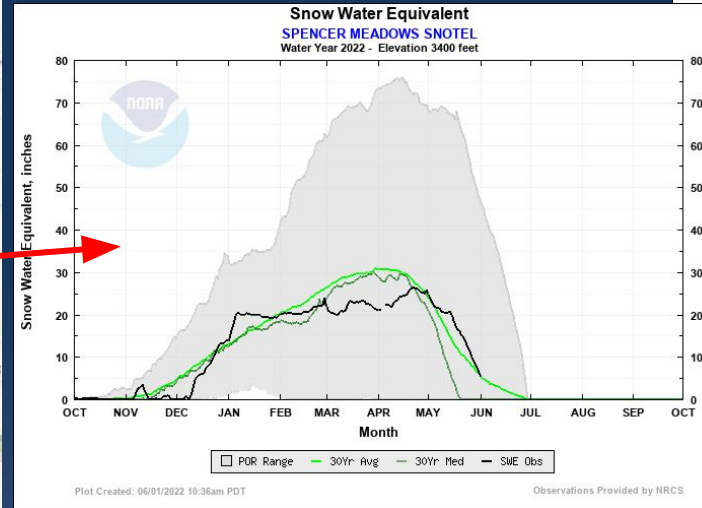
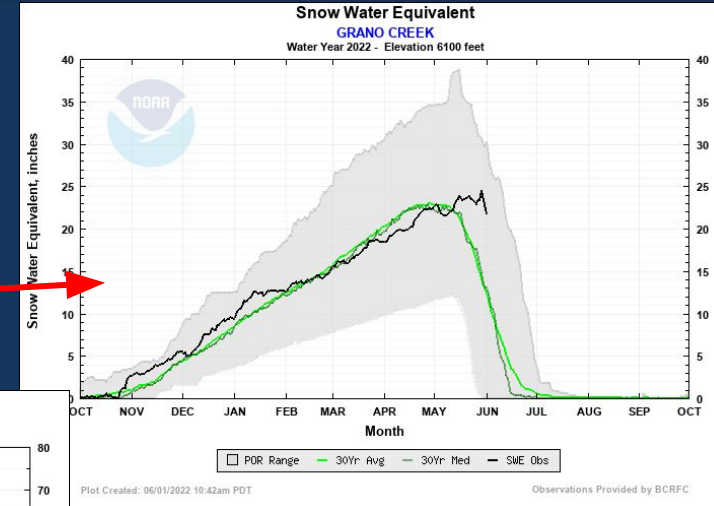
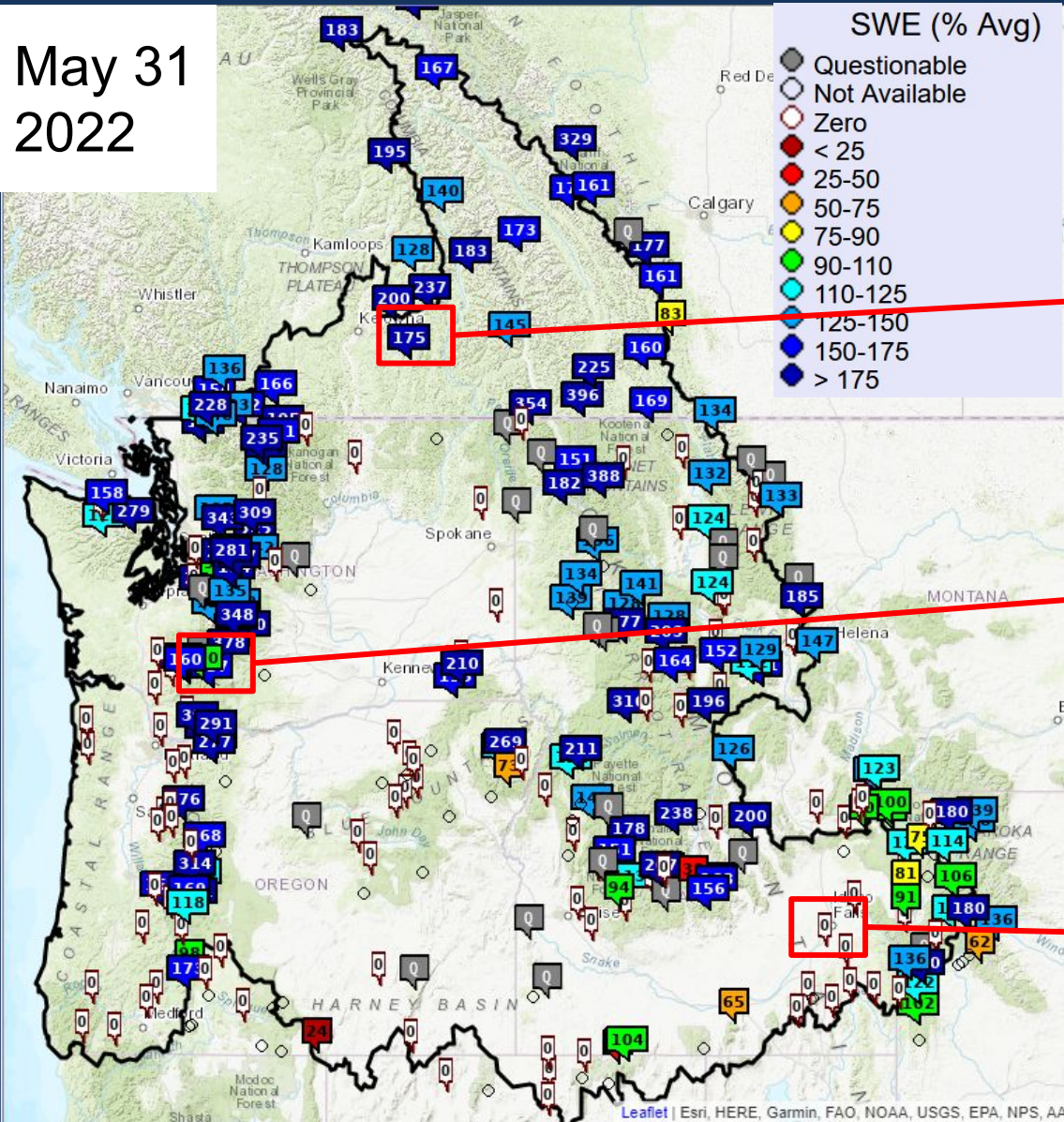


Snow data from Natural Resources Conservation Service (NRCS), BC Hydro, and Alberta Environment and Parks (EP).



# Snowpack

May 31  
2022

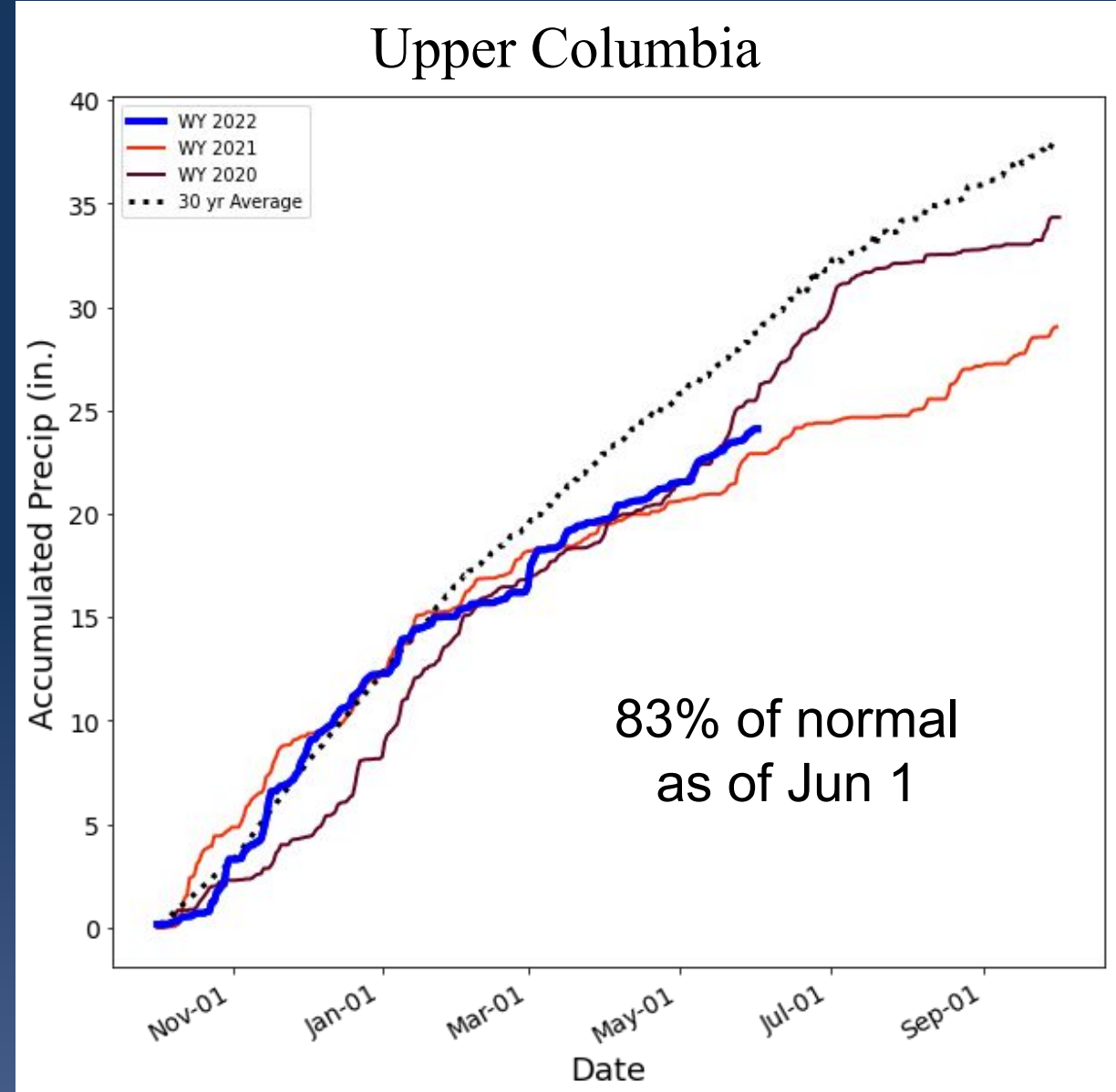
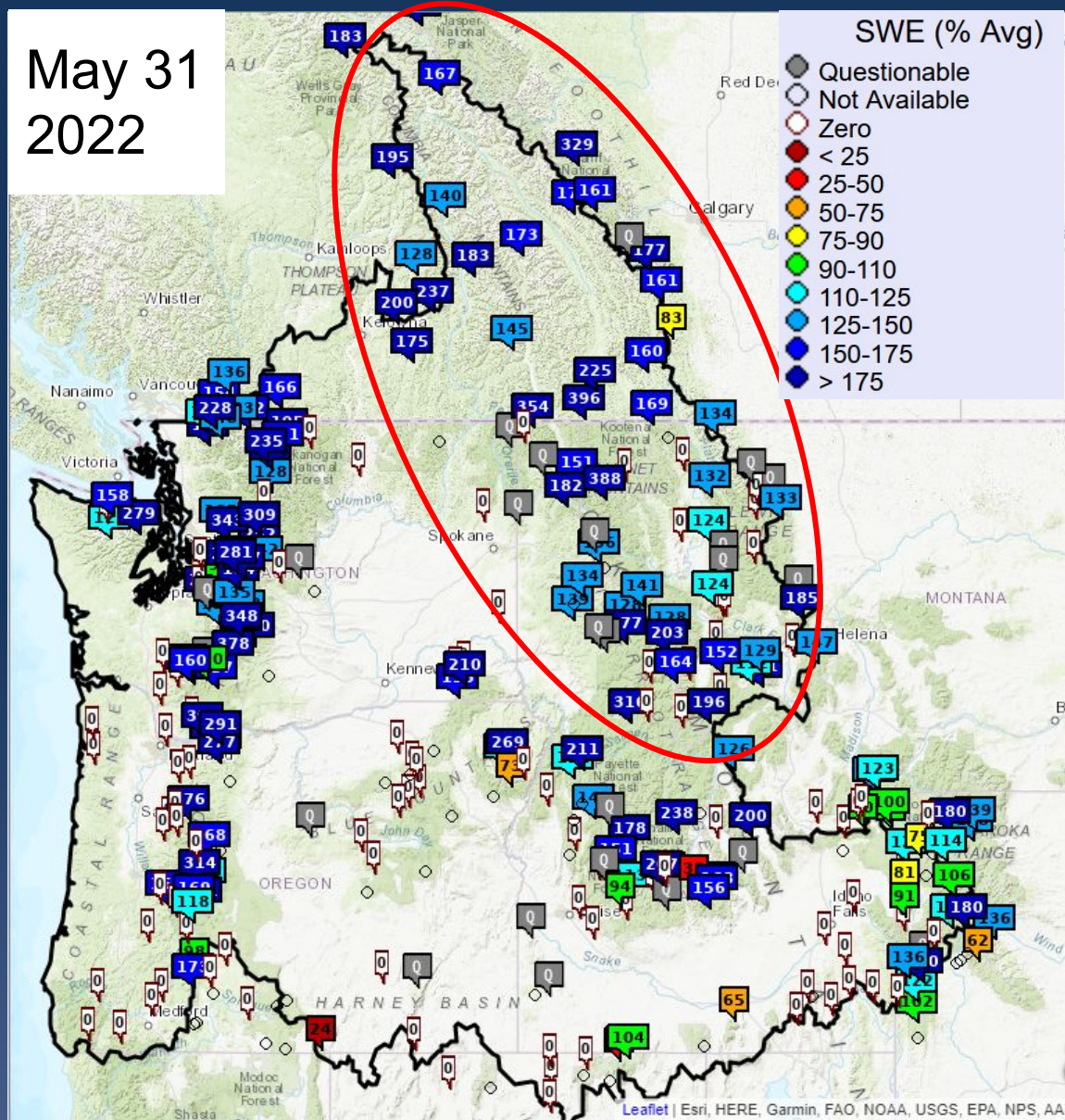


Snow data from NRCS, BC Hydro, and Alberta EP.



# Snowpack and Seasonal Precipitation

May 31  
2022

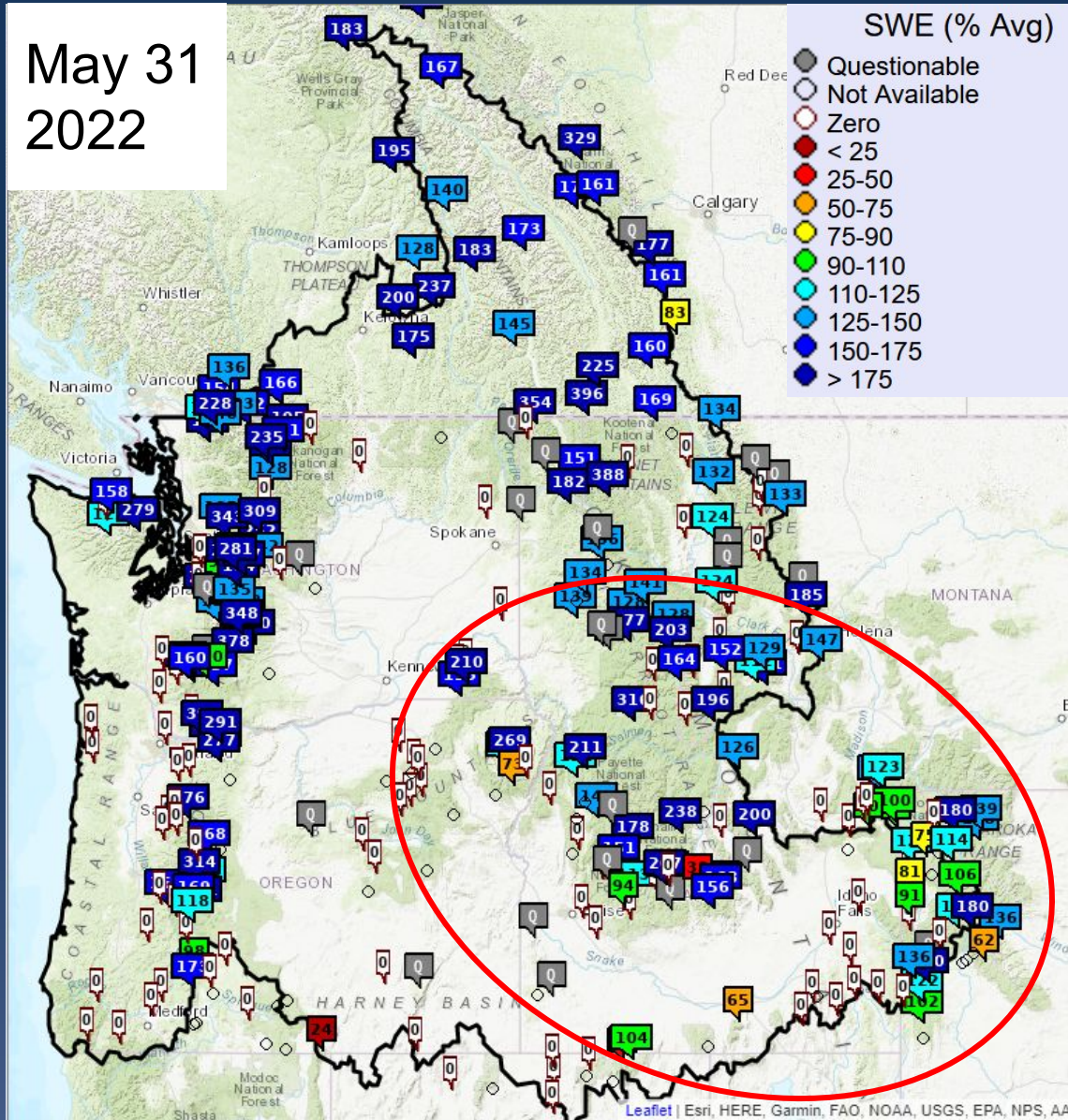


Snow data from NRCS, BC Hydro, and Alberta EP.

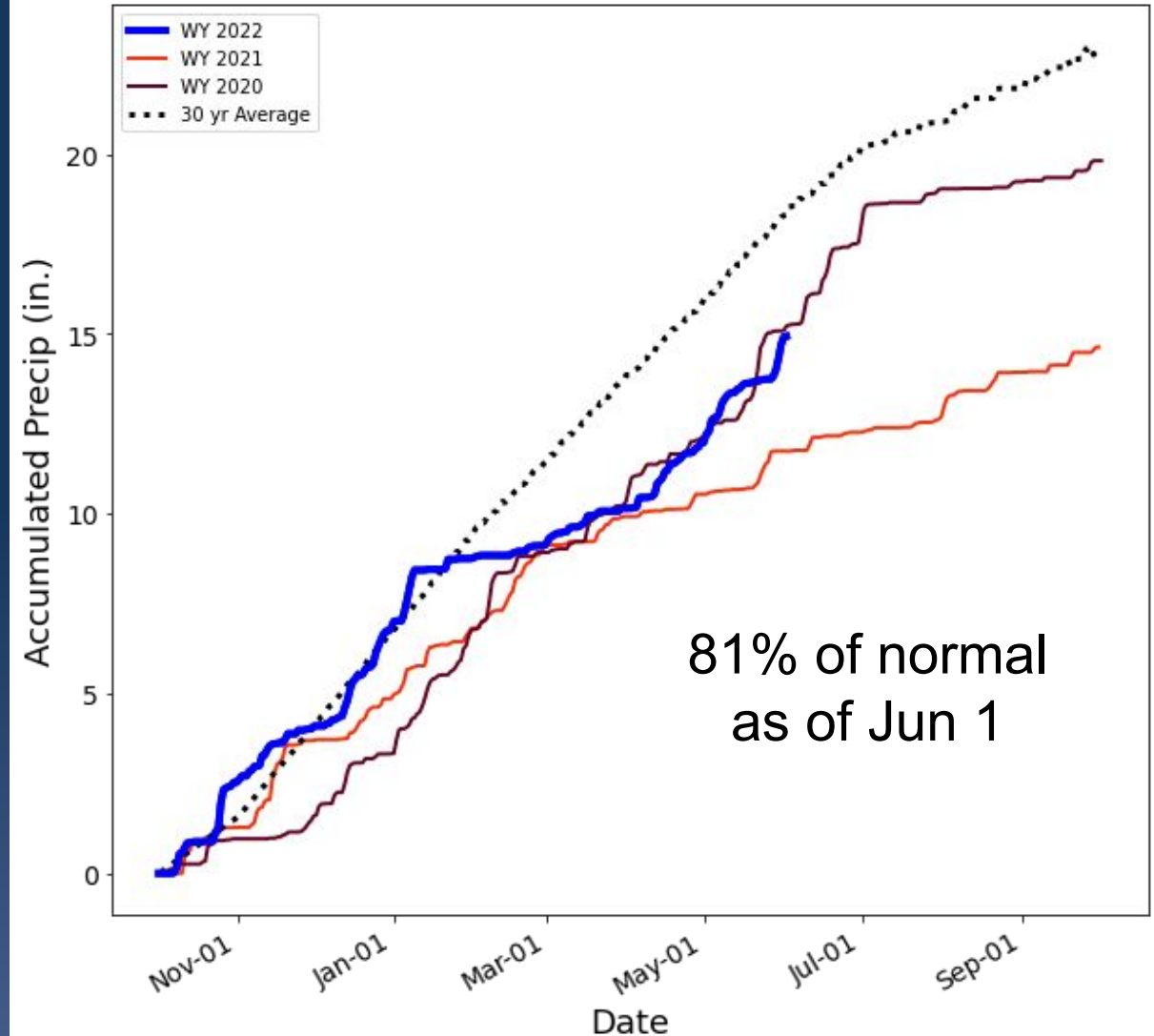


# Snowpack and Seasonal Precipitation

May 31  
2022



## Snake River

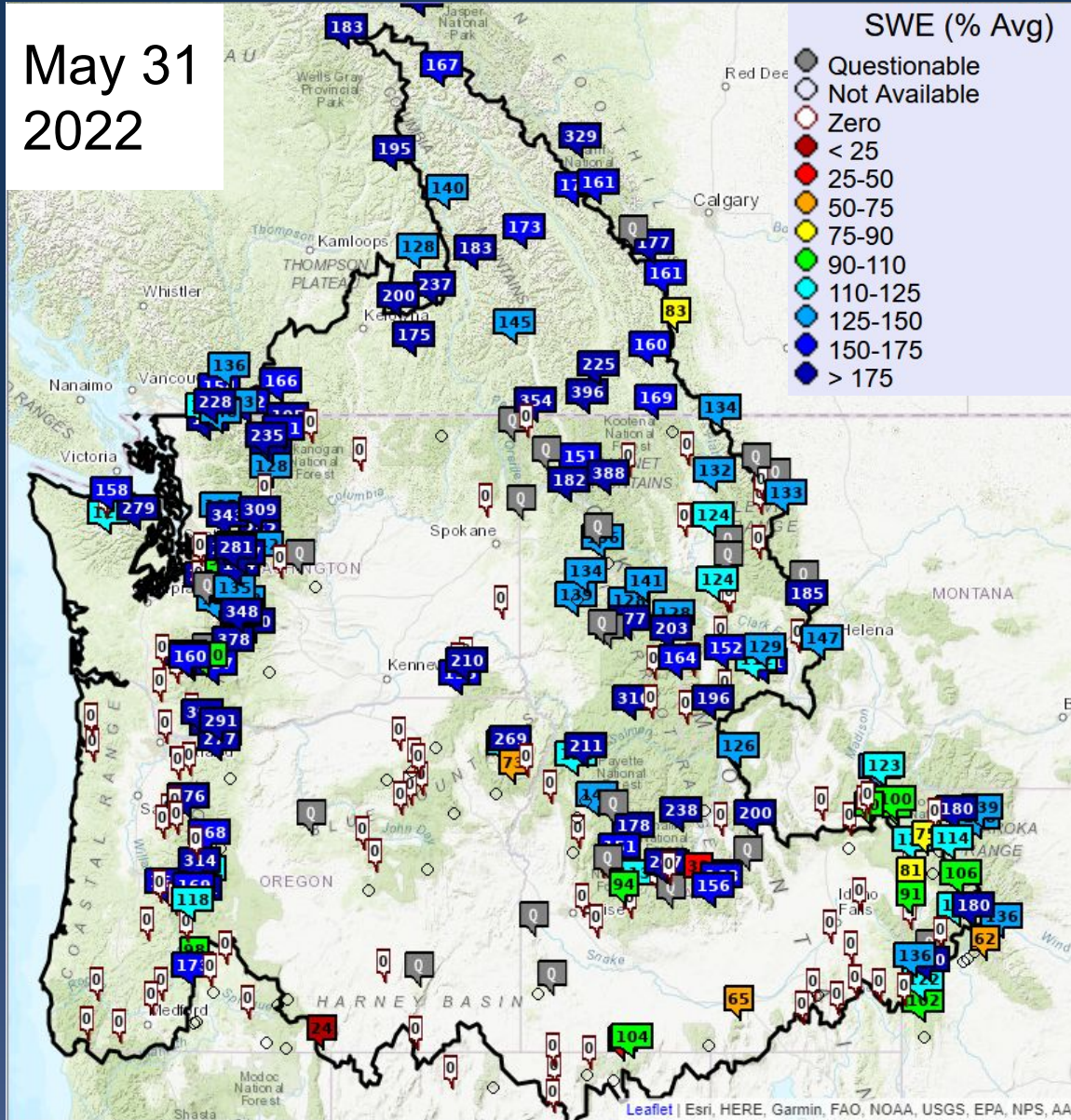


Snow data from NRCS, BC Hydro, and Alberta EP.

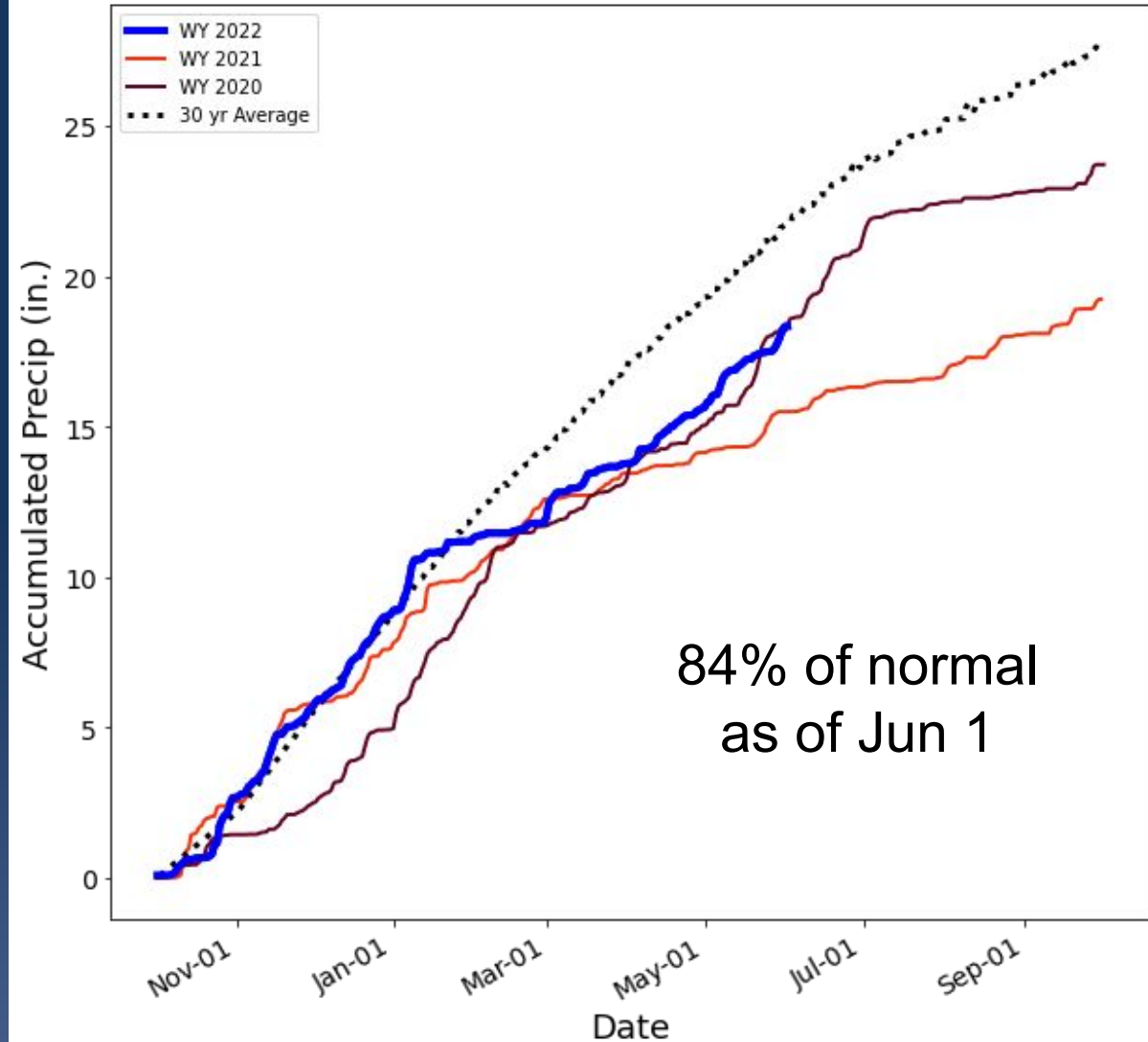


# Snowpack and Seasonal Precipitation

May 31  
2022



## Columbia River above The Dalles

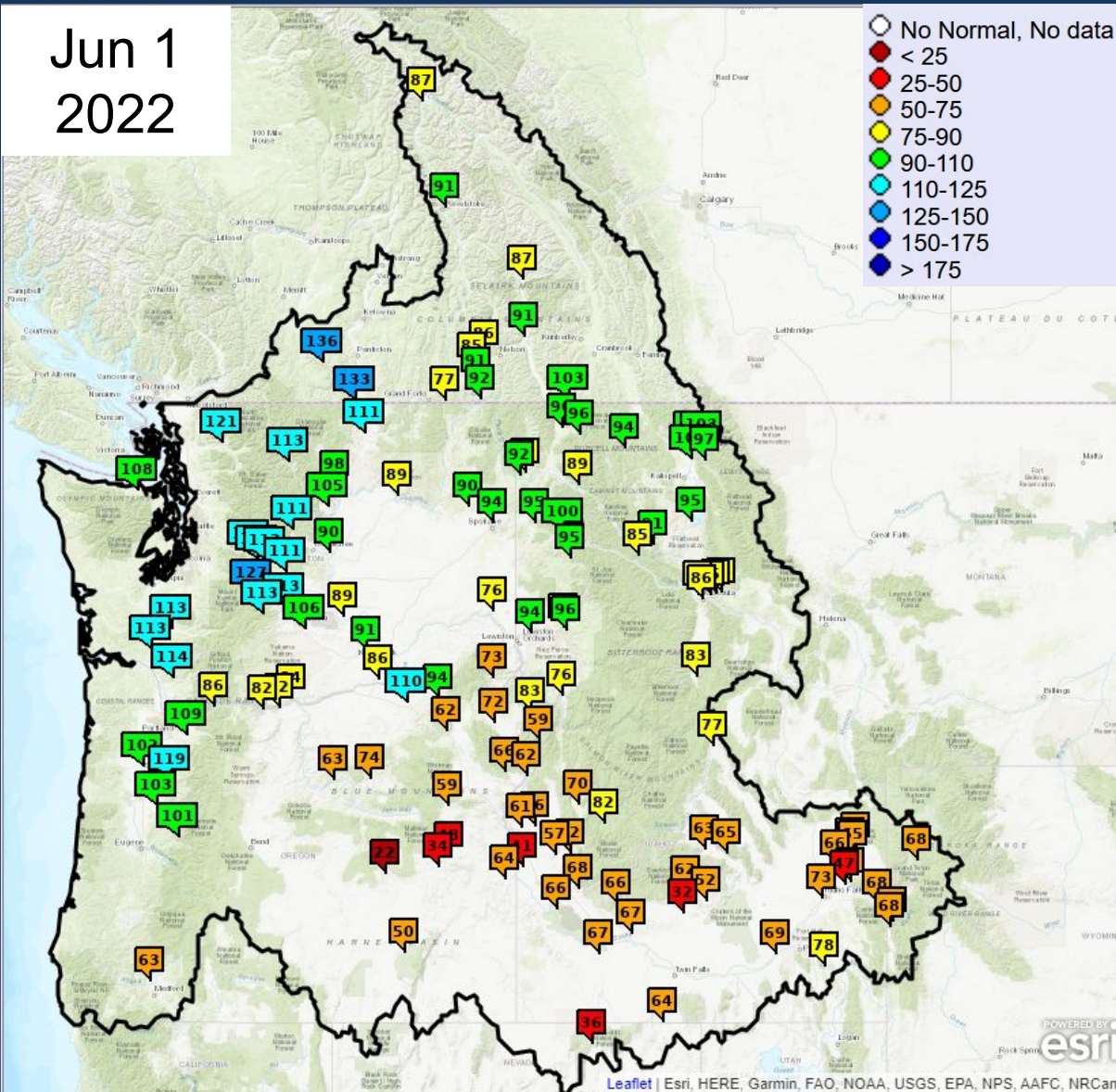


Snow data from NRCS, BC Hydro, and Alberta EP.



# Year to Date Adjusted Runoff - East

Jun 1  
2022



% Normal Runoff Oct 1 - Jun 1

## Upper Columbia Basin

Δ since May 4

Mica	87	-13
Duncan	87	-11
Queens Bay	91	-14
Libby	94	-15
Hungry Horse	97	-7
Grand Coulee	89	-7

## Snake River Basin

American Falls	69	-9
Lucky Peak	68	5
Dworshak	88	9
Lower Granite	76	6

## Lower Columbia Basin

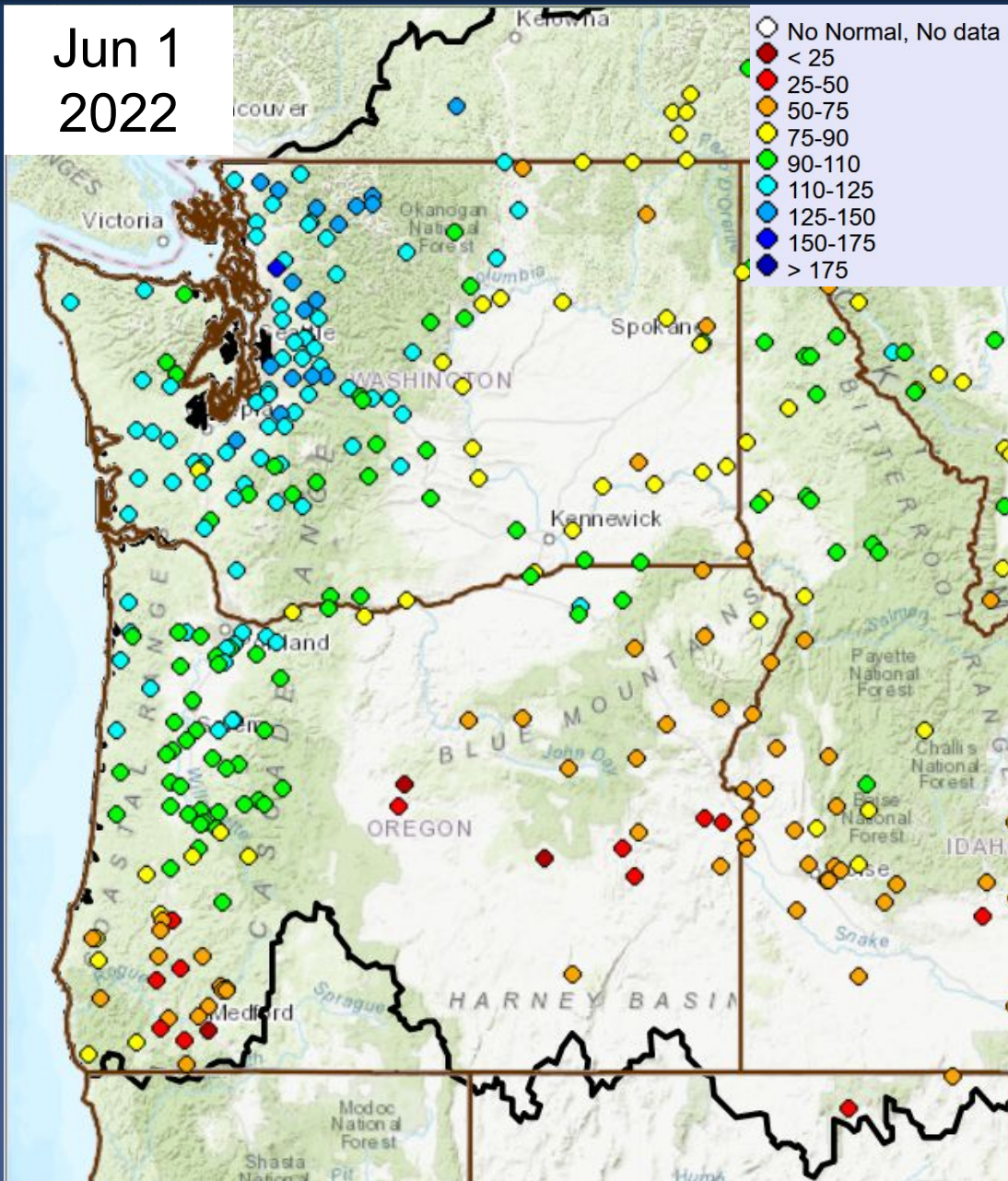
The Dalles	82	-1
------------	----	----





# Year to Date Adjusted Natural Runoff - OR, WA

Jun 1  
2022



## % Normal Runoff Oct 1 - Jun 1

### Washington

### Δ since May 4

Skagit nr Mt Vernon	124	-6
Dungeness nr Sequim	108	-6
Chehalis at Porter	121	2
Okanogan at Malott	114	-26
Methow nr Pateros	98	-21
Yakima at Parker	103	0
Walla Walla nr Touchet	95	19

### Oregon

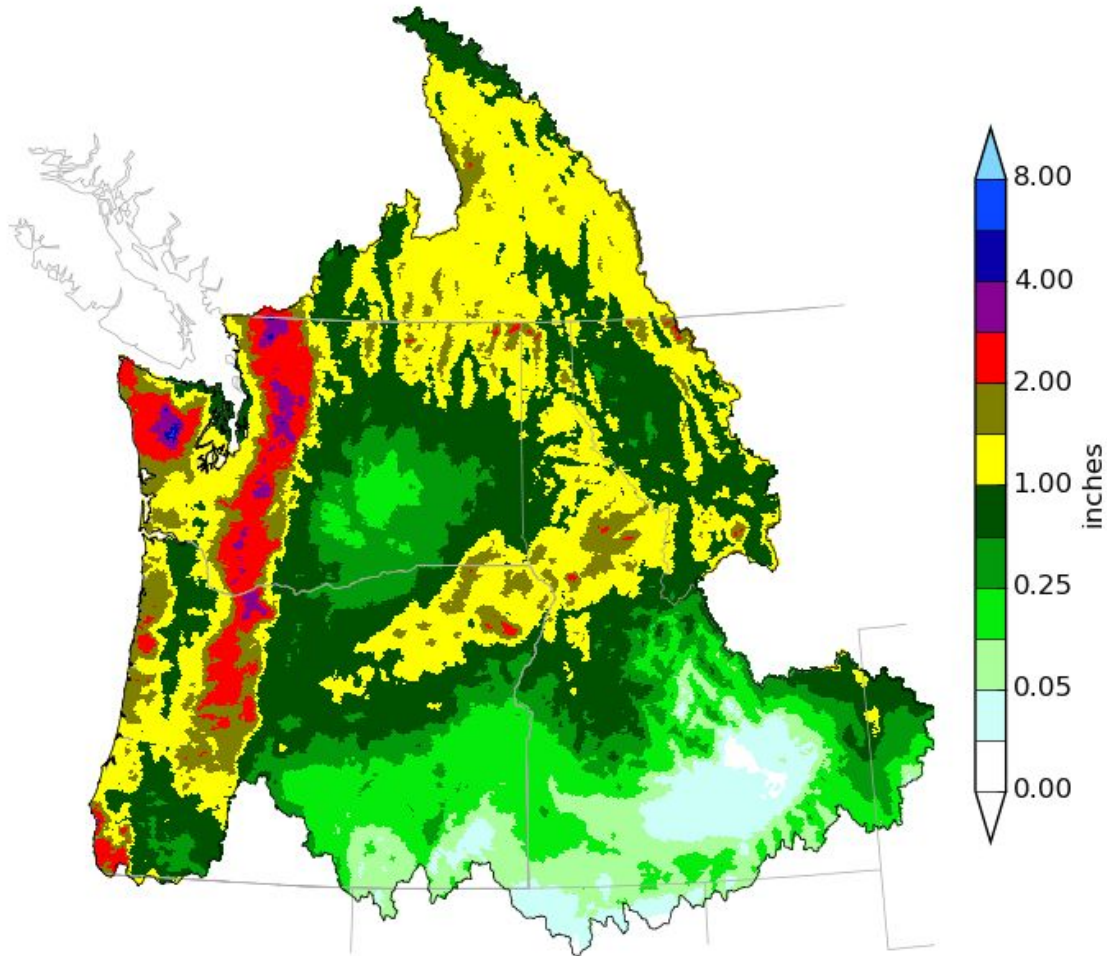
Willamette at Salem	92	11
Rogue at Raygold	63	7
Umatilla at Pendleton	110	19
Grande Ronde at Troy	73	9
Owyhee Dam	61	-5



# Precipitation Forecast (June 2 - 11)



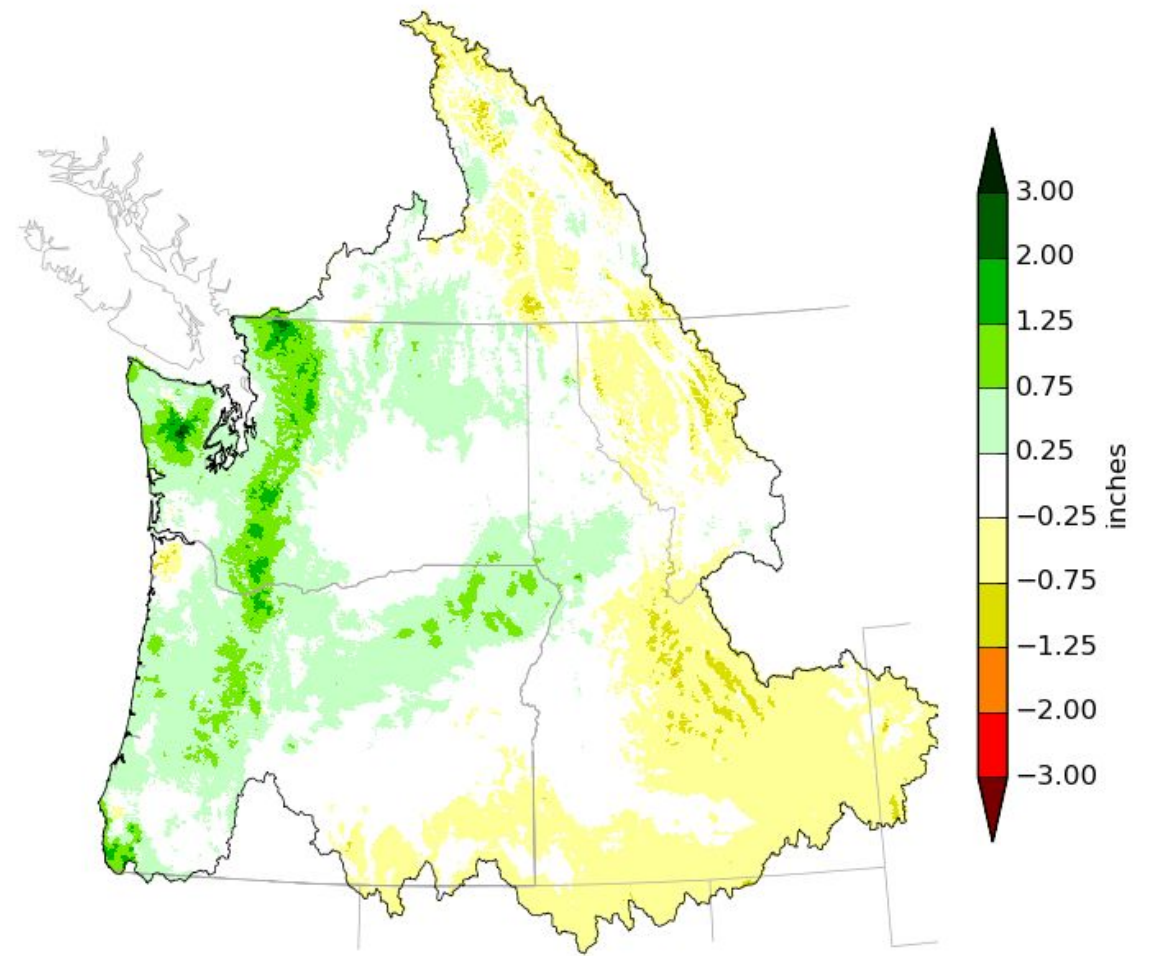
Northwest River Forecast Center  
10 Day QPF, Ending 12Z, 06/11/22



Creation Time: Wed Jun 1 15:06:31 UTC 2022



Northwest River Forecast Center  
10 Day QPF (Deviation from Climatology), Ending 12Z, 06/11/22

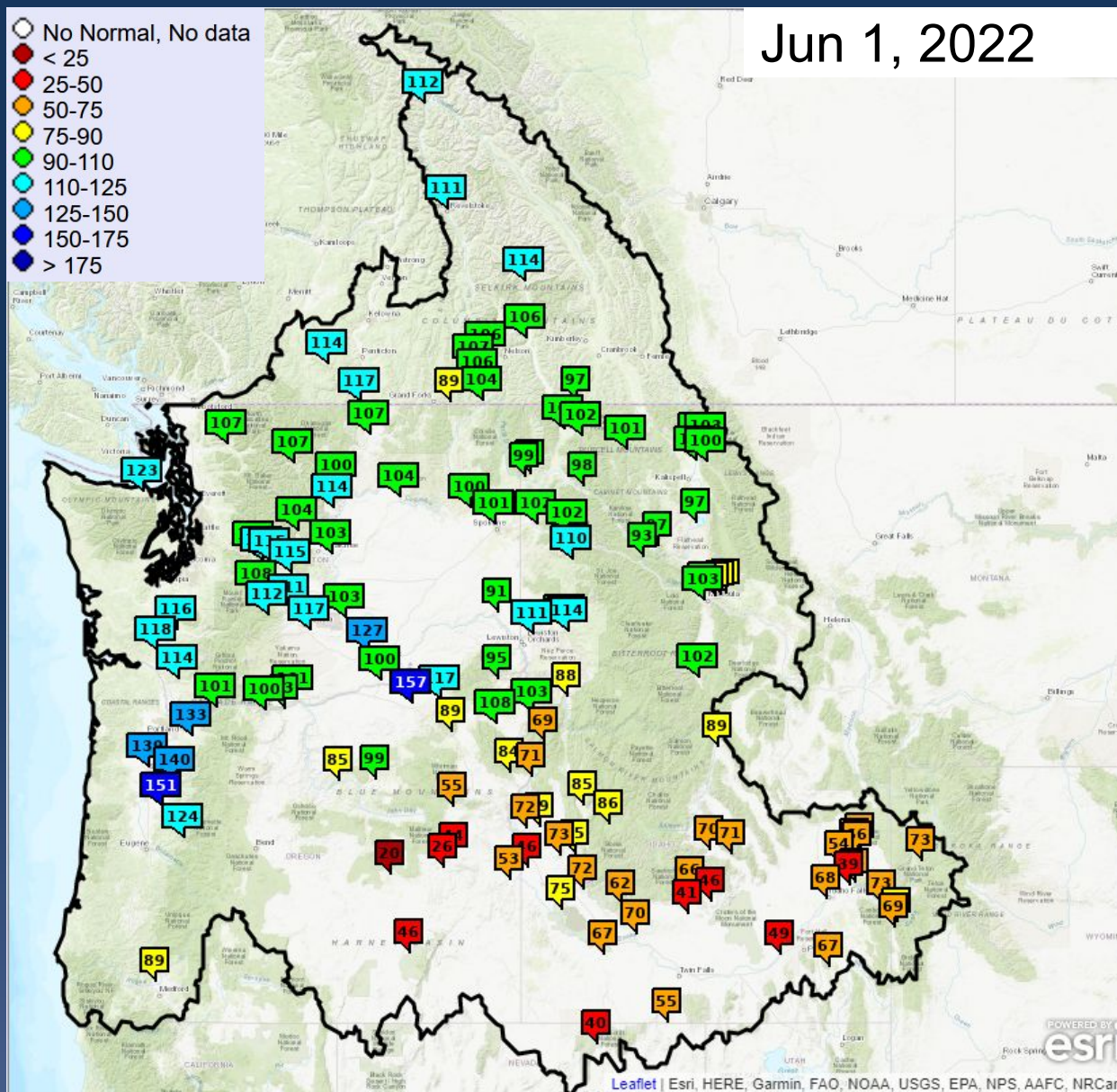


Creation Time: Wed Jun 1 15:08:03 UTC 2022





# ESP10 Water Supply Forecasts - East



## % Normal Apr-Sep Volume

### Upper Columbia Basin

### Δ since May 4

Mica	112	1
Duncan	114	-7
Queens Bay	106	-1
Libby	101	1
Hungry Horse	100	10
Grand Coulee	104	4

### Snake River Basin

American Falls	49	-5
Lucky Peak	72	-3
Dworshak	104	11
Lower Granite	91	9

### Lower Columbia Basin

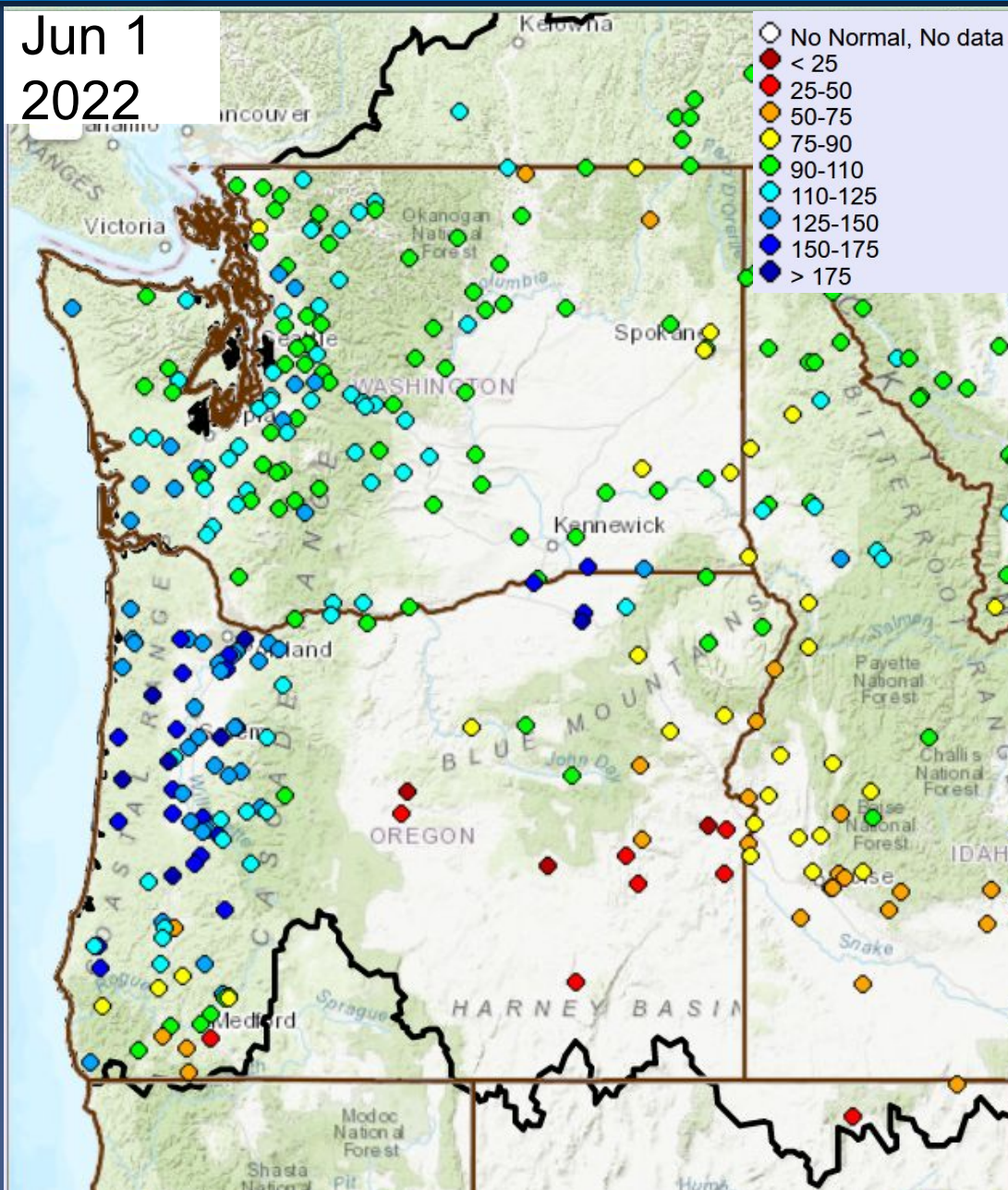
The Dalles	100	6
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# ESP10 Natural Forecasts - OR, WA

Jun 1  
2022



## % Normal Apr -Sep Volume

### Washington

### Δ since May 4

Skagit nr Mt Vernon	109	12
Dungeness nr Sequim	123	21
Chehalis at Porter	127	18
Okanogan at Malott	106	9
Methow nr Pateros	100	6
Yakima at Parker	109	9
Walla Walla nr Touchet	156	46

### Oregon

Willamette at Salem	127	24
Rogue at Raygold	90	13
Umatilla at Pendleton	154	52
Grande Ronde R at Troy	95	19
Owyhee Dam	48	-1





# ESP10 Apr-Sep Water Supply Forecasts

## COLUMBIA - GRAND COULEE DAM (GCDW1) Forecasts for Water Year 2022

### Official Water Supply

ESP with 10 Days QPF Ensemble: 2022-06-01 Issued: 2022-06-01

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	61303	63747	104	67016	61483
APR-JUL	50582	52117	99	55375	52774
APR-AUG	57315	59245	102	62822	58186
JAN-SEP	70804	73248	104	76517	70457
JAN-JUL	60082	61618	100	64876	61749
OCT-SEP	81647	84092	107	87360	78842

### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2022-06-01 Issued: 2022-06-01

APR-SEP	62419	65039	106	69393	61483
APR-JUL	51587	53888	102	57193	52774
APR-AUG	58656	60717	104	65129	58186
JAN-SEP	71920	74540	106	78893	70457
JAN-JUL	61087	63389	103	66694	61749
OCT-SEP	82763	85384	108	89737	78842

### Reference

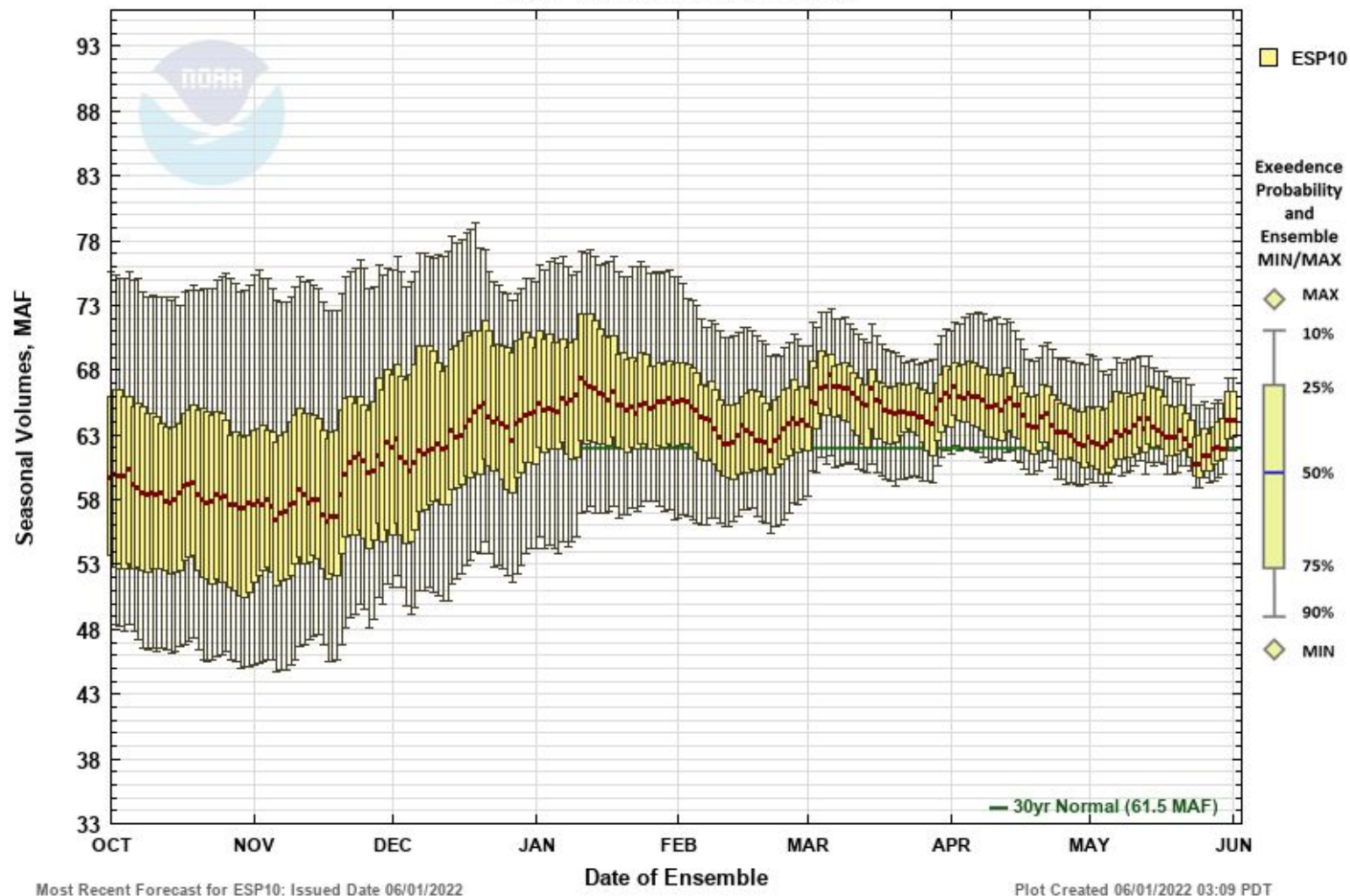
ESP with 0 Days QPF Ensemble: 2022-06-01 Issued: 2022-06-01

APR-SEP	61671	63865	104	68521	61483
APR-JUL	50804	52753	100	56108	52774
APR-AUG	57790	59651	103	64295	58186
JAN-SEP	71172	73366	104	78022	70457
JAN-JUL	60305	62254	101	65609	61749
OCT-SEP	82015	84210	107	88865	78842

## Water Supply Forecasts

### COLUMBIA - GRAND COULEE DAM

Period APR to SEP -- Water Year 2022



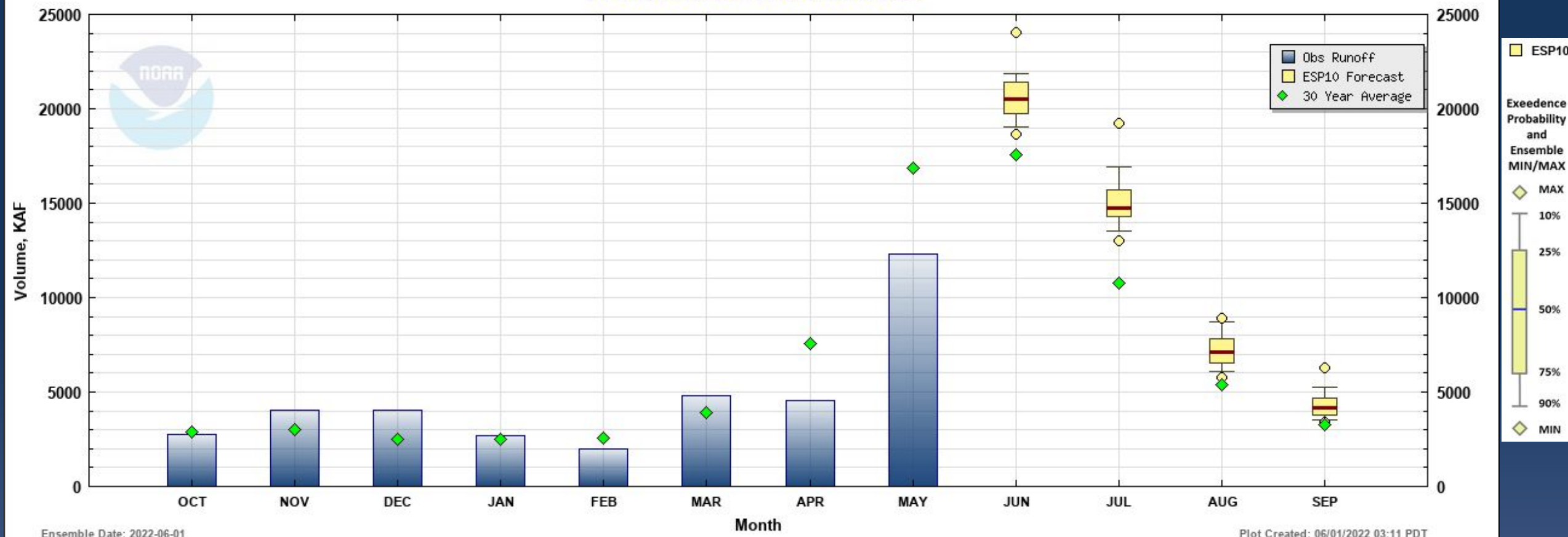
☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days ☐ Show Min/Max Ensemble Volume ☐ Show Tooltips Help





# ESP10 Water Supply Volume Monthly Forecasts

Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2022  
(GCDW1) COLUMBIA - GRAND COULEE DAM



Ensemble Date: 2022-06-01

Plot Created: 06/01/2022 03:11 PDT





# ESP10 Apr-Sep Water Supply Forecasts

## SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2022

### Official Water Supply

ESP with 10 Days QPF Ensemble: 2022-06-01 Issued: 2022-06-01

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	19758	20255	91	21213	22232
APR-JUL	17359	17813	89	18646	19946
APR-AUG	18592	19021	90	19908	21121
JAN-SEP	25245	25742	87	26700	29736
JAN-JUL	22846	23300	85	24133	27450
OCT-SEP	29150	29646	86	30605	34287

### Experimental Water Supply

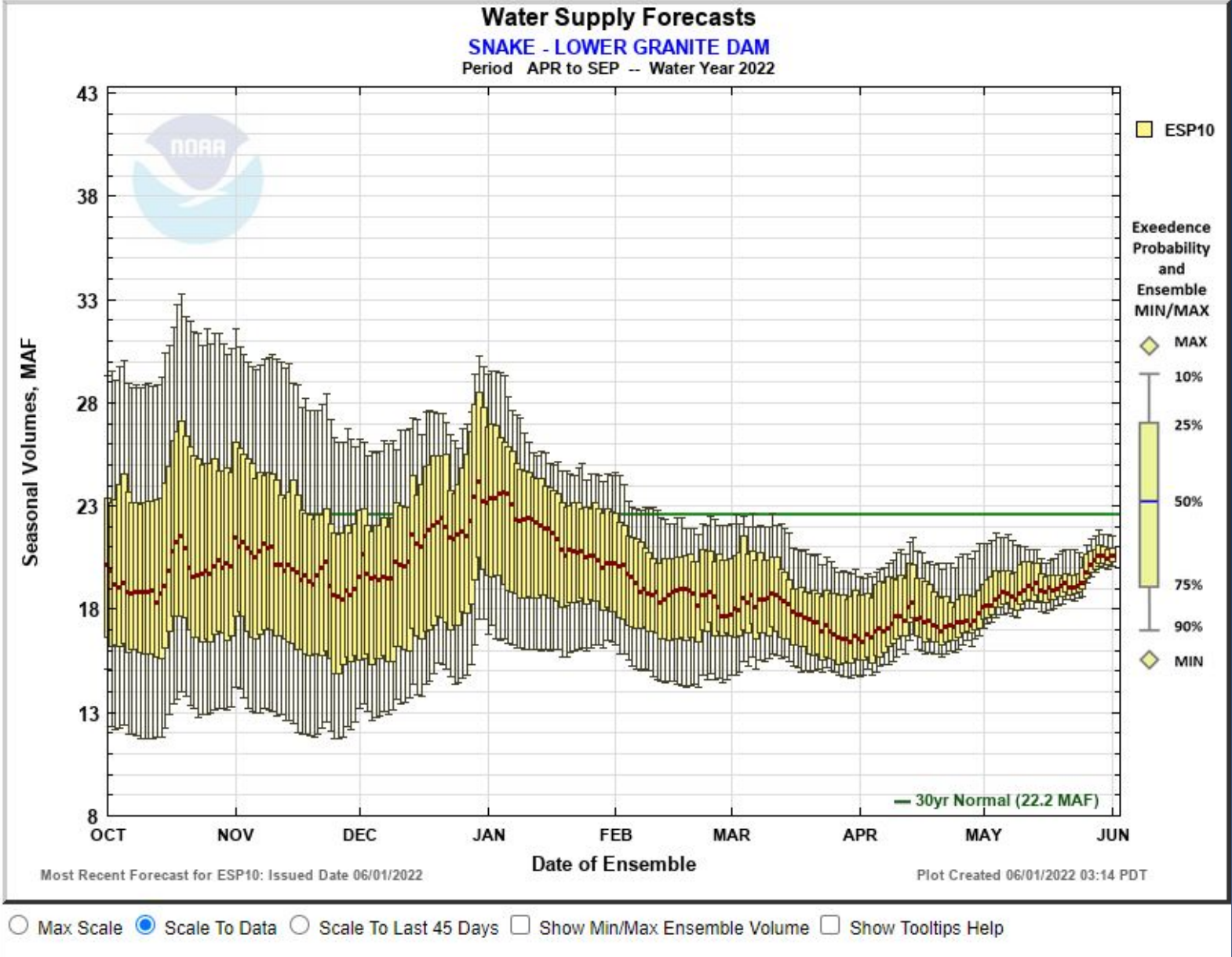
HEFS with 15 days EQPF Ensemble: 2022-06-01 Issued: 2022-06-01

APR-SEP	19476	20245	91	21822	22232
APR-JUL	17210	17839	89	19302	19946
APR-AUG	18351	19044	90	20624	21121
JAN-SEP	24962	25732	87	27309	29736
JAN-JUL	22696	23326	85	24789	27450
OCT-SEP	28867	29636	86	31214	34287

### Reference

ESP with 0 Days QPF Ensemble: 2022-06-01 Issued: 2022-06-01

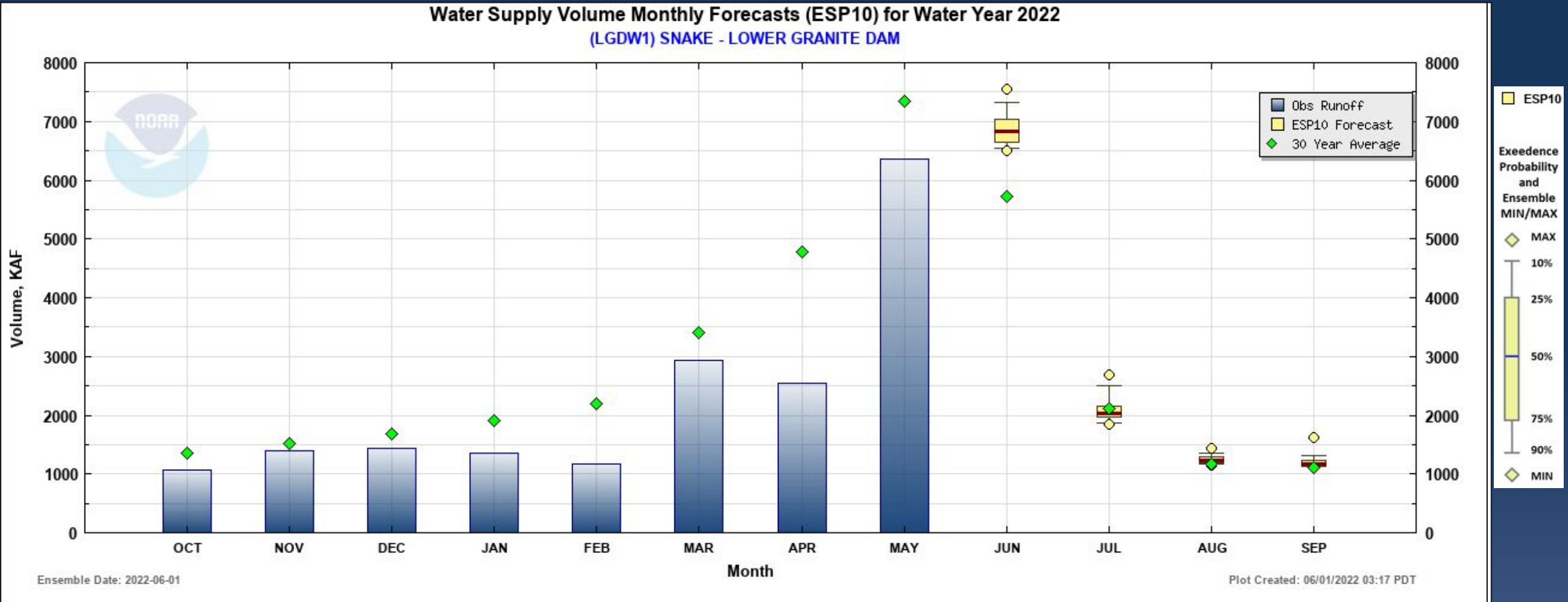
APR-SEP	19535	20244	91	22215	22232
APR-JUL	17222	17728	89	19644	19946
APR-AUG	18408	18991	90	21001	21121
JAN-SEP	25021	25730	87	27701	29736
JAN-JUL	22708	23215	85	25131	27450
OCT-SEP	28926	29635	86	31606	34287







# ESP10 Water Supply Volume Monthly Forecasts







# ESP10 Apr-Sep Water Supply Forecasts

## COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2022

### Official Water Supply

ESP with 10 Days QPF Ensemble: 2022-06-01 Issued: 2022-06-01

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	91184	94168	100	99112	94166
APR-JUL	76822	79137	97	83155	81933
APR-AUG	85808	87944	99	92760	89196
JAN-SEP	109596	112581	97	117525	115946
JAN-JUL	95234	97549	94	101567	103714
OCT-SEP	127661	130646	99	135590	132314

### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2022-06-01 Issued: 2022-06-01

APR-SEP	92439	95521	101	101335	94166
APR-JUL	77534	80628	98	85113	81933
APR-AUG	86722	89624	100	94895	89196
JAN-SEP	110851	113934	98	119747	115946
JAN-JUL	95946	99040	95	103525	103714
OCT-SEP	128916	131999	100	137812	132314

### Reference

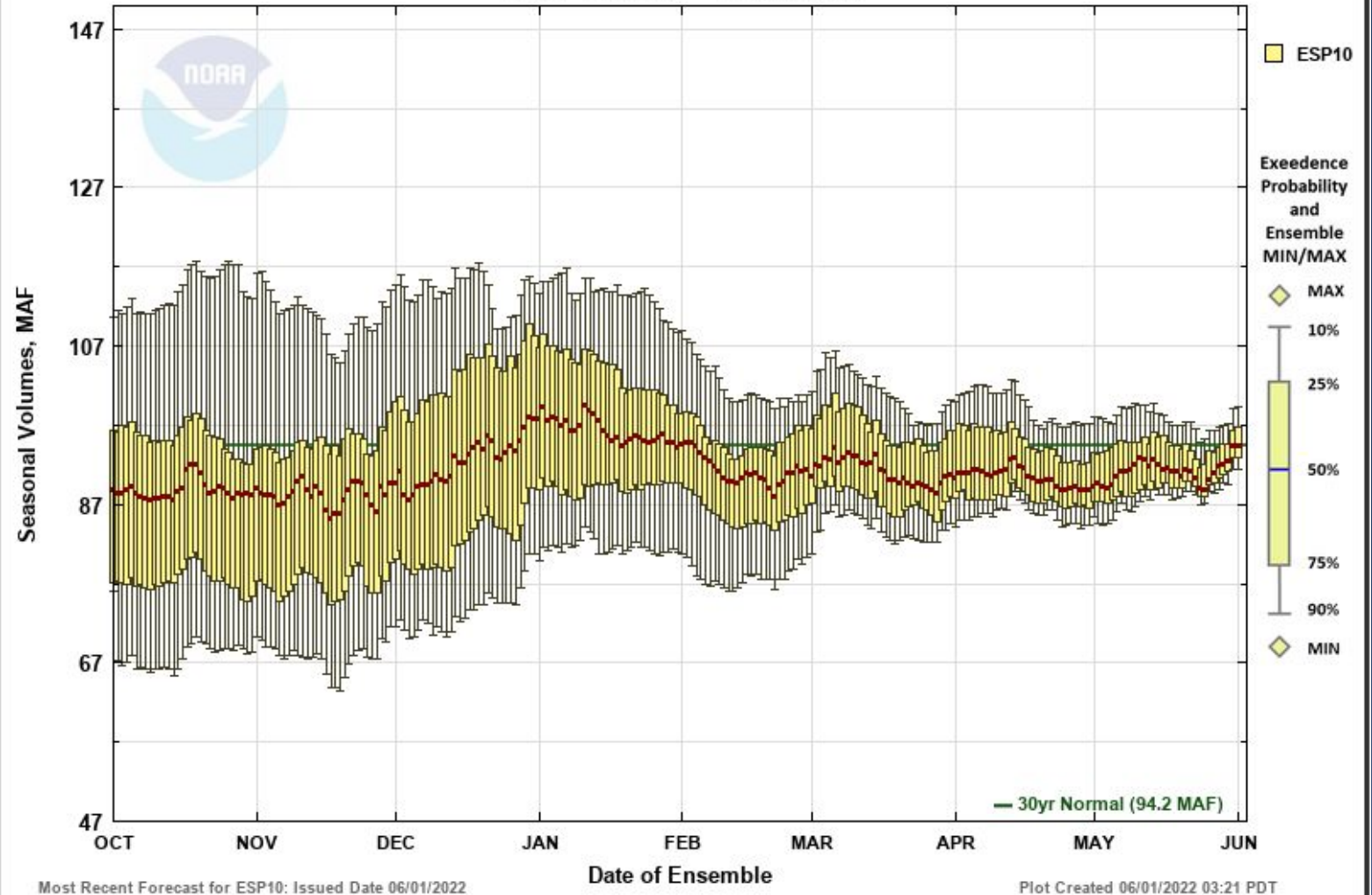
ESP with 0 Days QPF Ensemble: 2022-06-01 Issued: 2022-06-01

APR-SEP	91681	94424	100	100715	94166
APR-JUL	76571	79219	97	83757	81933
APR-AUG	86139	88489	99	94495	89196
JAN-SEP	110094	112836	97	119127	115946
JAN-JUL	94983	97631	94	102170	103714
OCT-SEP	128159	130901	99	137192	132314

## Water Supply Forecasts

COLUMBIA - THE DALLES DAM

Period APR to SEP -- Water Year 2022

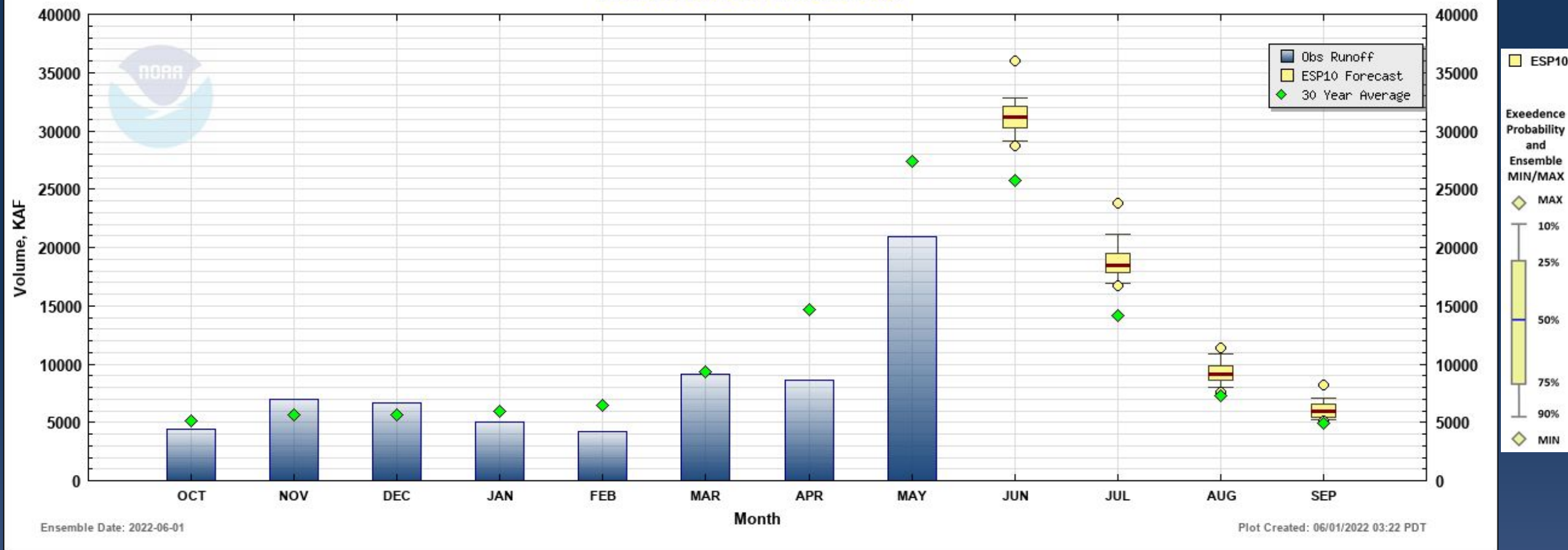






# ESP10 Water Supply Volume Monthly Forecasts

Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2022  
(TDAO3) COLUMBIA - THE DALLES DAM







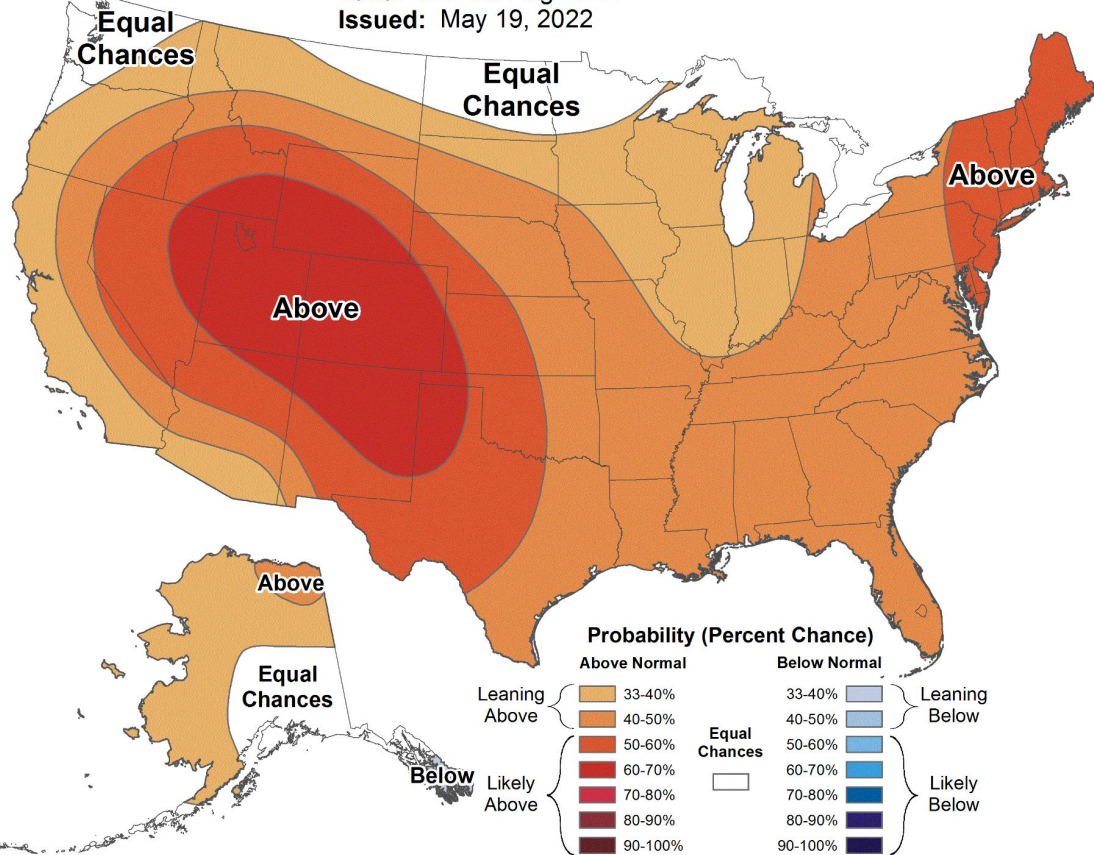
# CPC Three-Month Outlook



## Seasonal Temperature Outlook



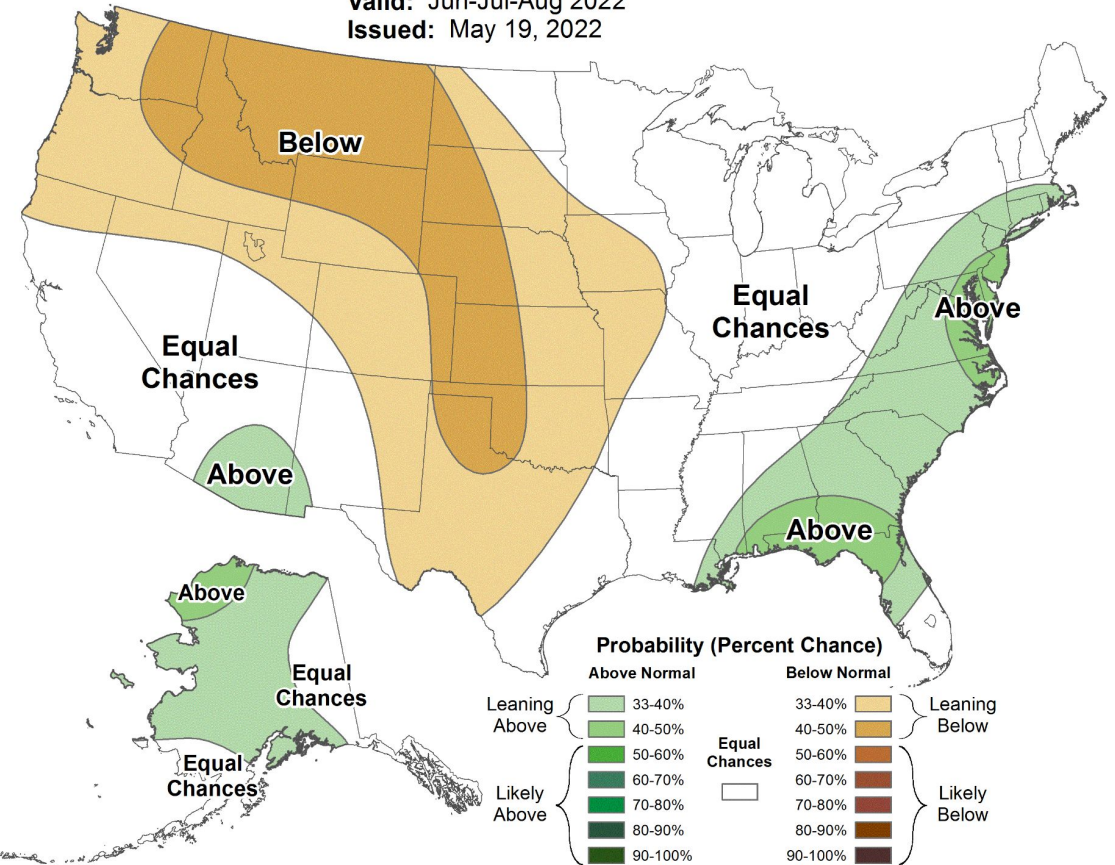
Valid: Jun-Jul-Aug 2022  
Issued: May 19, 2022



## Seasonal Precipitation Outlook



Valid: Jun-Jul-Aug 2022  
Issued: May 19, 2022







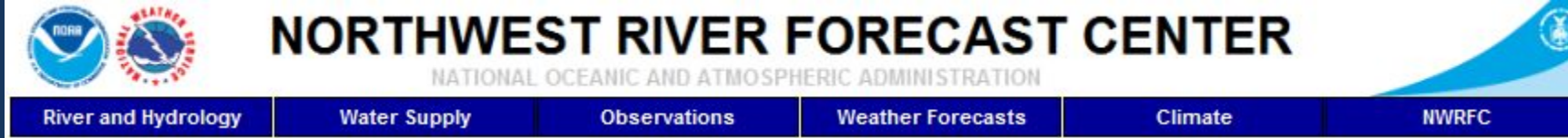
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# Questions?

In order to ask questions using your phone, you will need to enter the **AUDIO PIN** followed by the **#** sign using your phone keypad. The **AUDIO PIN** was provided when you logged into the webinar. If you need to enter the PIN after you are connected, try **#PIN#**

You will be muted until the presenter unmutes you. If you have a question, use the 'Raise Hand' function to let us know to unmute your phone.

NWRFC.watersupply@noaa.gov  
(503) 326-7291

