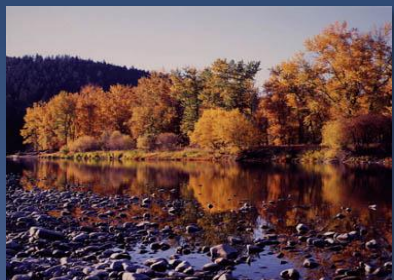




Northwest River Forecast Center



May 2022 Water Supply Briefing

Telephone Conference: (562) 247-8422

Audio Access Code: 146-348-602#

Henry Pai

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

April was cold basin-wide and wet in most of our domain other than the northeast.

Snowpack accumulated and melt was delayed later than normal.

Year to date percent of normal runoff has shown large decreases from last month.

Water supply forecasts increased in the Snake and Western Cascades but decreased in the Upper Columbia.



Water Supply Forecast Briefing

Observed Conditions:

- Temperature
- Precipitation
- Snowpack
- Runoff

Model States

Future Conditions:

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

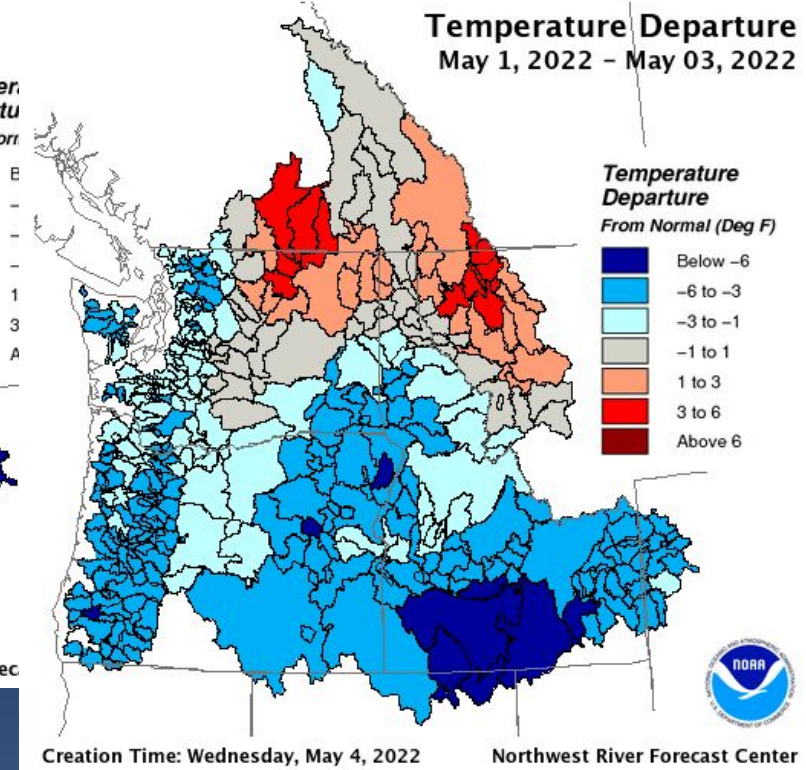
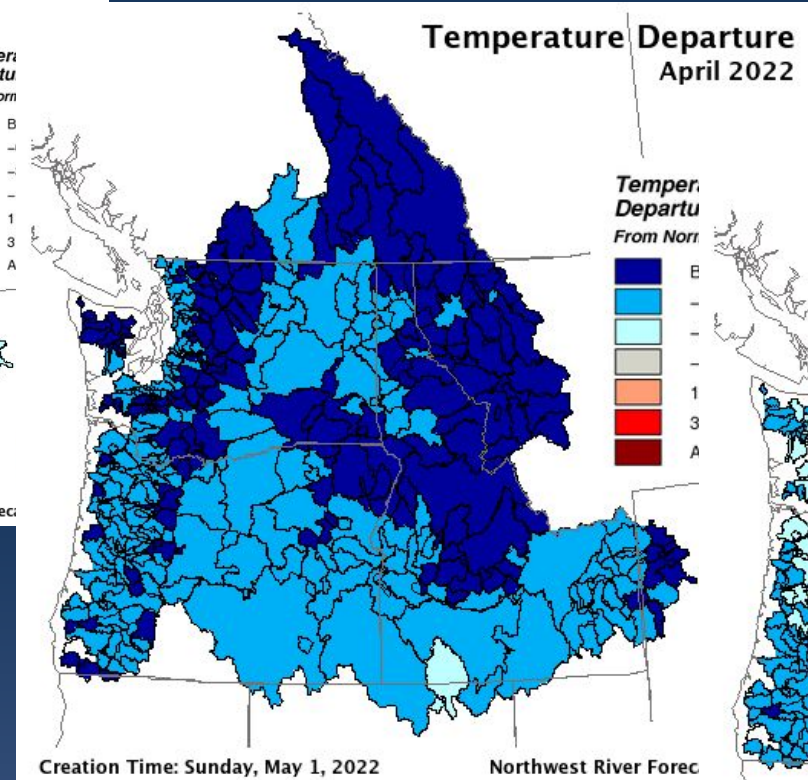
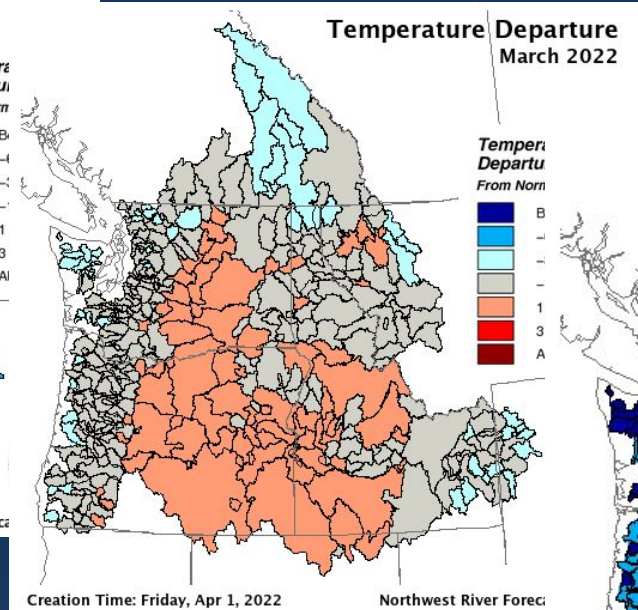
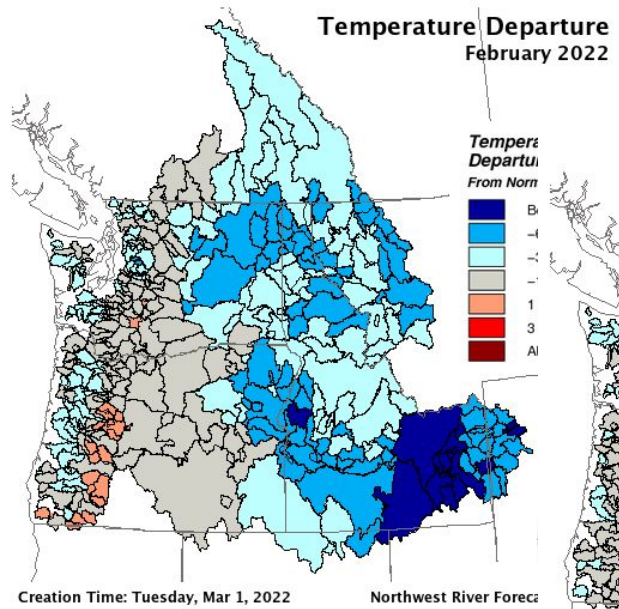
Model Forcings

Model Inputs

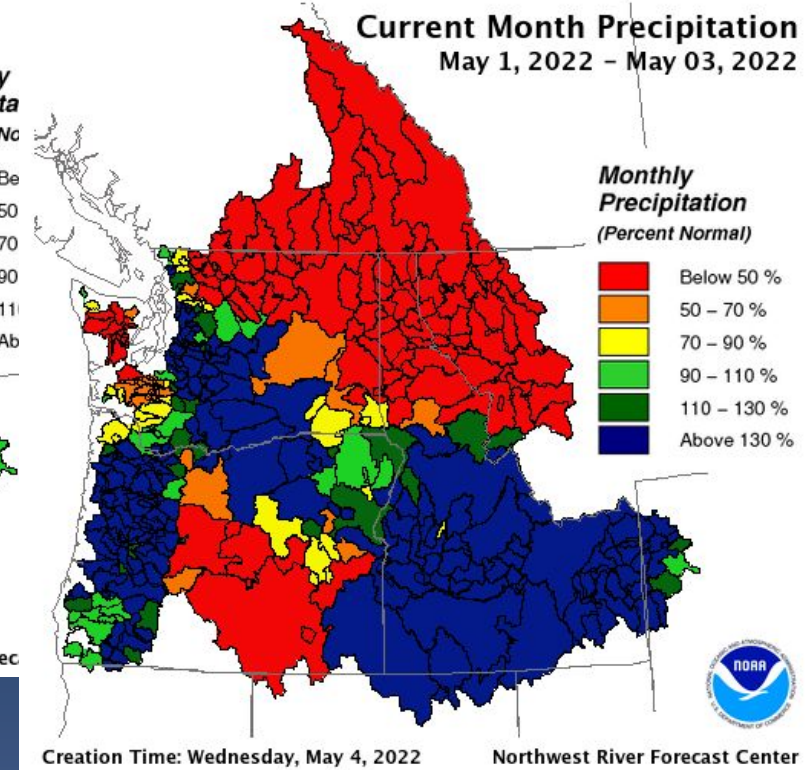
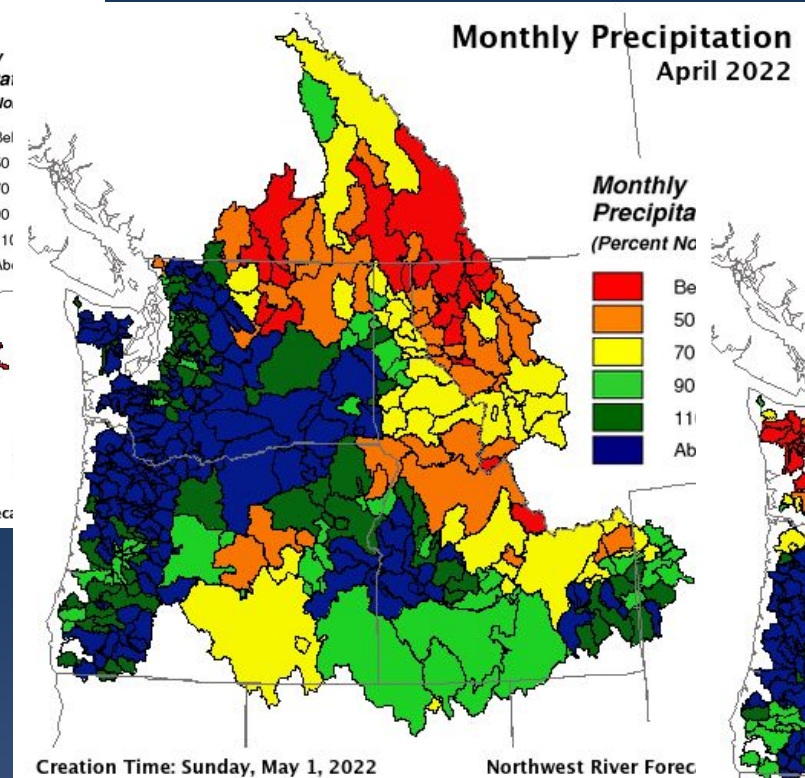
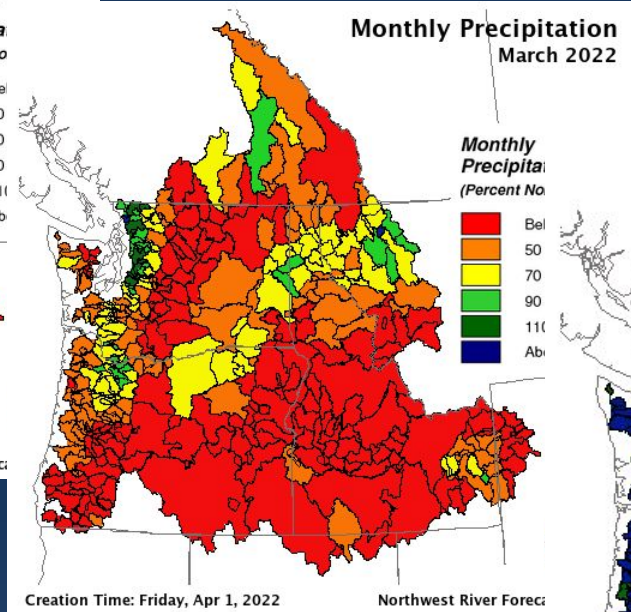
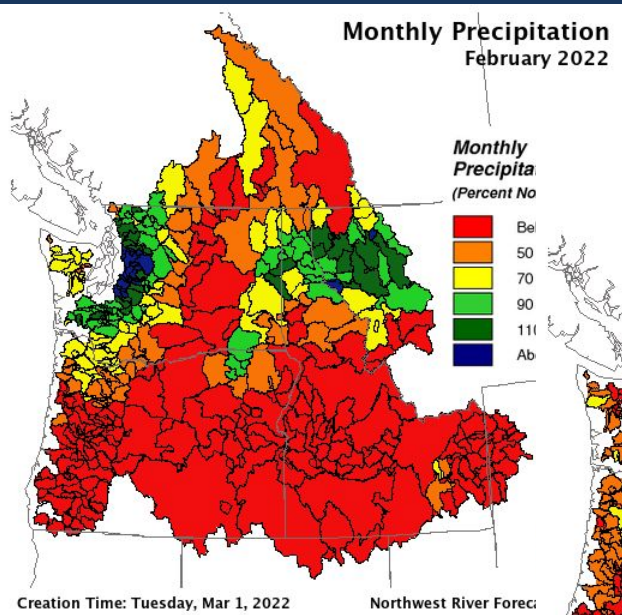
Water Supply Forecasts



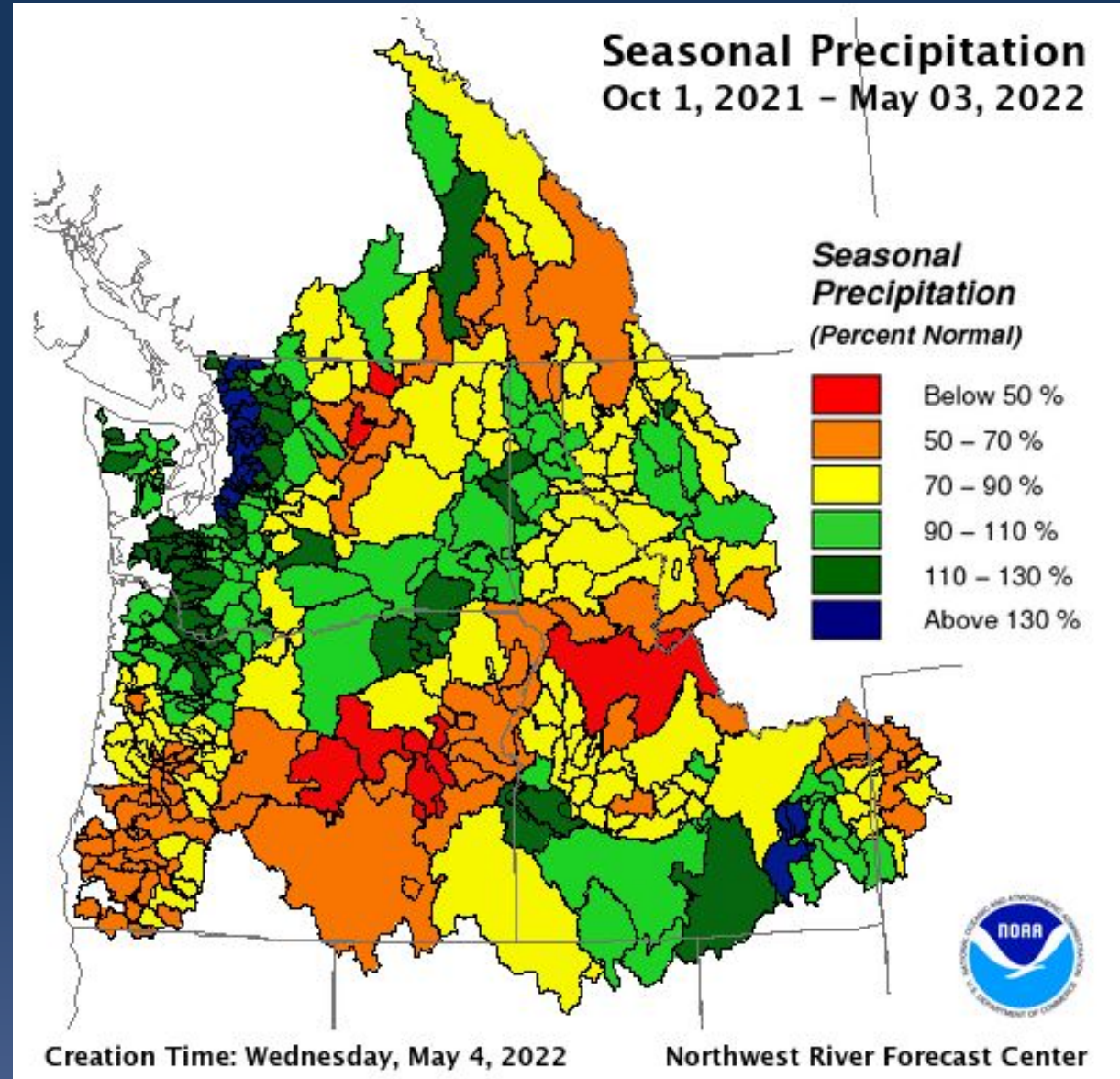
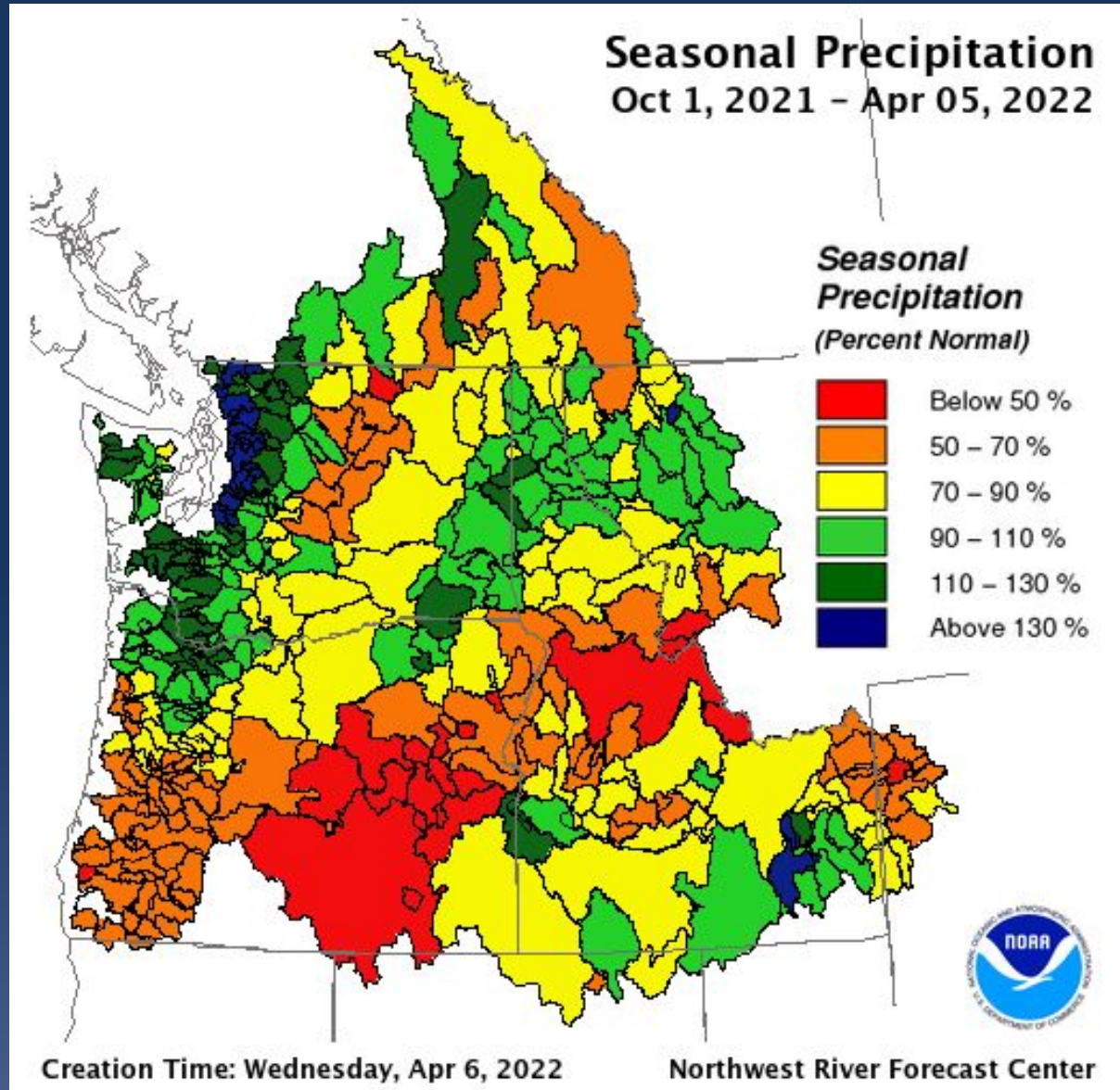
Monthly Temperature Departure



Monthly Precipitation



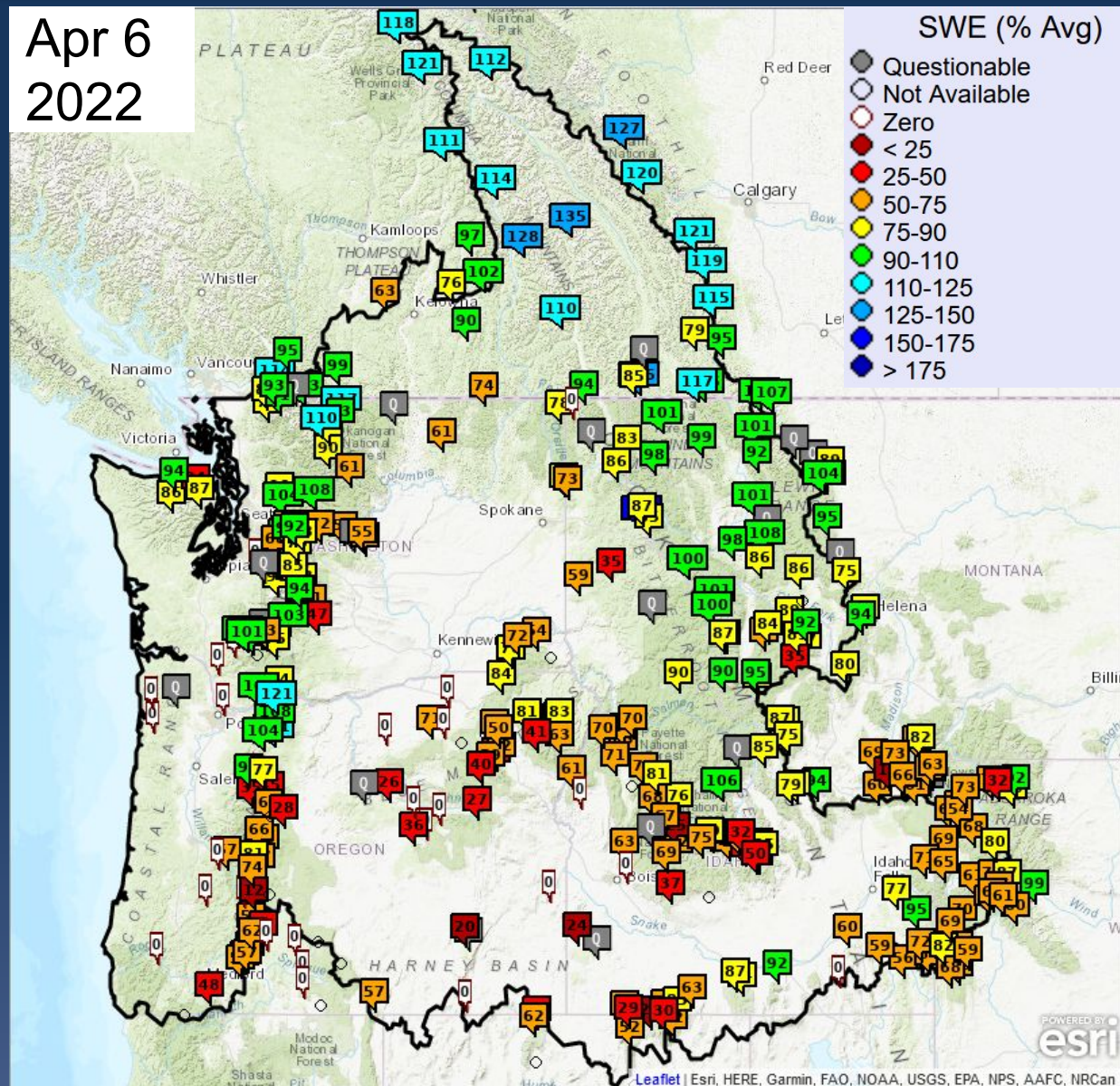
Water Year to Date Precipitation



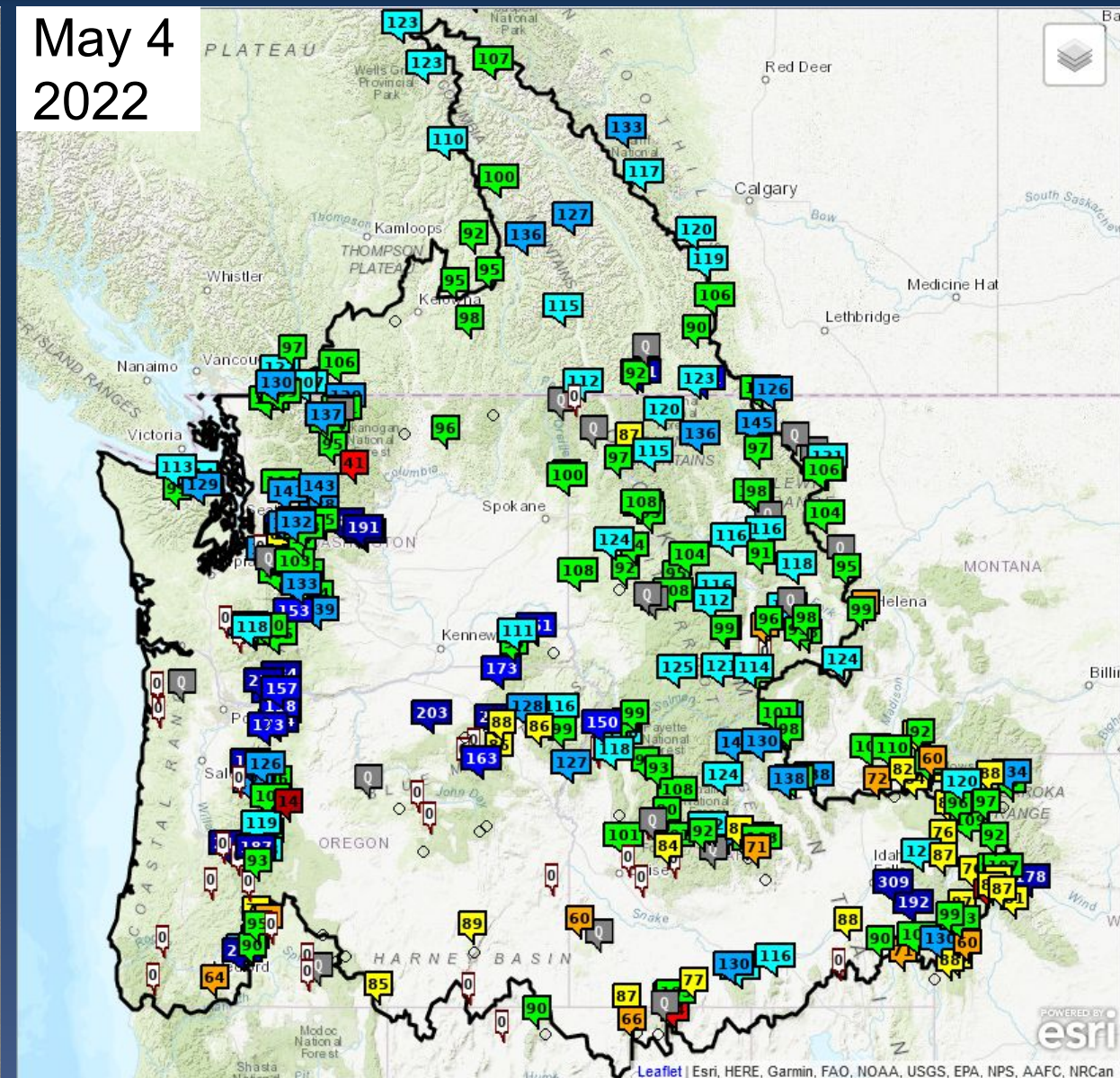


Snowpack Change

Apr 6
2022



May 4
2022



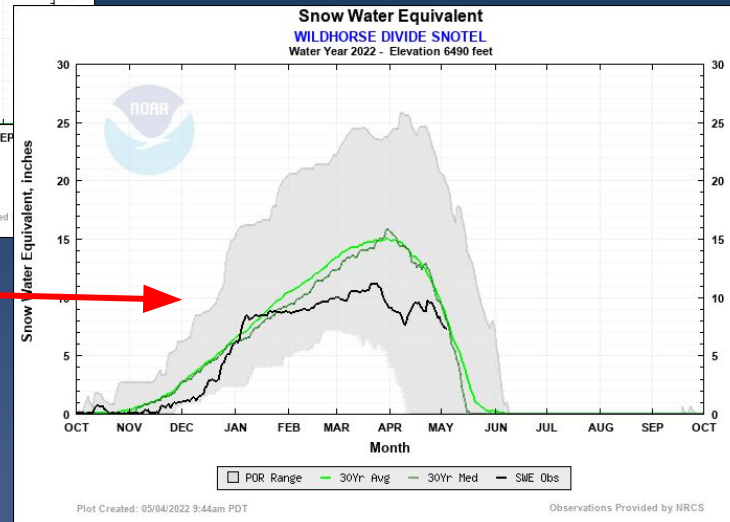
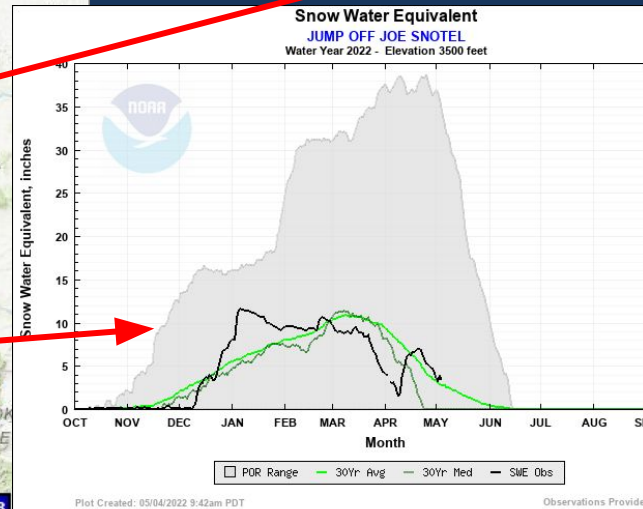
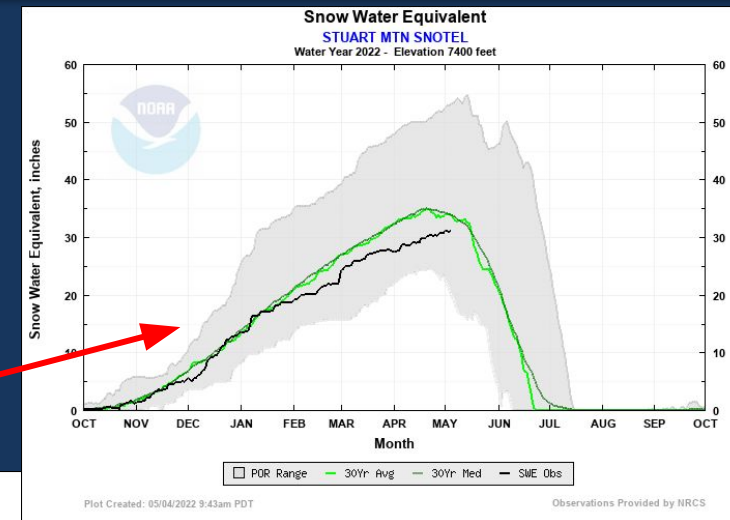
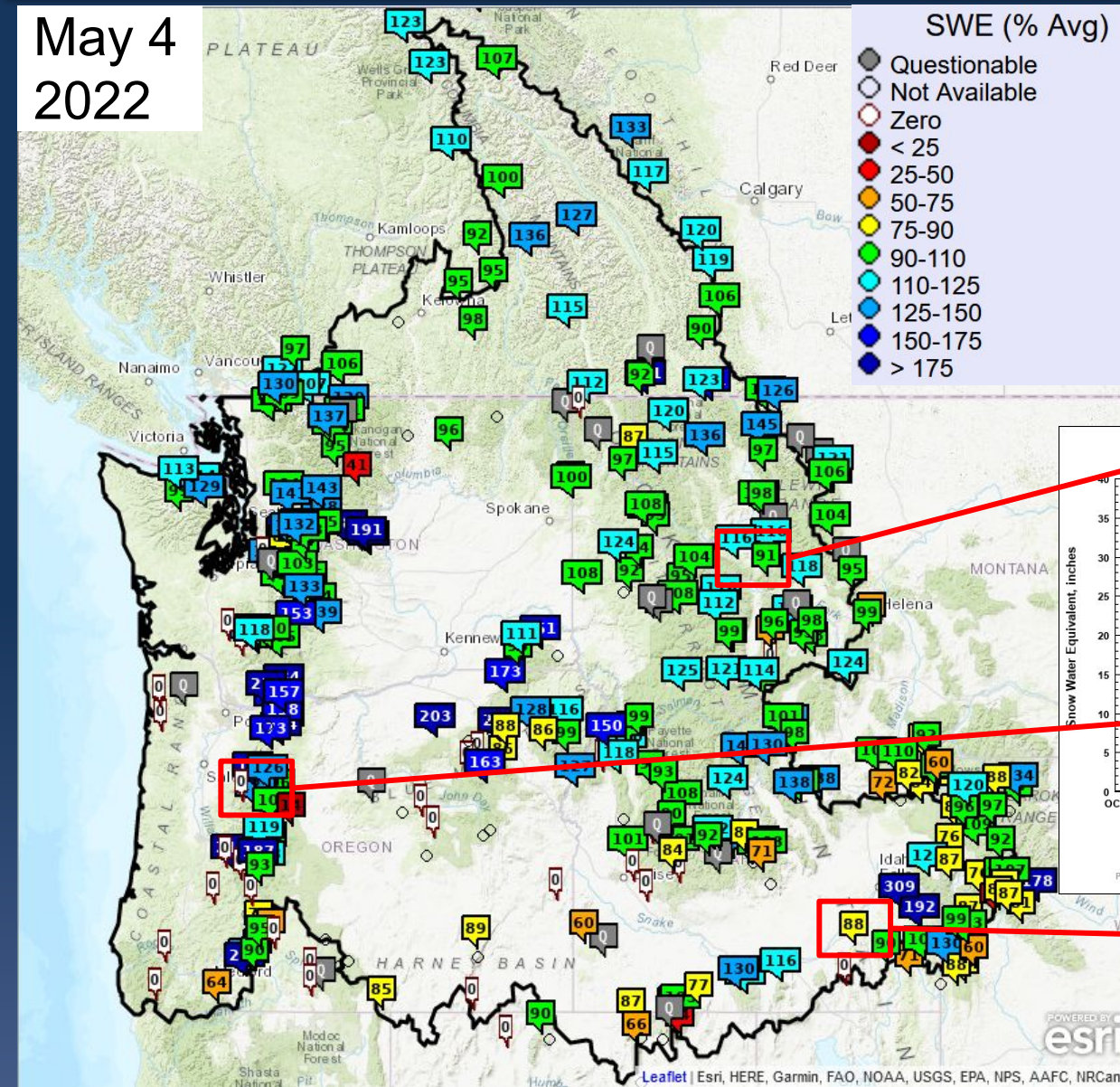
Snow data from Natural Resources Conservation Service (NRCS), BC Hydro, and Alberta Environment and Parks (EP).

Snowpack

May 4
2022

SWE (% Avg)

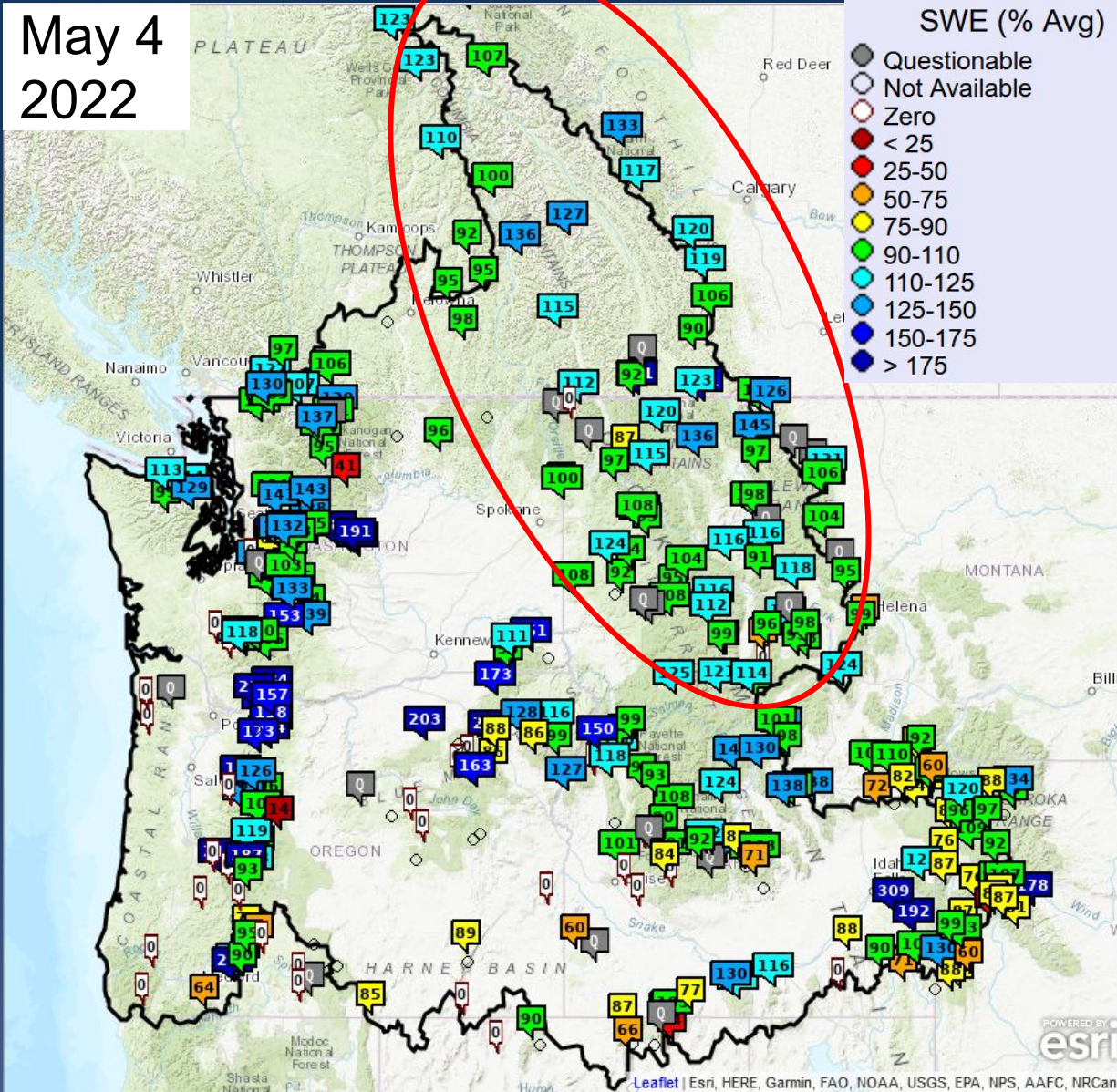
- Questionable
- Not Available
- Zero
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175



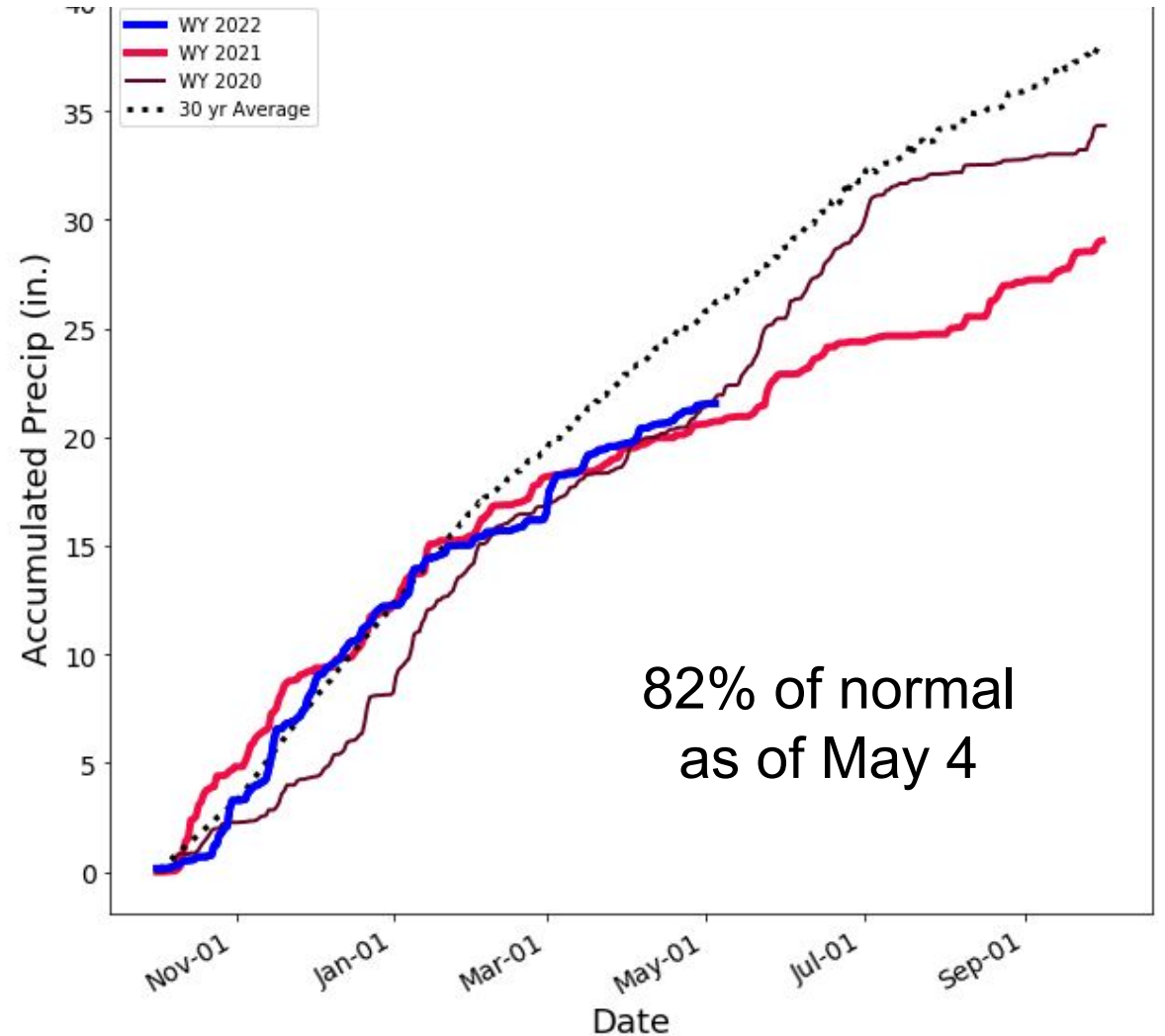
Snow data from NRCS, BC Hydro, and Alberta EP.

Snowpack and Seasonal Precipitation

May 4
2022



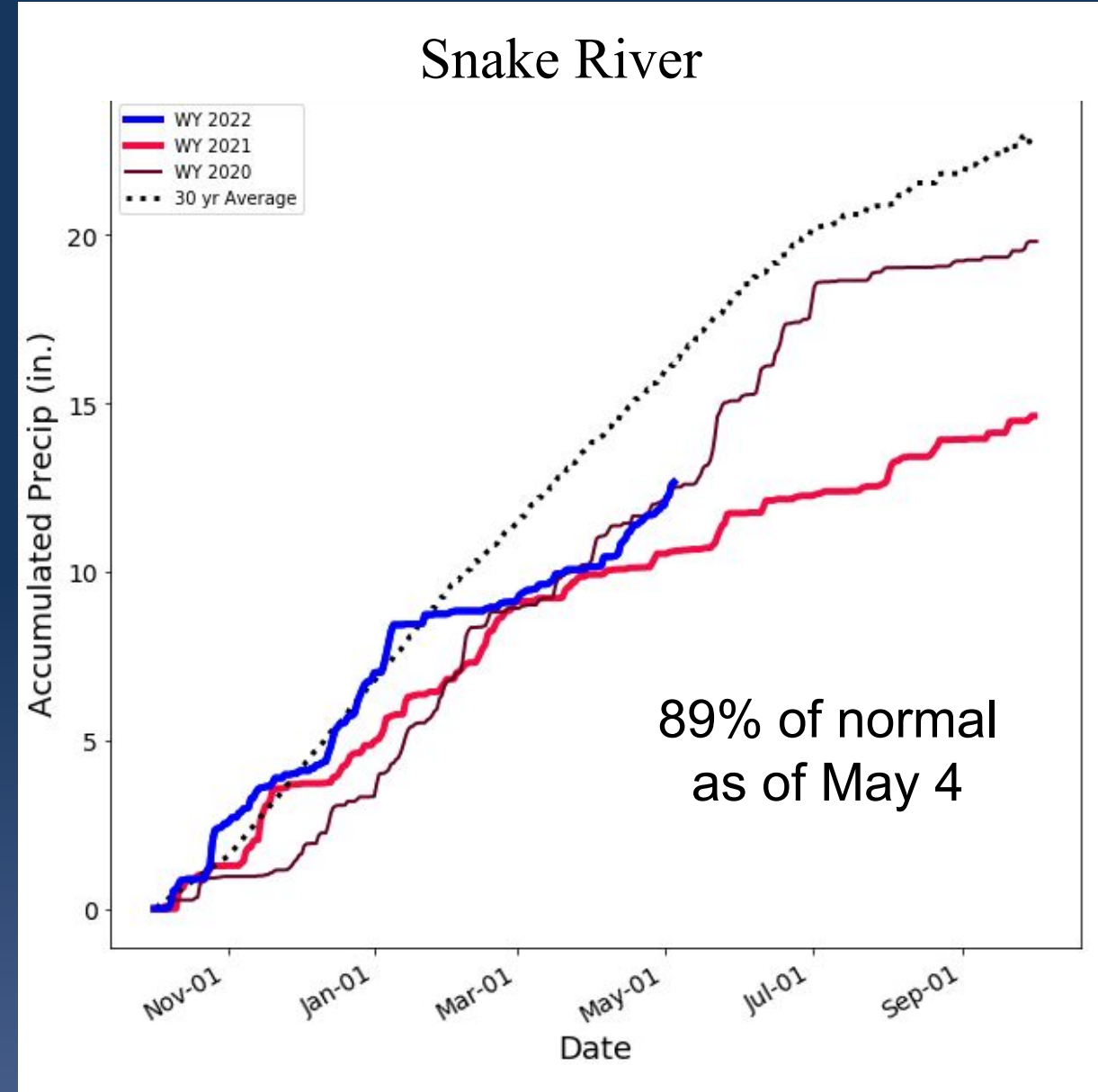
Upper Columbia



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

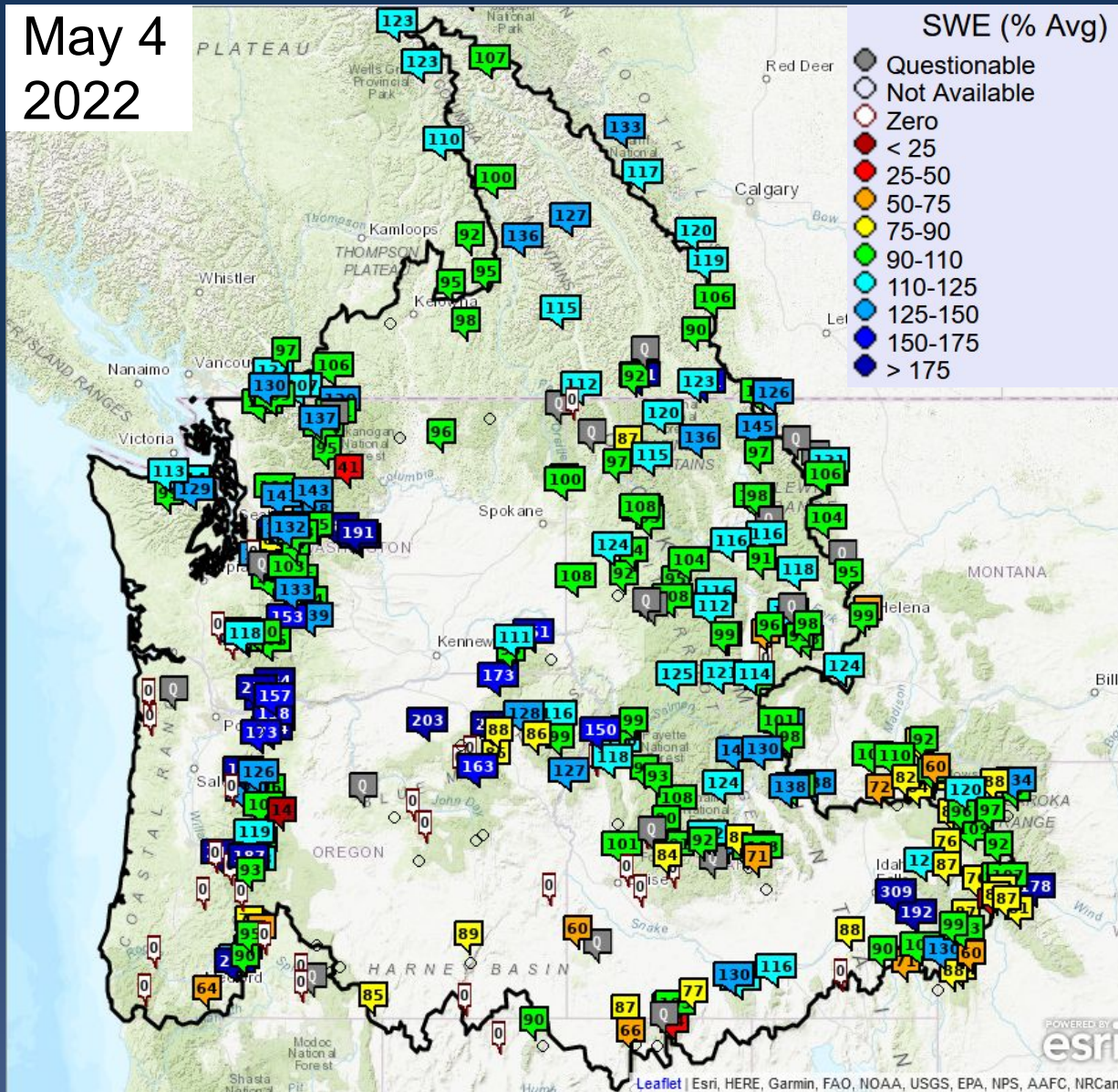


Snow data from NRCS, BC Hydro, and Alberta EP.

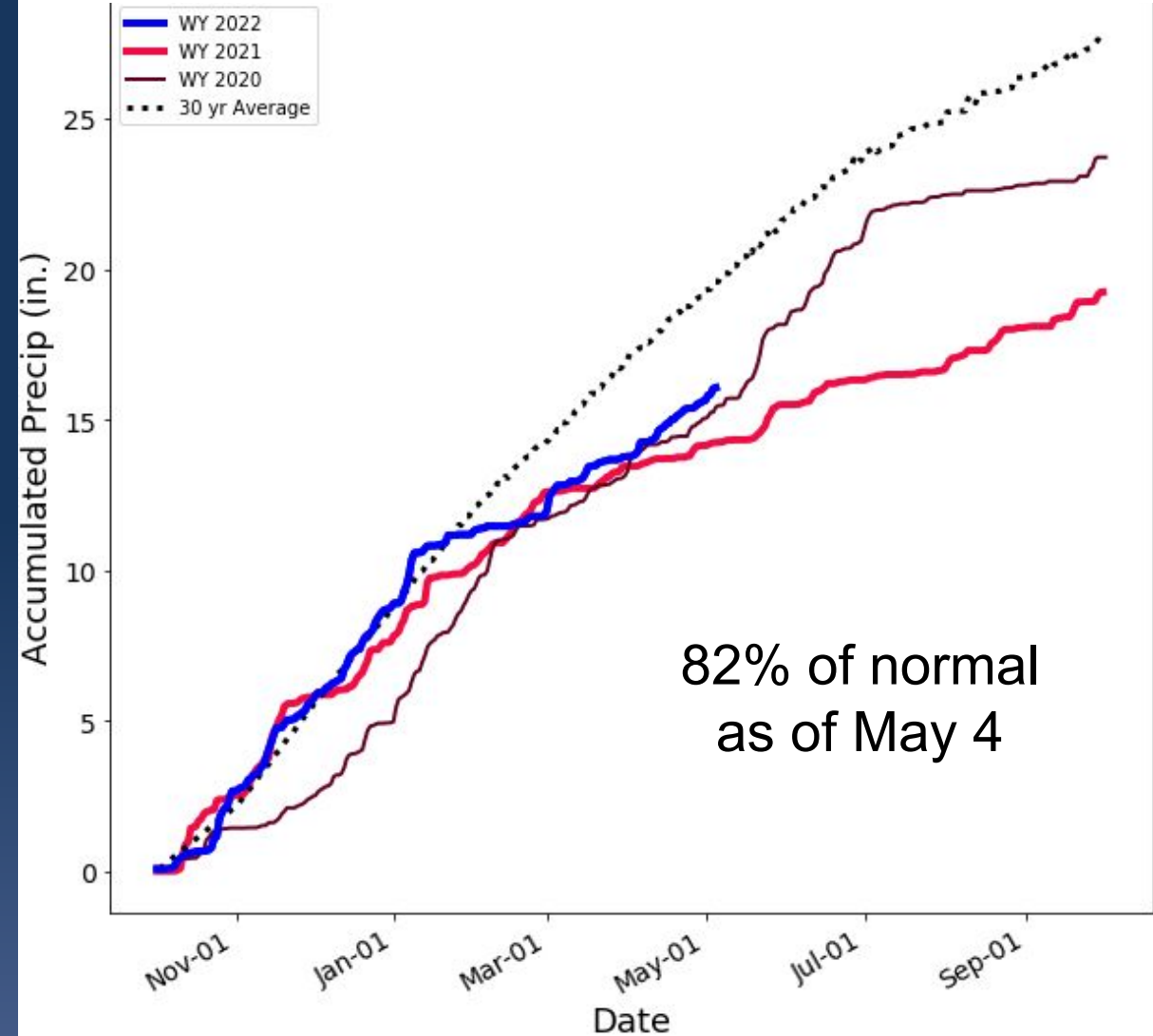


Snowpack and Seasonal Precipitation

May 4
2022

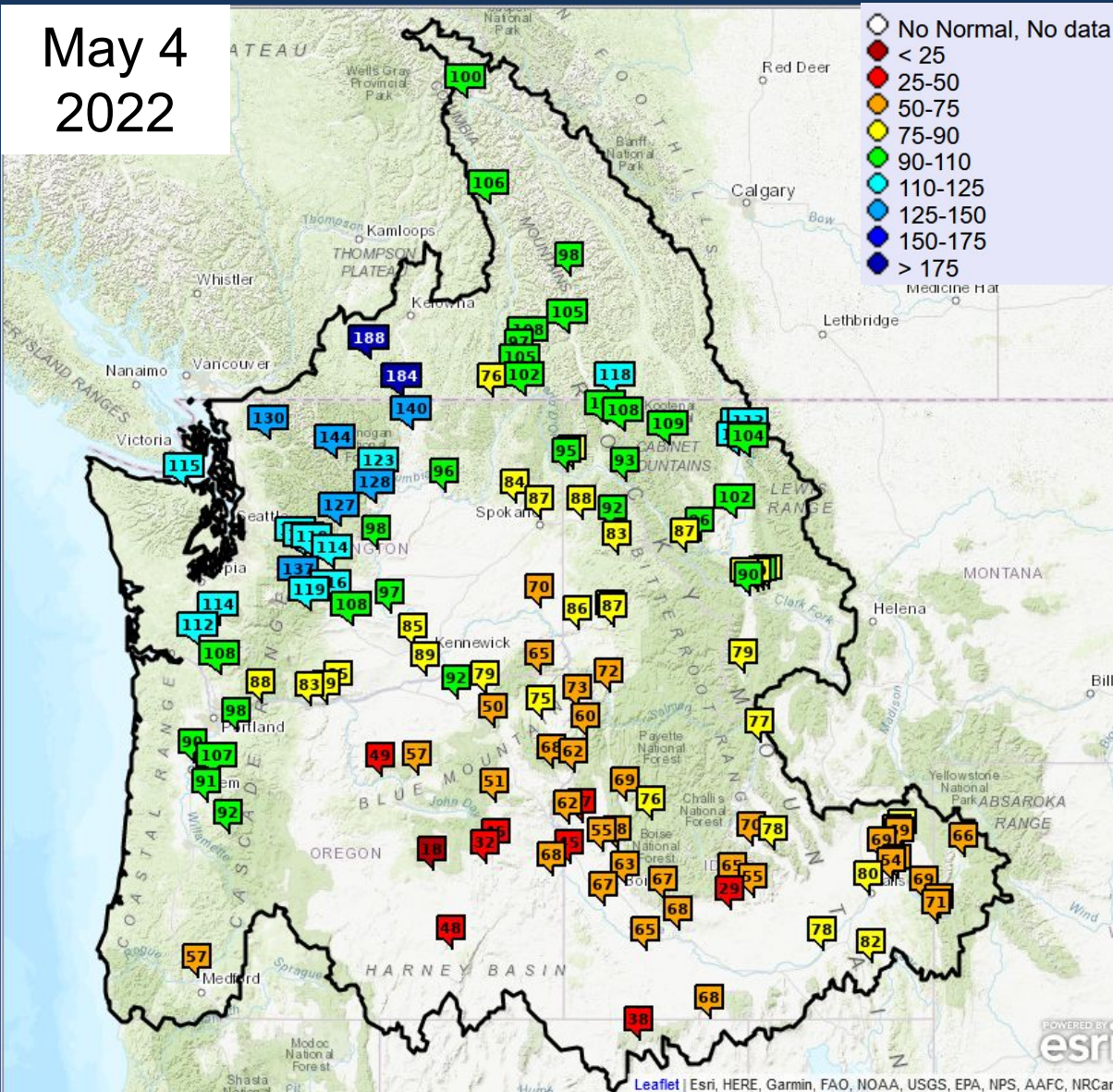


Columbia River above The Dalles



Year to Date Adjusted Runoff - East

May 4
2022



% Normal Runoff Oct 1 - May 4

Upper Columbia Basin

Δ since Apr 6

Mica	100	-15
Duncan	98	-21
Queens Bay	105	-23
Libby	109	-22
Hungry Horse	104	-27
Grand Coulee	96	-18

Snake River Basin

American Falls	78	-5
Lucky Peak	63	-9
Dworshak	79	-11
Lower Granite	70	-7

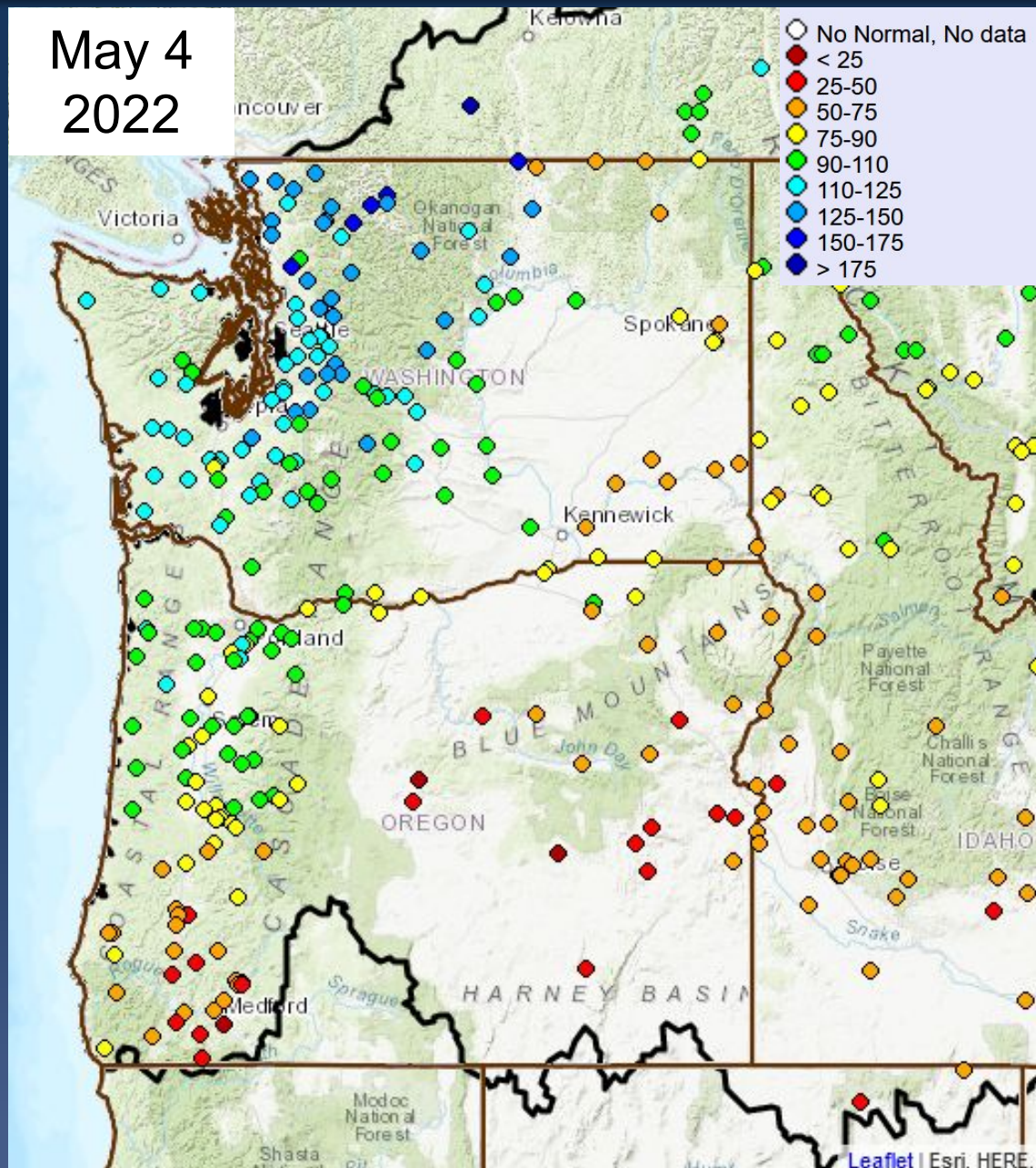
Lower Columbia Basin

The Dalles	83	-11
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Year to Date Adjusted Natural Runoff - OR, WA

May 4
2022



% Normal Runoff Oct 1 - May 4

Washington

Δ since Apr 6

Skagit nr Mt Vernon	130	-9
Dungeness nr Sequim	114	-5
Chehalis at Porter	119	1
Okanogan at Malott	140	-32
Methow nr Pateros	119	-44
Yakima at Parker	103	-12
Walla Walla nr Touchet	76	4

Oregon

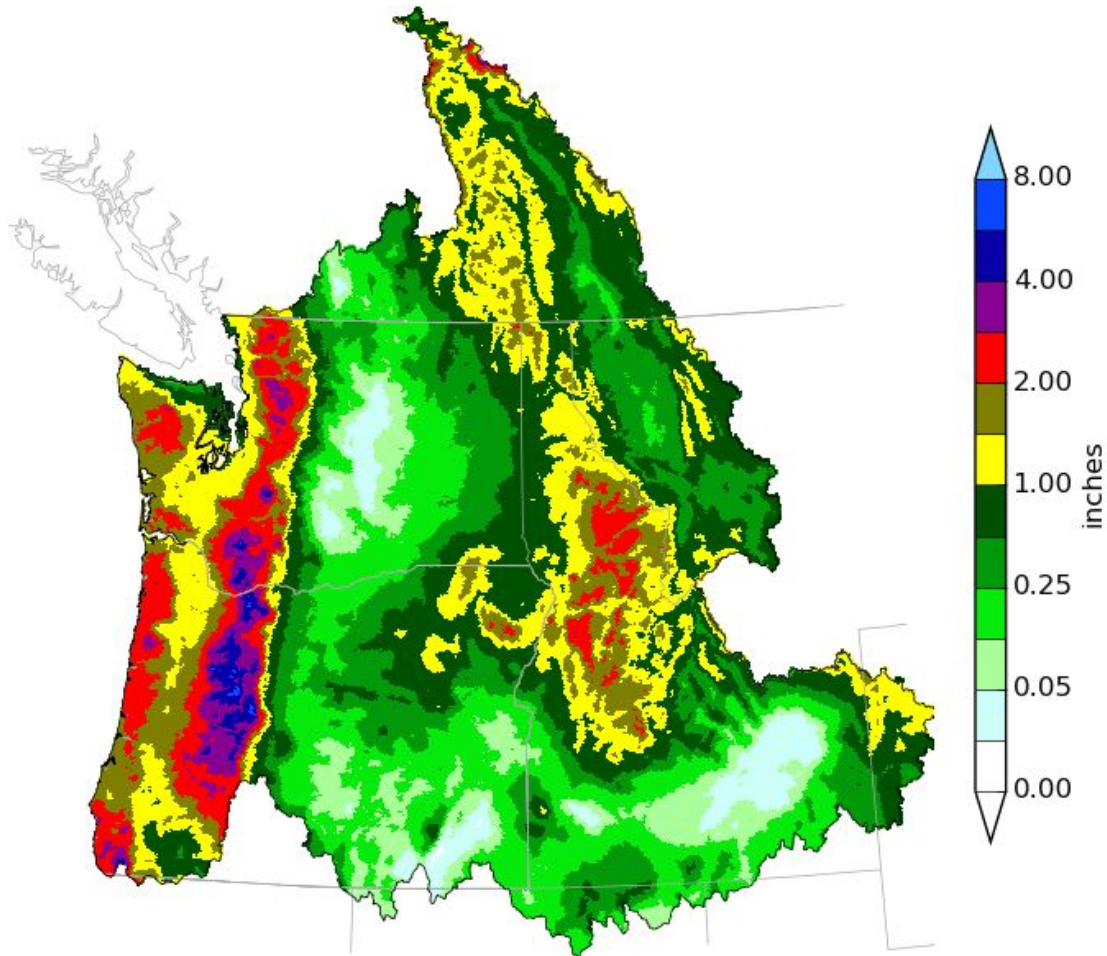
Willamette at Salem	81	2
Rogue at Raygold	56	3
Umatilla at Pendleton	91	-1
Grande Ronde at Troy	64	-6
Owyhee Dam	66	-8



Precipitation Forecast (May 4 - 13)



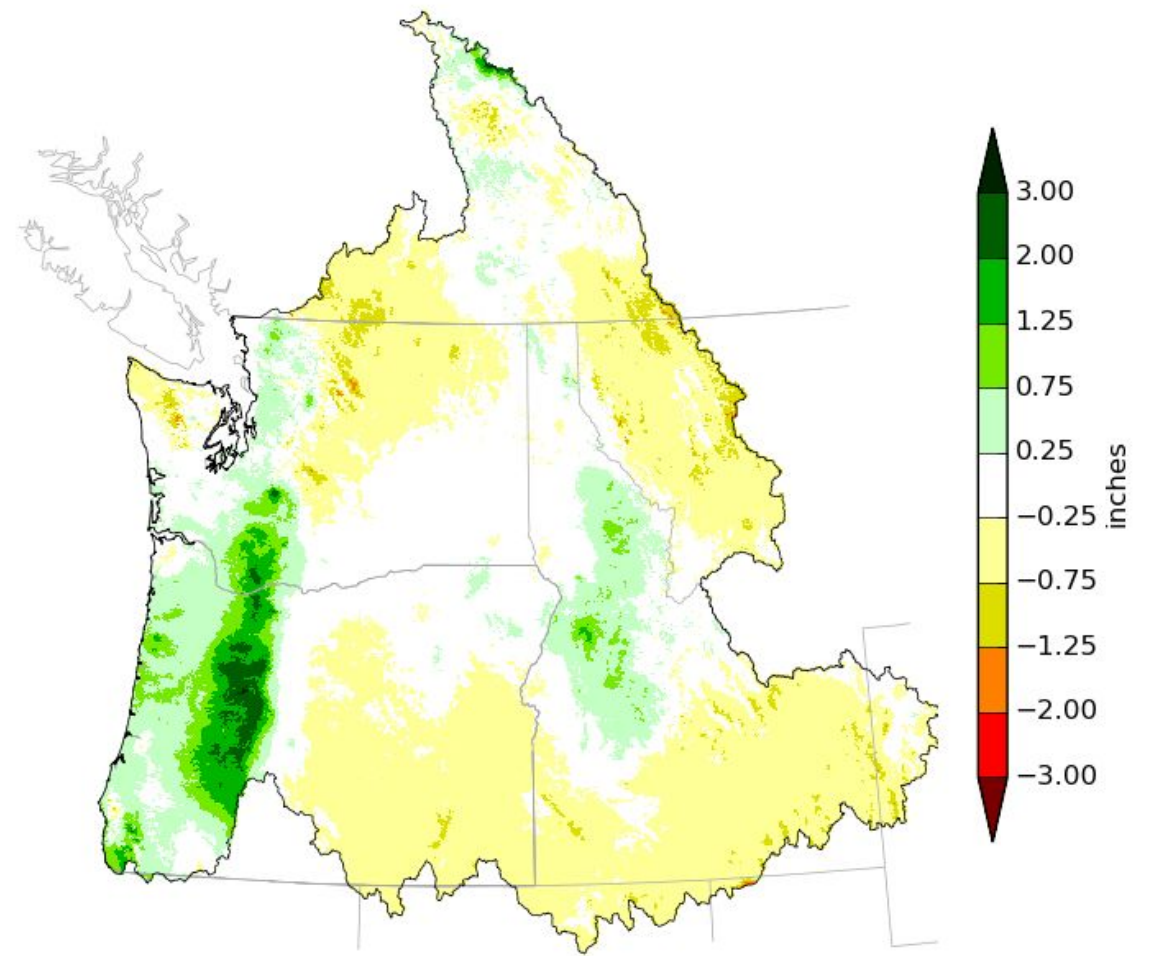
Northwest River Forecast Center
10 Day QPF, Ending 12Z, 05/14/22



Creation Time: Wed May 4 14:54:24 UTC 2022



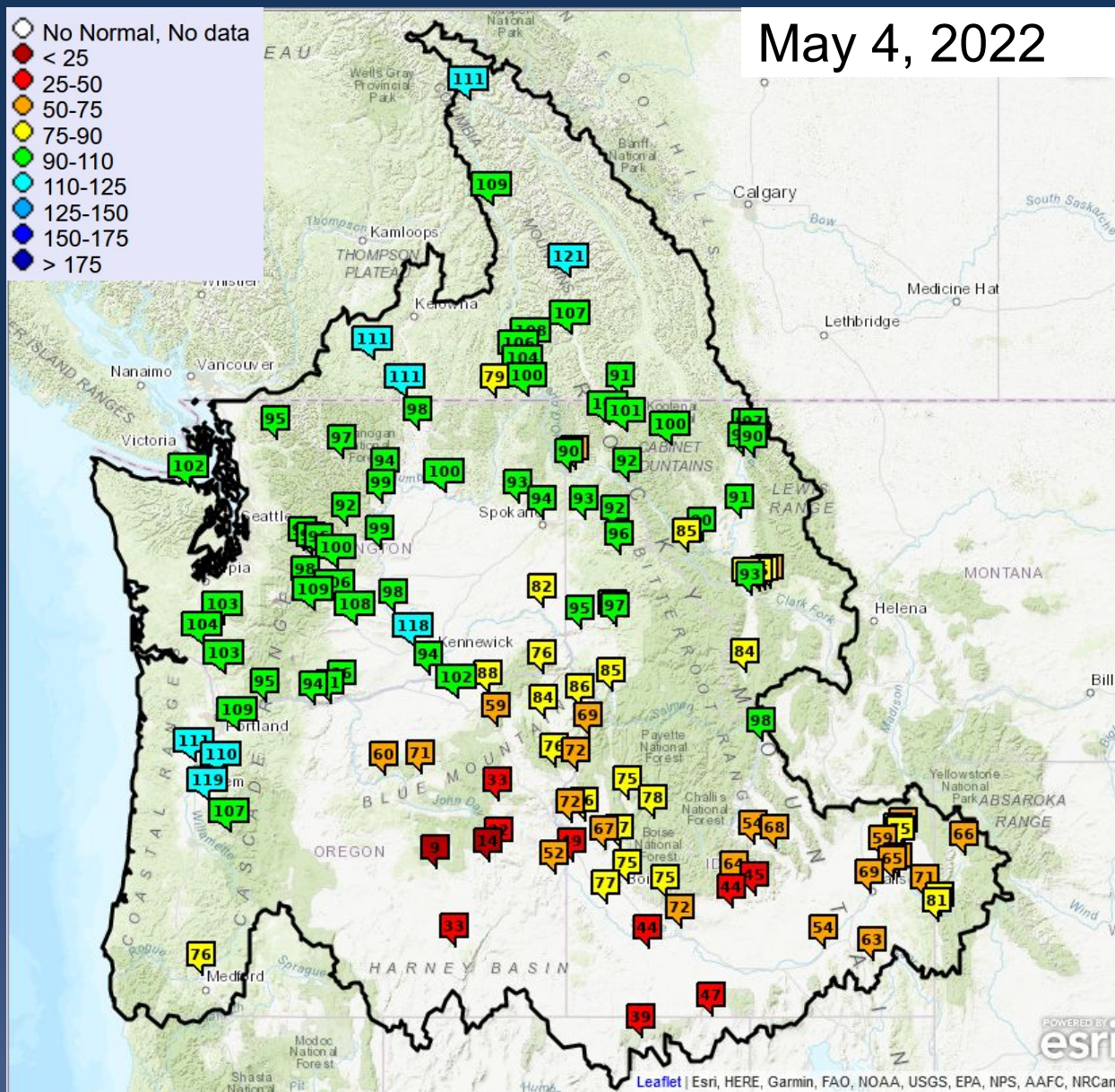
Northwest River Forecast Center
10 Day QPF (Deviation from Climatology), Ending 12Z, 05/14/22



Creation Time: Wed May 4 14:56:38 UTC 2022



ESP10 Water Supply Forecasts - East



% Normal Apr-Sep Volume

Upper Columbia Basin

		<u>Δ since Apr 6</u>
Mica	111	-5
Duncan	121	-7
Queens Bay	107	-5
Libby	100	-8
Hungry Horse	90	-8
Grand Coulee	100	-7

Snake River Basin

American Falls	54	11
Lucky Peak	75	12
Dworshak	93	4
Lower Granite	82	7

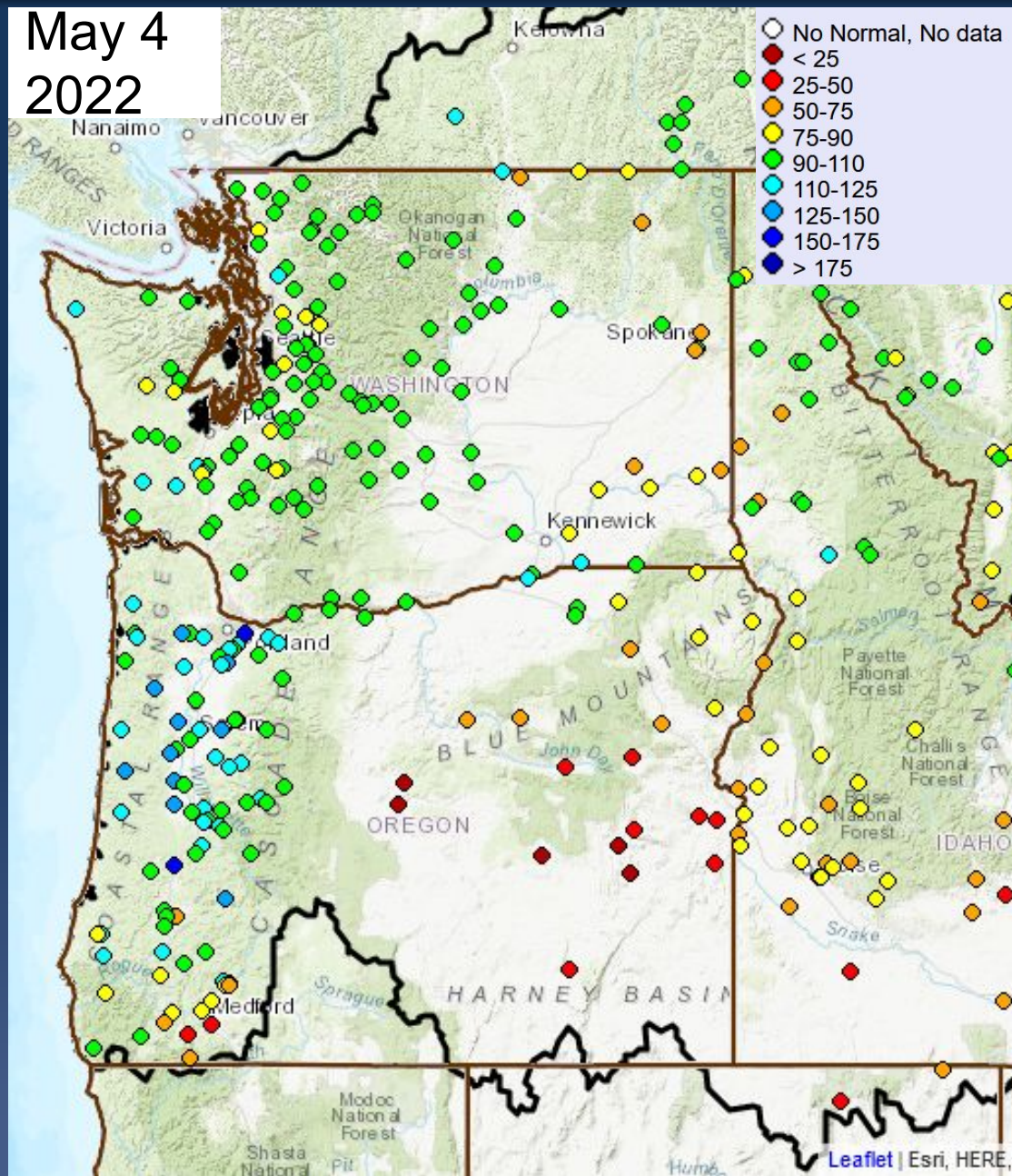
Lower Columbia Basin

The Dalles	94	-3
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ESP10 Natural Forecasts - OR, WA

May 4
2022



% Normal Apr -Sep Volume

Washington

Δ since Apr 6

Skagit nr Mt Vernon	97	-2
Dungeness nr Sequim	102	16
Chehalis at Porter	109	30
Okanogan at Malott	97	-9
Methow nr Pateros	94	-4
Yakima at Parker	100	8
Walla Walla nr Touchet	110	47

Oregon

Willamette at Salem	103	35
Rogue at Raygold	77	17
Umatilla at Pendleton	102	29
Grande Ronde R at Troy	76	4
Owyhee Dam	49	7



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: 2022-05-04 Issued: 2022-05-04

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	58608	61662	100	67520	61483
APR-JUL	48060	50748	96	56156	52774
APR-AUG	54156	57157	98	63576	58186
JAN-SEP	68109	71163	101	77021	70457
JAN-JUL	57561	60249	98	65657	61749
OCT-SEP	78952	82006	104	87864	78842

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2022-05-04 Issued: 2022-05-04

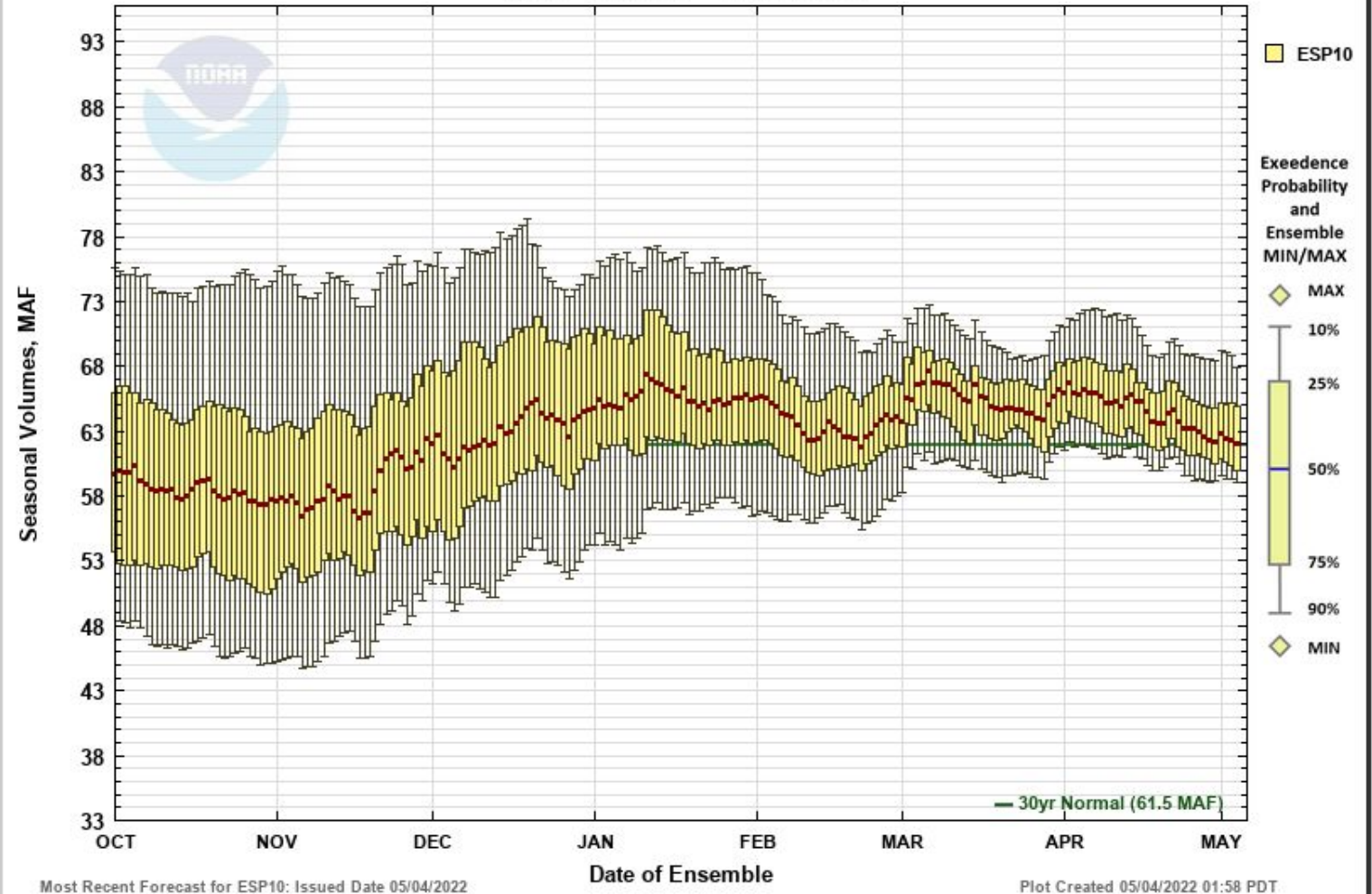
APR-SEP	59558	62852	102	68735	61483
APR-JUL	50037	52373	99	58052	52774
APR-AUG	55895	58810	101	64983	58186
JAN-SEP	69059	72353	103	78236	70457
JAN-JUL	59538	61874	100	67553	61749
OCT-SEP	79902	83196	106	89079	78842

Reference

ESP with 0 Days QPF Ensemble: 2022-05-04 Issued: 2022-05-04

APR-SEP	58198	61914	101	67667	61483
APR-JUL	48636	51446	97	56925	52774
APR-AUG	54858	57947	100	64056	58186
JAN-SEP	67699	71415	101	77168	70457
JAN-JUL	58137	60947	99	66426	61749
OCT-SEP	78542	82259	104	88012	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 Apr-Sep Water Supply Forecasts

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

Official Water Supply

ESP with 10 Days QPF Ensemble: 2022-05-04 Issued: 2022-05-04

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	17265	18123	82	21321	22232
APR-JUL	14990	15716	79	18813	19946
APR-AUG	16135	16936	80	20087	21121
JAN-SEP	22751	23610	79	26807	29736
JAN-JUL	20477	21202	77	24299	27450
OCT-SEP	26656	27515	80	30712	34287

Experimental Water Supply

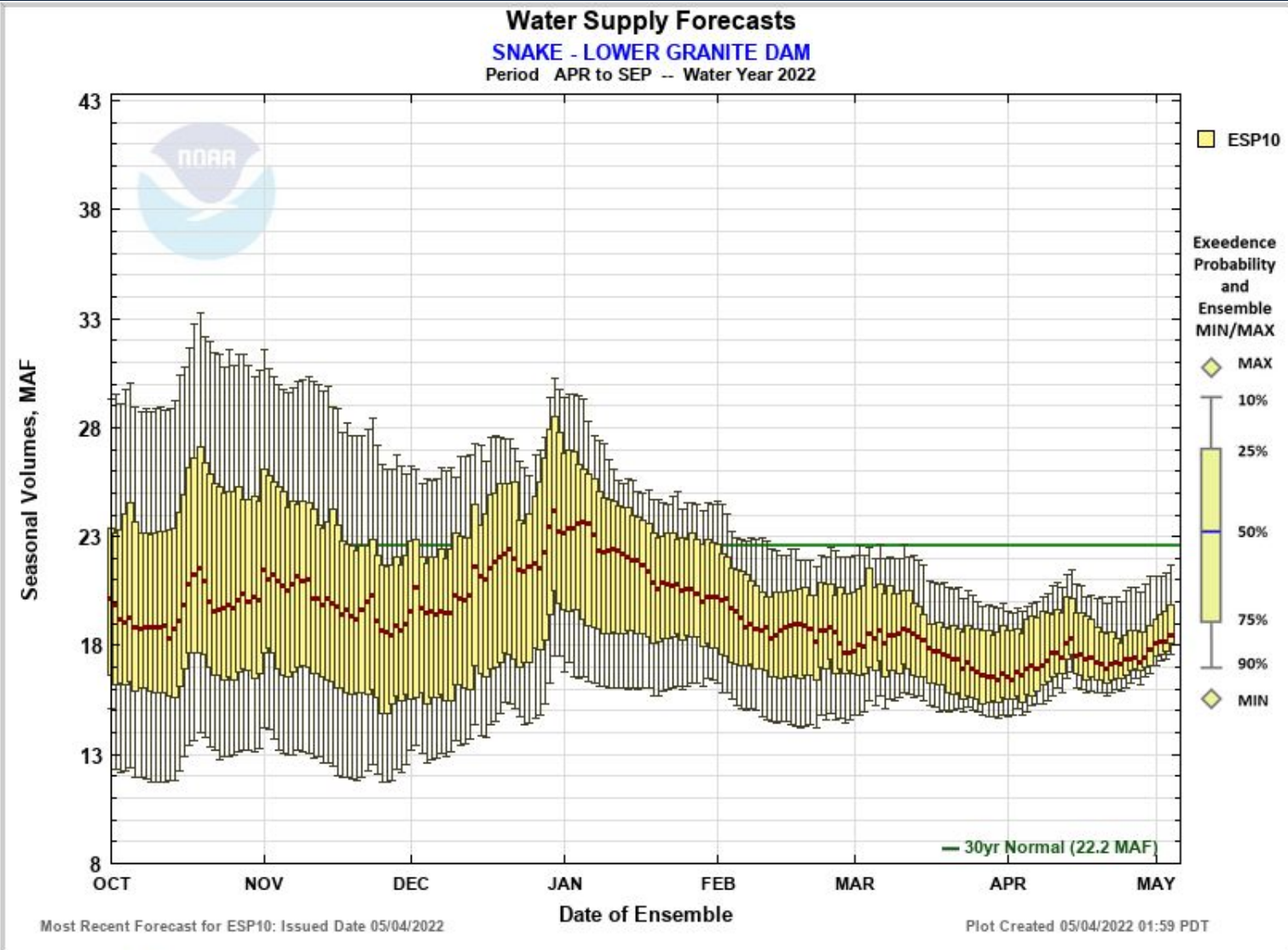
HEFS with 15 days EQPF Ensemble: 2022-05-04 Issued: 2022-05-04

APR-SEP	16892	18390	83	21576	22232
APR-JUL	14677	15919	80	18952	19946
APR-AUG	15797	17121	81	20249	21121
JAN-SEP	22379	23876	80	27063	29736
JAN-JUL	20163	21406	78	24439	27450
OCT-SEP	26284	27781	81	30968	34287

Reference

ESP with 0 Days QPF Ensemble: 2022-05-04 Issued: 2022-05-04

APR-SEP	16306	17692	80	20888	22232
APR-JUL	14078	15256	76	18431	19946
APR-AUG	15199	16387	78	19710	21121
JAN-SEP	21792	23178	78	26374	29736
JAN-JUL	19565	20743	76	23917	27450
OCT-SEP	25697	27083	79	30279	34287



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



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: 2022-05-04 Issued: 2022-05-04

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	84439	88889	94	97187	94166
APR-JUL	70372	75003	92	81837	81933
APR-AUG	78563	83250	93	91391	89196
JAN-SEP	102851	107301	93	115600	115946
JAN-JUL	88785	93415	90	100249	103714
OCT-SEP	120916	125366	95	133665	132314

Experimental Water Supply

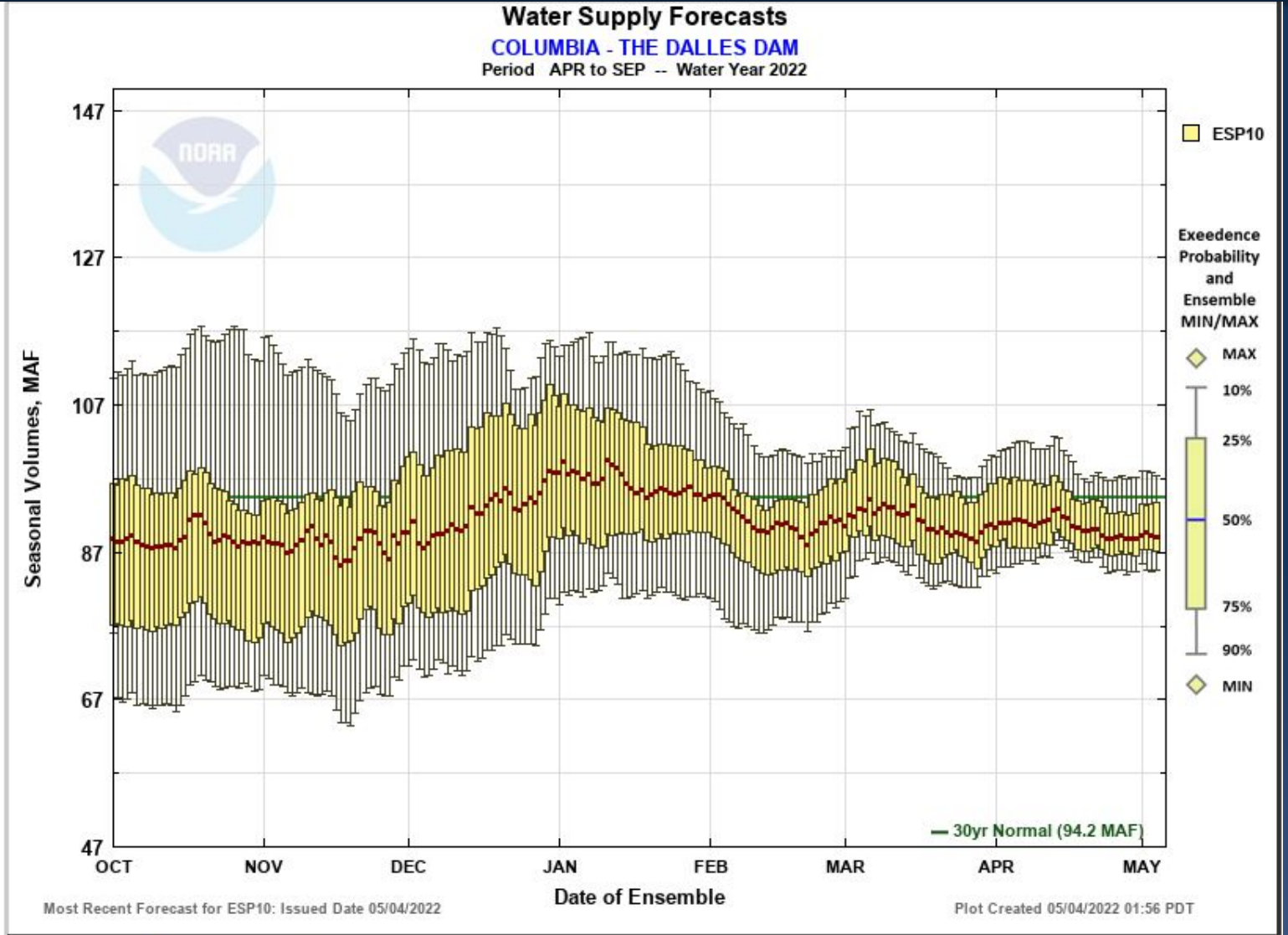
HEFS with 15 days EQPF Ensemble: 2022-05-04 Issued: 2022-05-04

APR-SEP	85198	90996	97	99406	94166
APR-JUL	72885	77186	94	85235	81933
APR-AUG	79930	85425	96	93679	89196
JAN-SEP	103610	109408	94	117818	115946
JAN-JUL	91297	95598	92	103647	103714
OCT-SEP	121675	127474	96	135883	132314

Reference

ESP with 0 Days QPF Ensemble: 2022-05-04 Issued: 2022-05-04

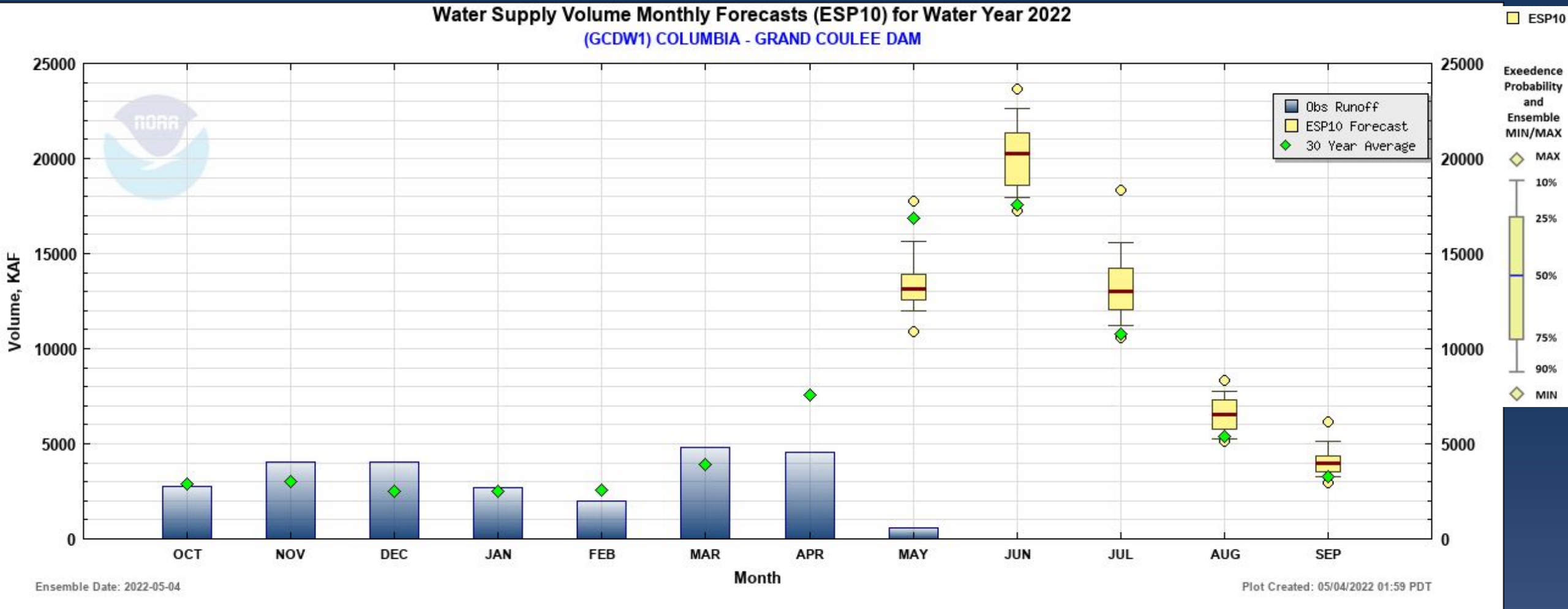
APR-SEP	84079	88843	94	96933	94166
APR-JUL	71162	75567	92	83067	81933
APR-AUG	78290	83565	94	91232	89196
JAN-SEP	102491	107255	93	115345	115946
JAN-JUL	89575	93979	91	101479	103714
OCT-SEP	120556	125320	95	133410	132314



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



ESP10 Water Supply Volume Monthly Forecasts

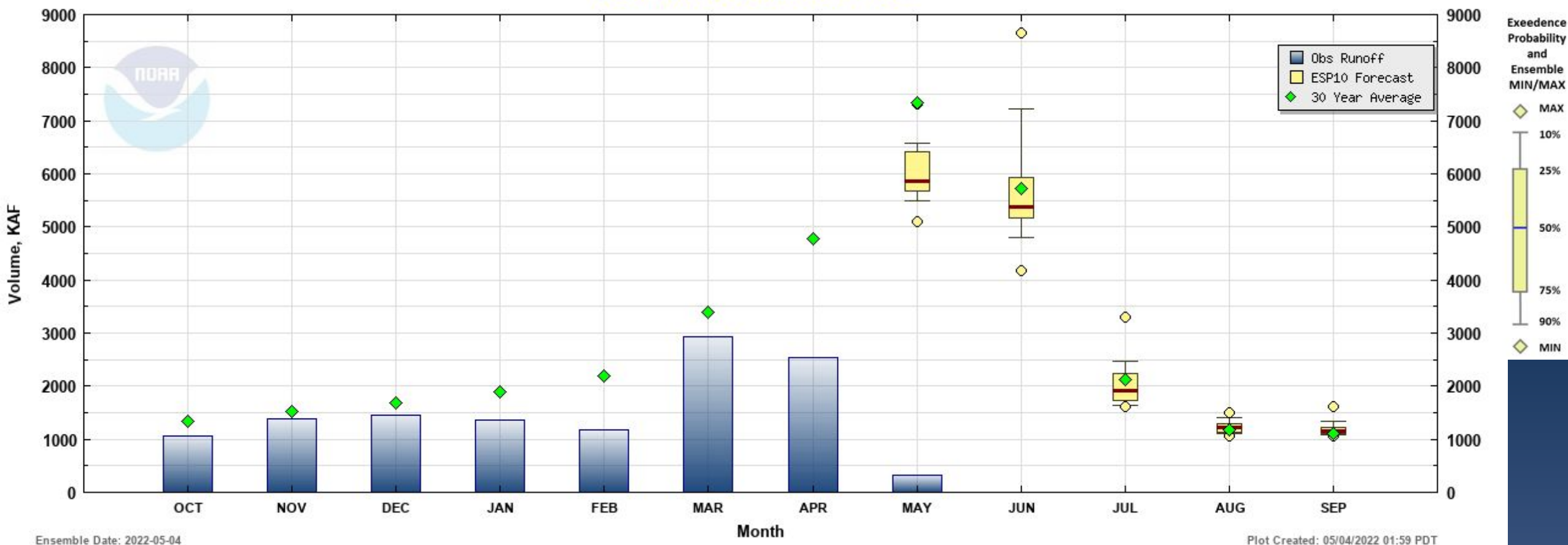




ESP10 Water Supply Volume Monthly Forecasts

Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2022

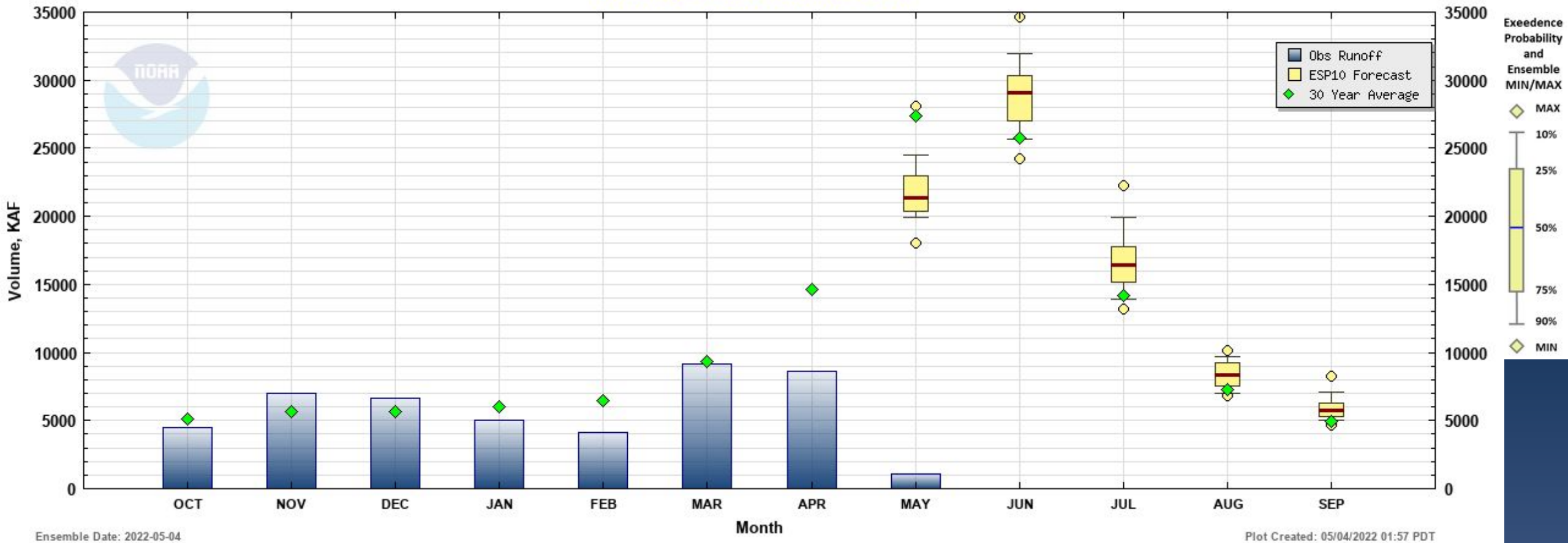
(LGDW1) SNAKE - LOWER GRANITE DAM





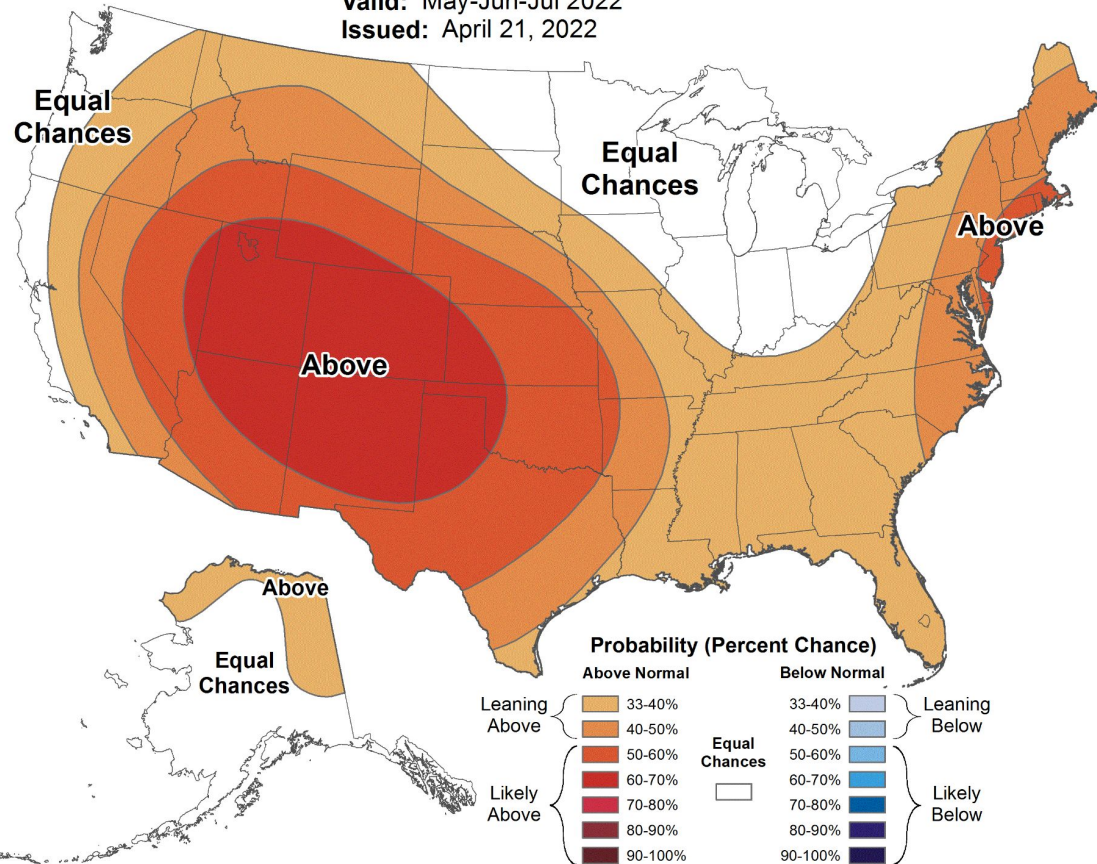
ESP10 Water Supply Volume Monthly Forecasts

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

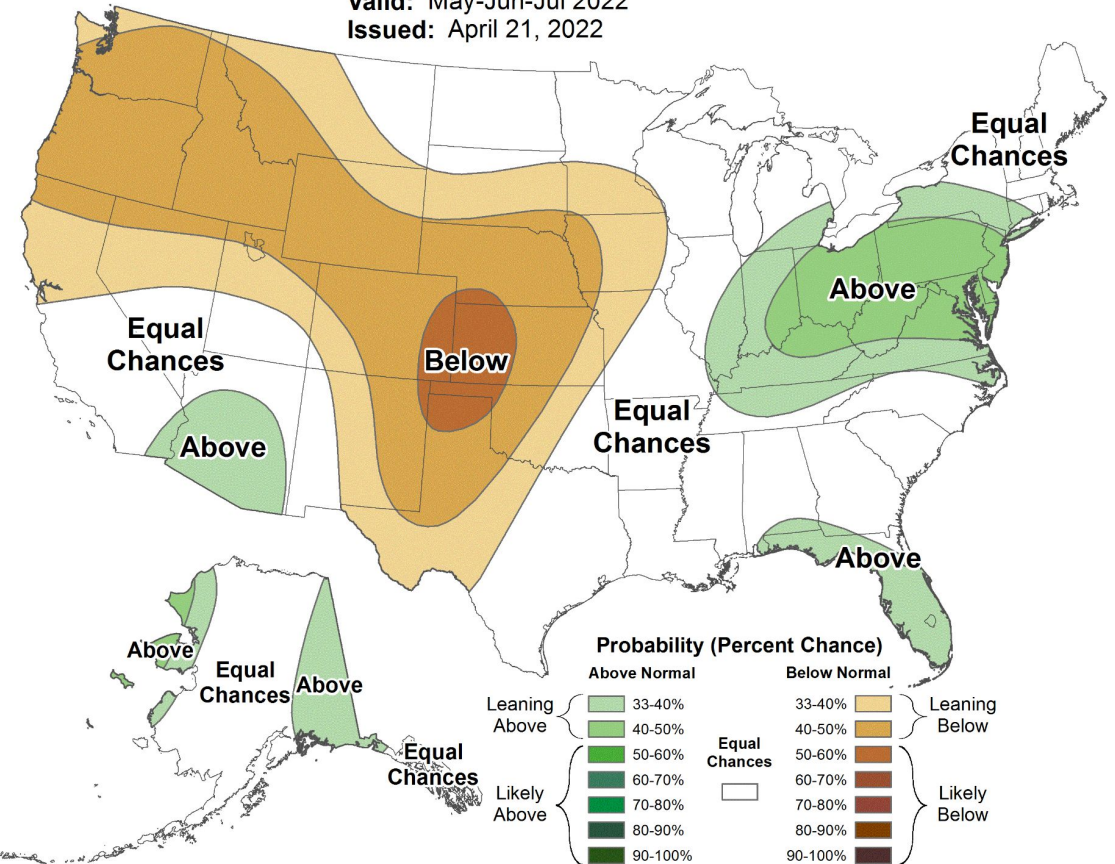




Issued: April 21, 2022



Issued: April 21, 2022





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WY2022 Schedule for Live Water Supply Briefings

June

2

All presentations held at 10:00 am PST/PDT unless noted otherwise

Telephone Conference Call Number
(same for each month's brief):
(562) 247 - 8422

Pass Code :
146-348-602#



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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

