



Northwest River Forecast Center

May 2024 Water Supply Briefing

Henry Pai, Senior Hydrologist
NWRFC.watersupply@noaa.gov

May 2, 2024



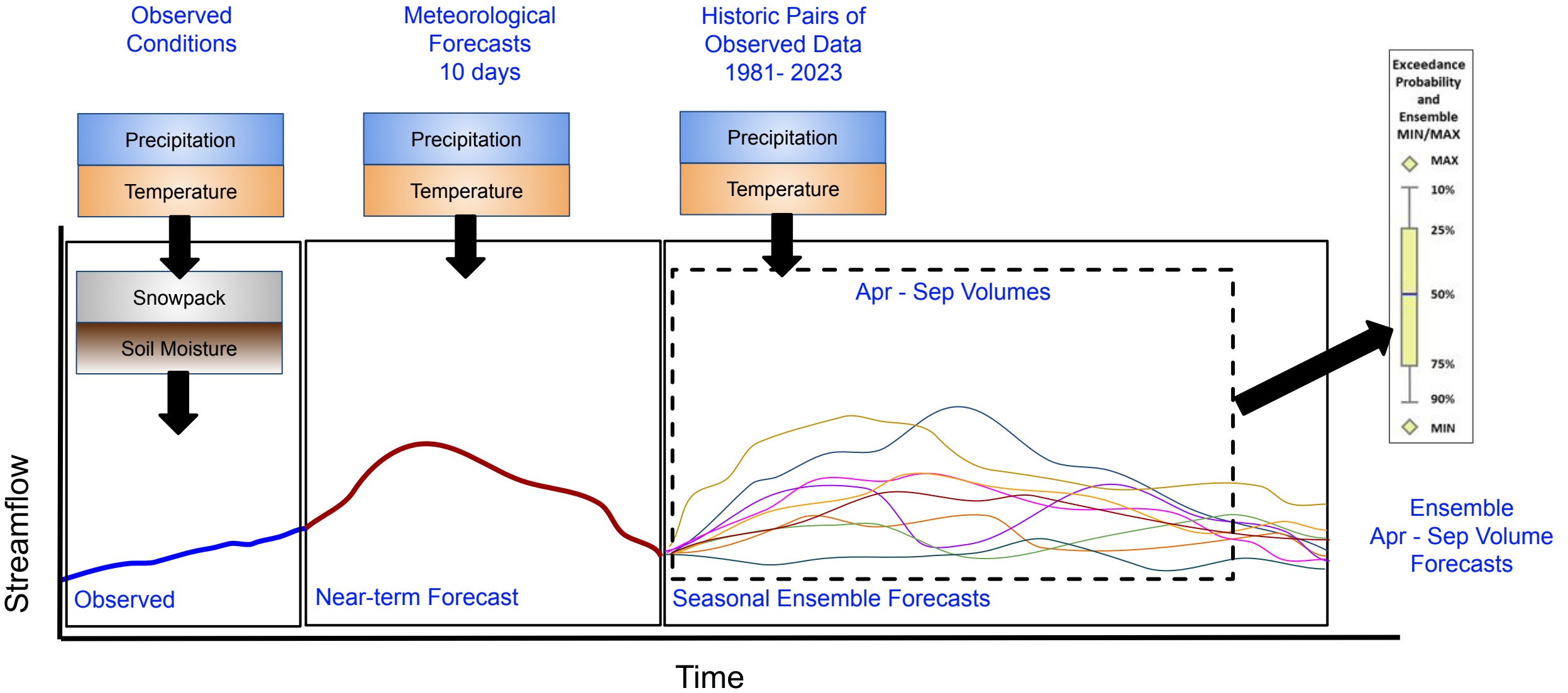


Key Takeaways

- April precipitation was generally below normal except for the Canadian portion of the Columbia and central Idaho where it was near and above normal, respectively.
- Southern basins have experienced snowmelt leading to diminishing snowpacks.
- Water supply forecasts are largely correlated with seasonal peak snowpack resulting in well below normal forecasts in the north (Canadian portion of the Columbia River Basin) and well above normal forecasts in the south.



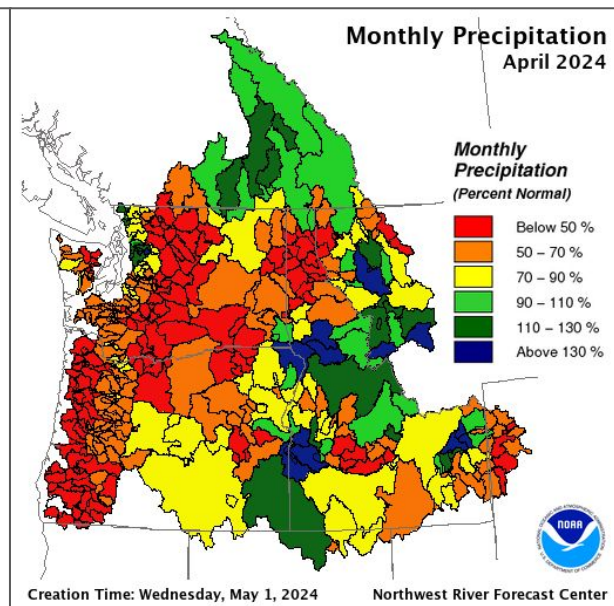
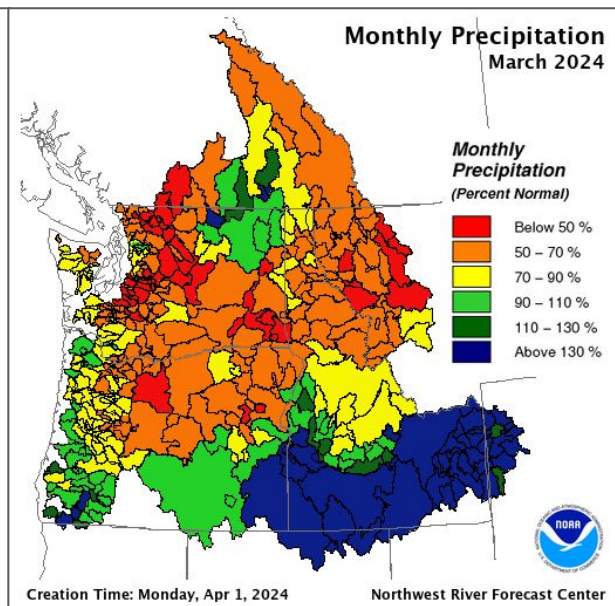
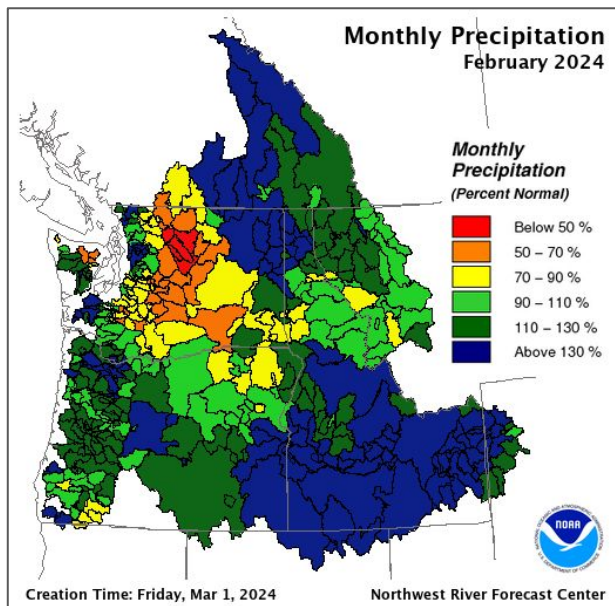
NWRFC Forecast Technique: Ensemble Streamflow Prediction



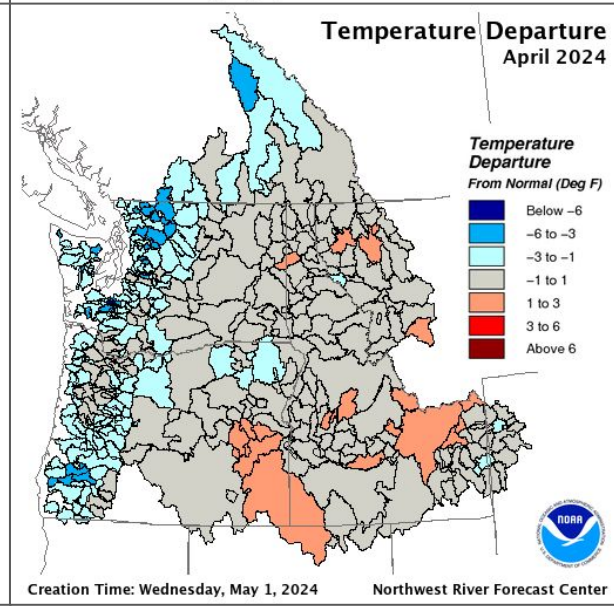
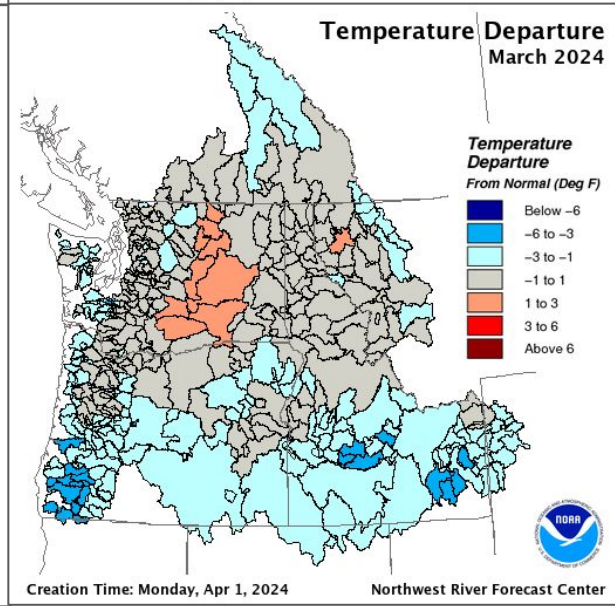
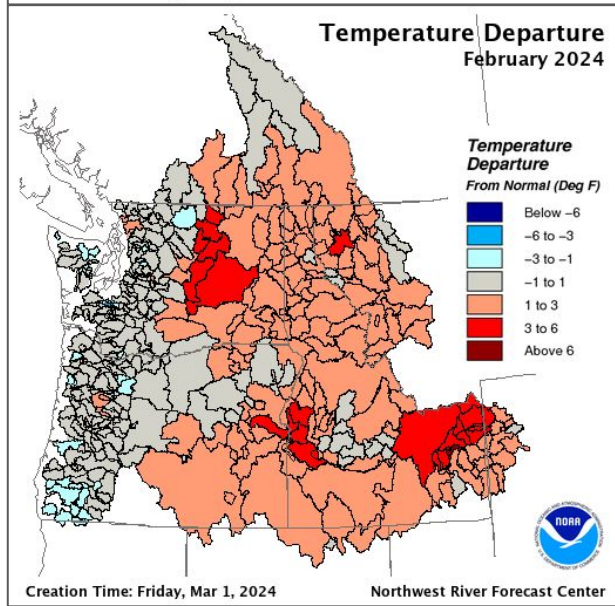


Observed Monthly Precipitation and Temperature

Precipitation % Normal

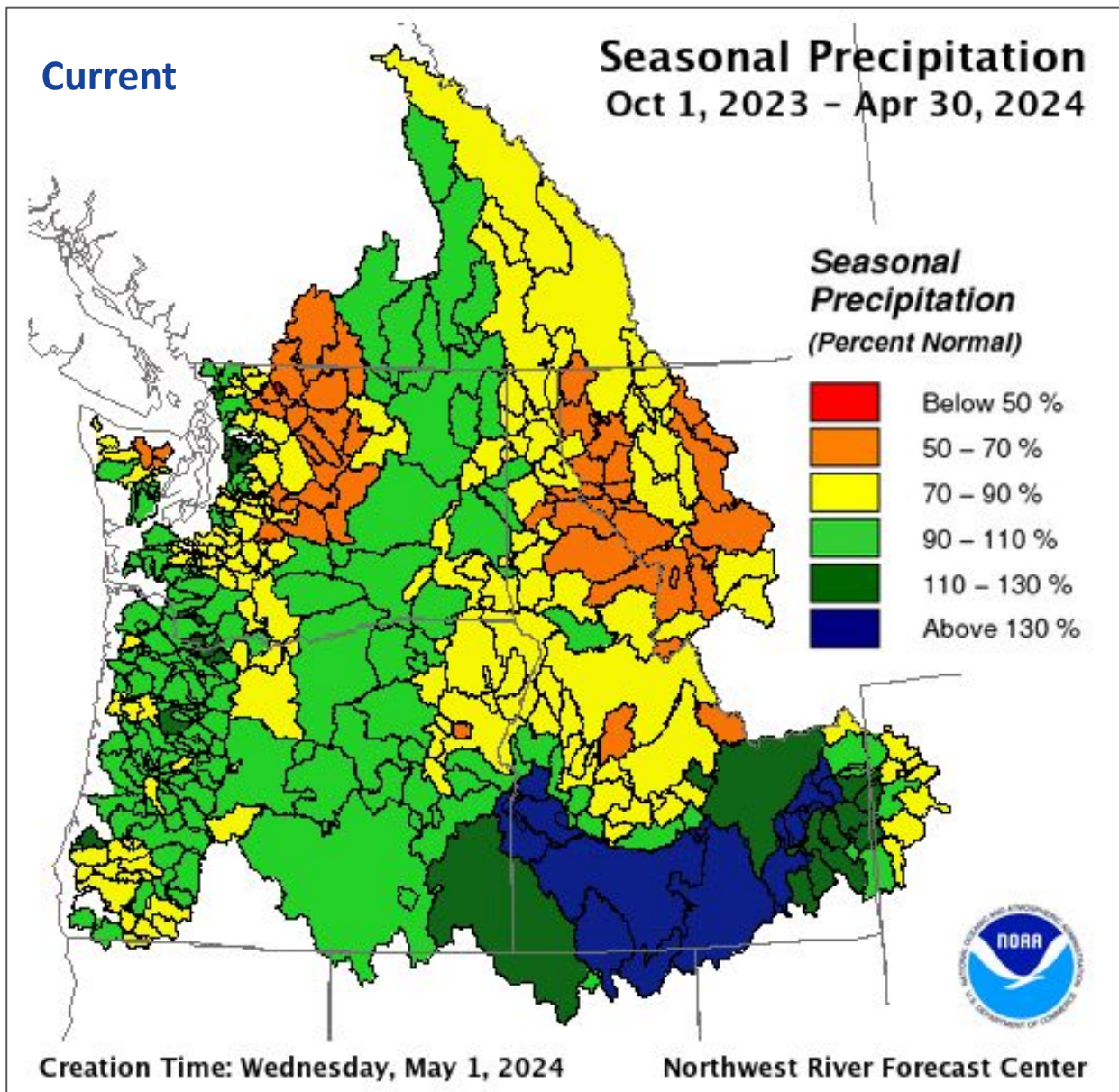
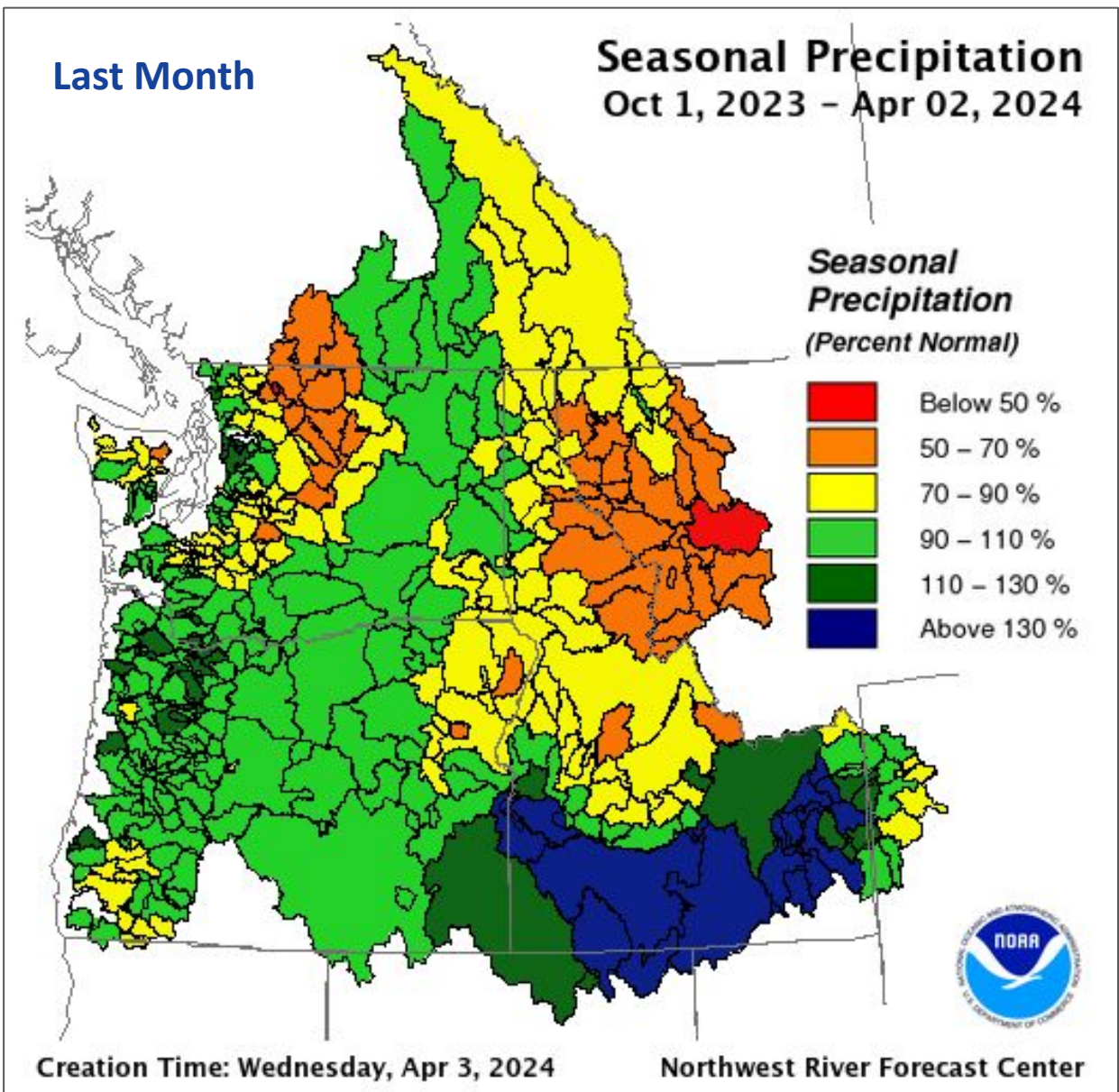


Temperature Departure from Normal

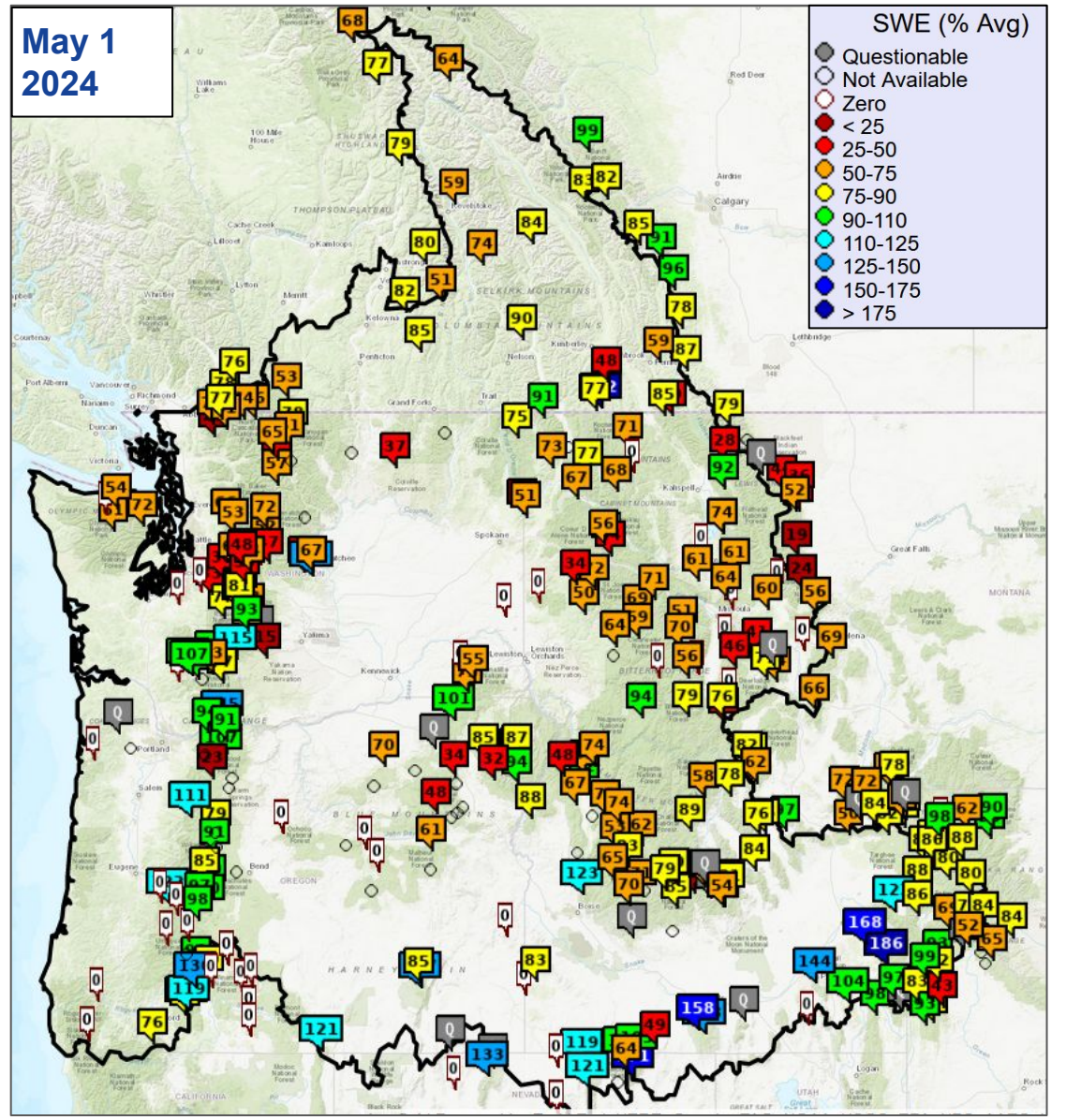
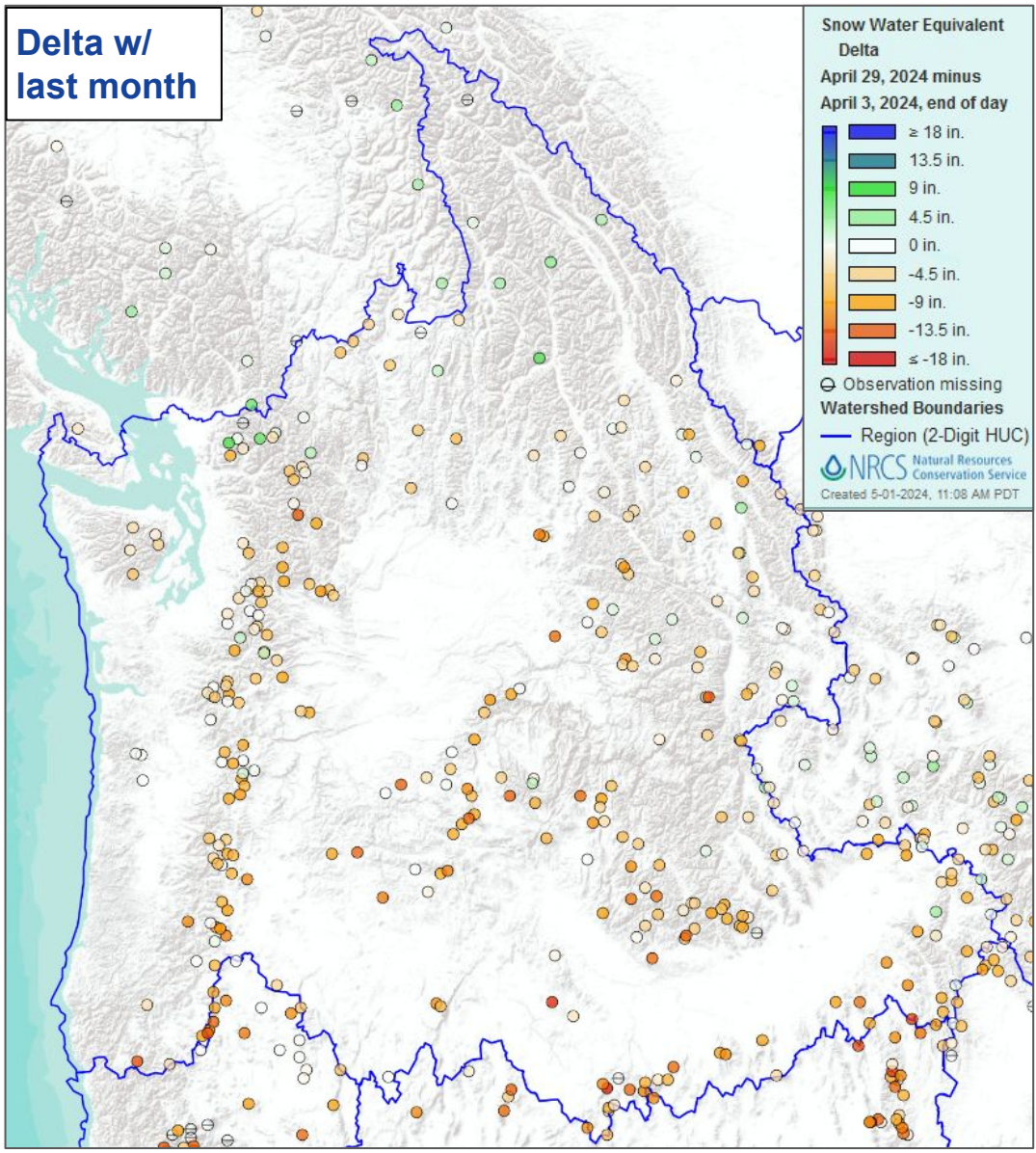




Water Year to Date Precipitation



Snowpack



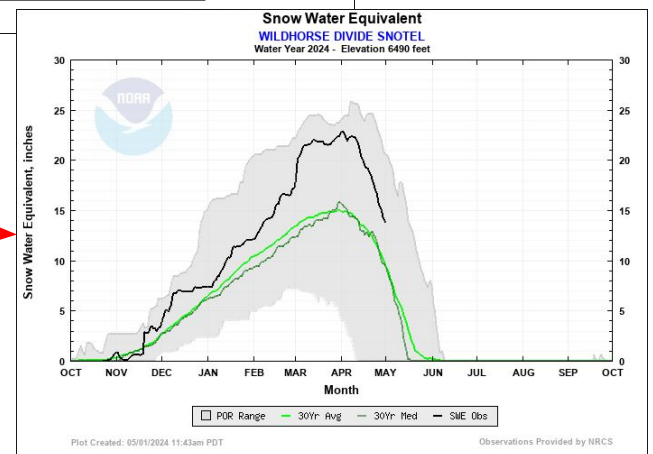
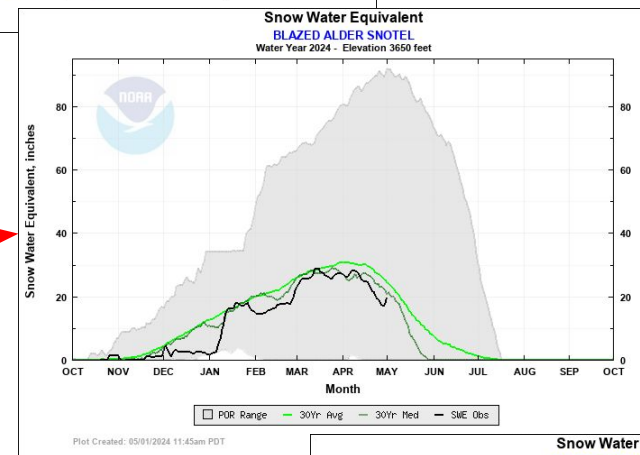
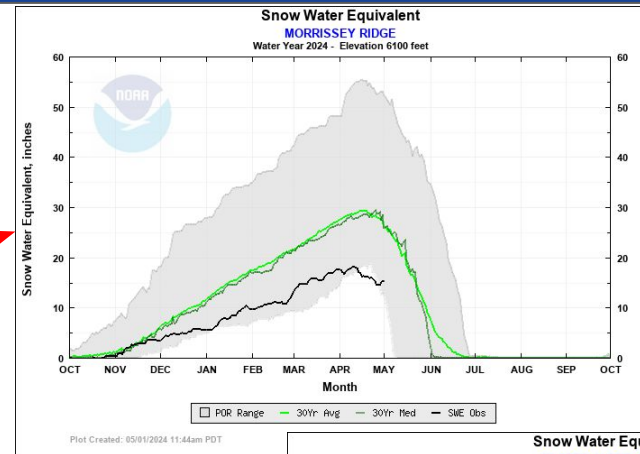
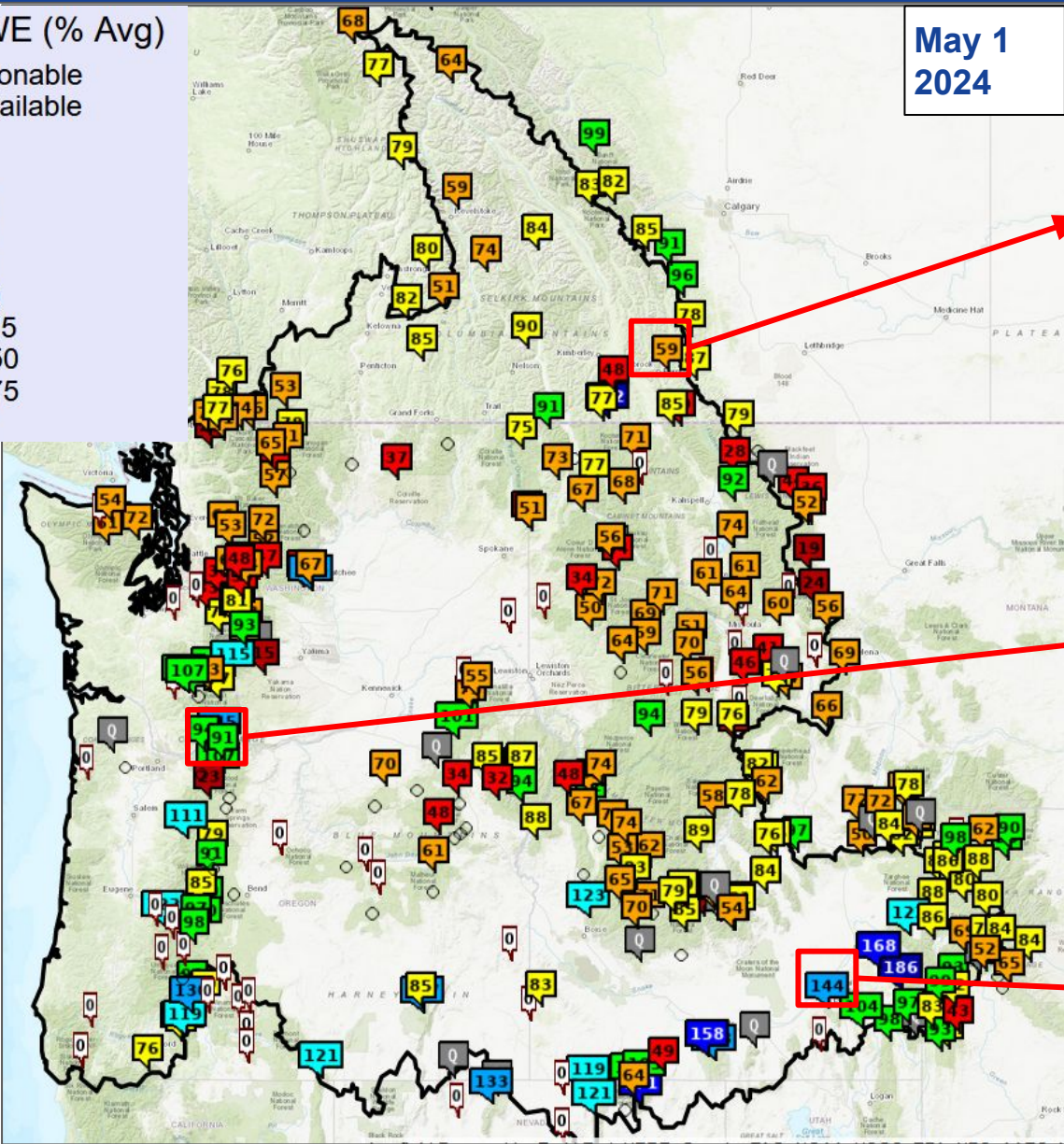
Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.



Snowpack

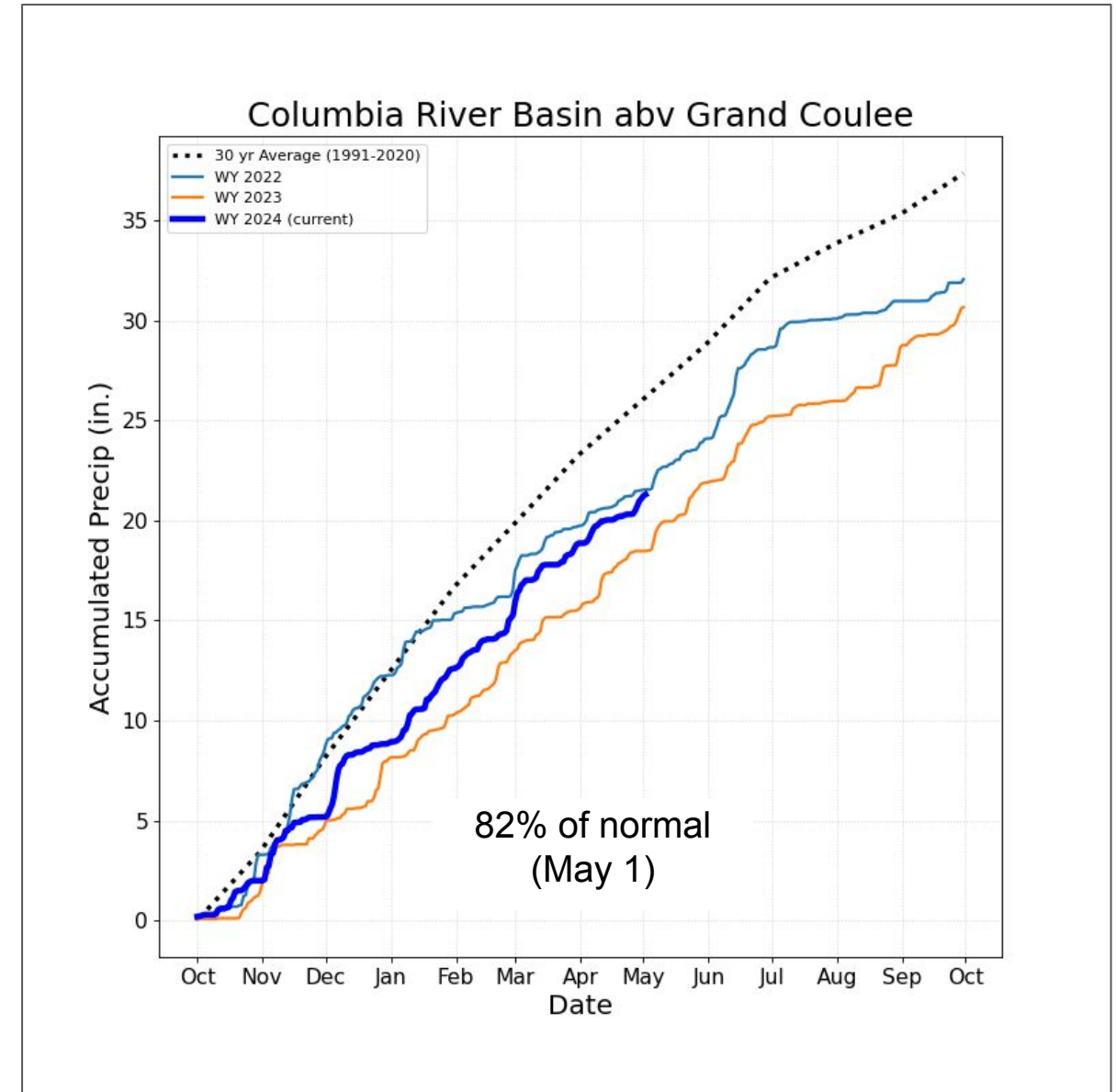
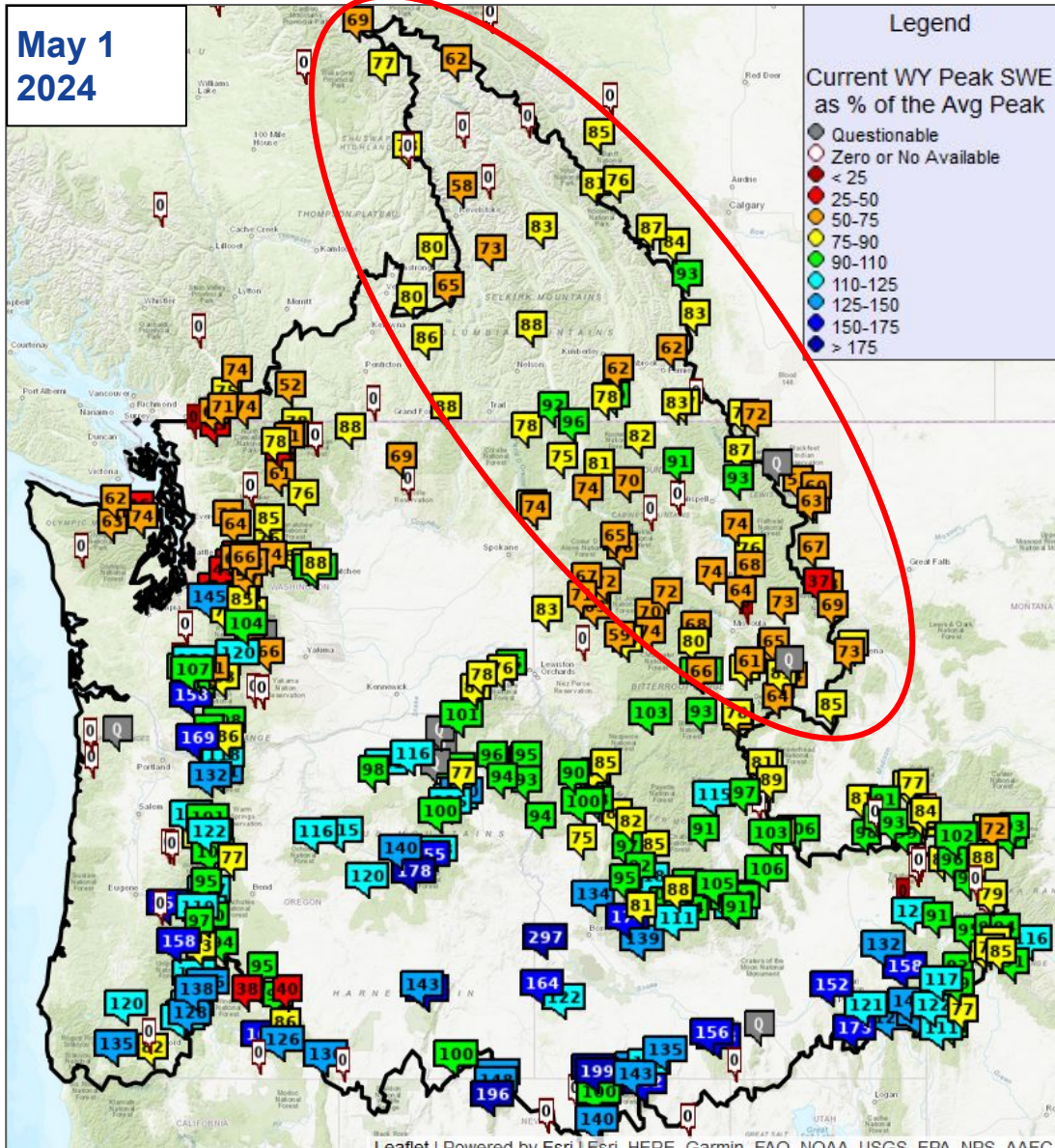
- SWE (% Avg)**
- Questionable
 - Not Available
 - Zero
 - < 25
 - 25-50
 - 50-75
 - 75-90
 - 90-110
 - 110-125
 - 125-150
 - 150-175
 - > 175

May 1
2024



Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

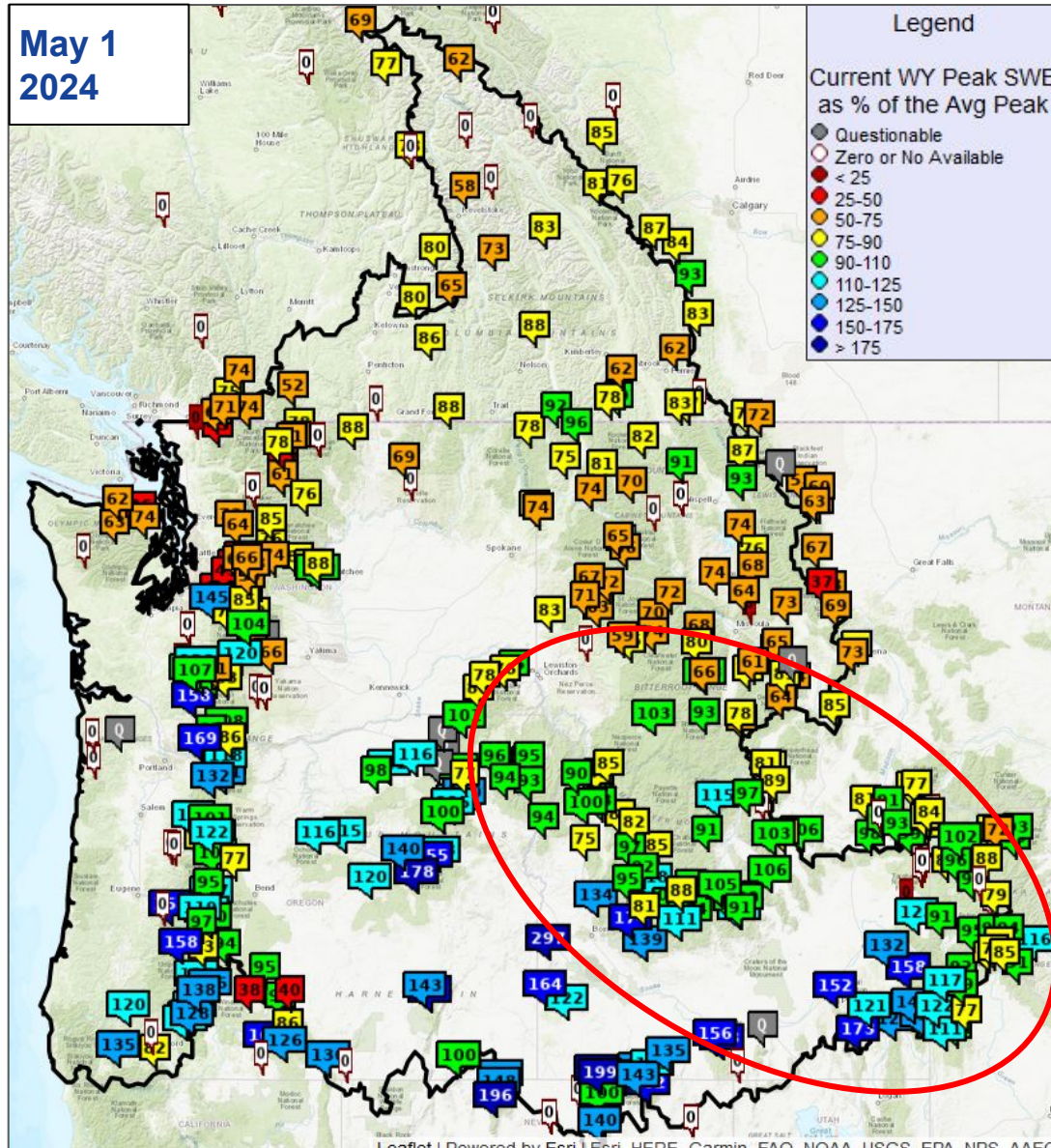
Snowpack and Precipitation



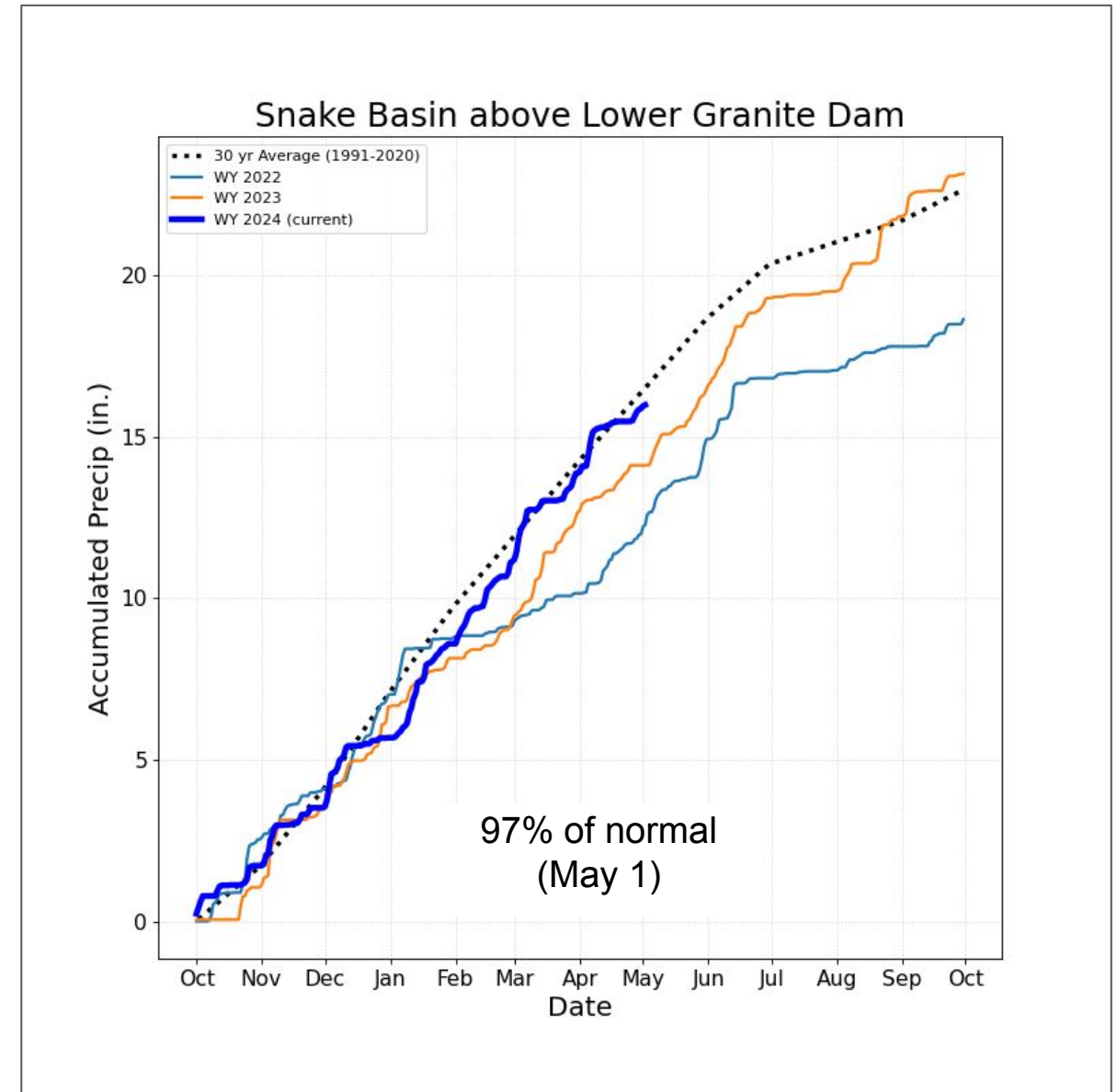
Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

Precip averages from PRISM, OSU and PCIC.

Snowpack and Precipitation

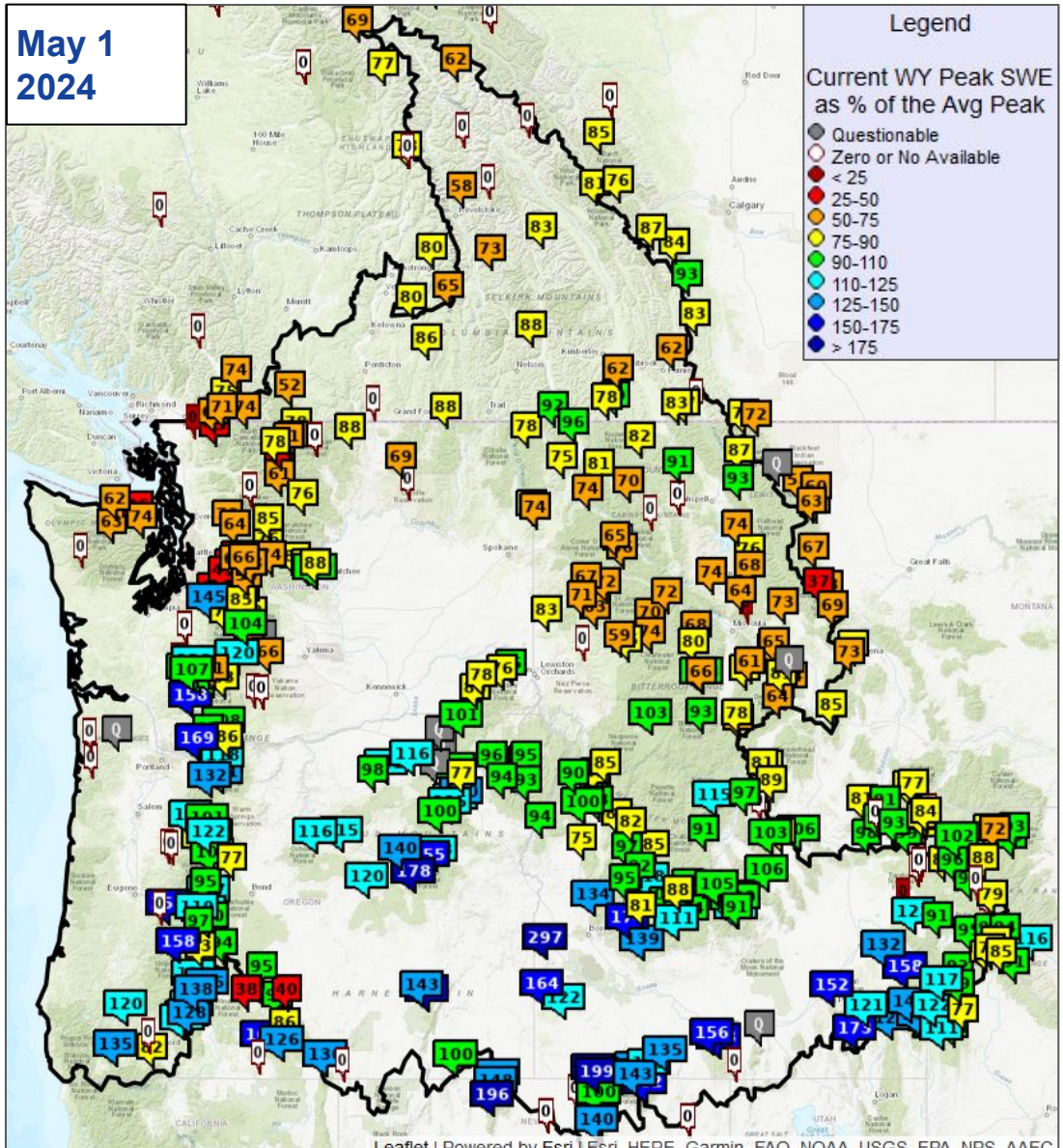


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

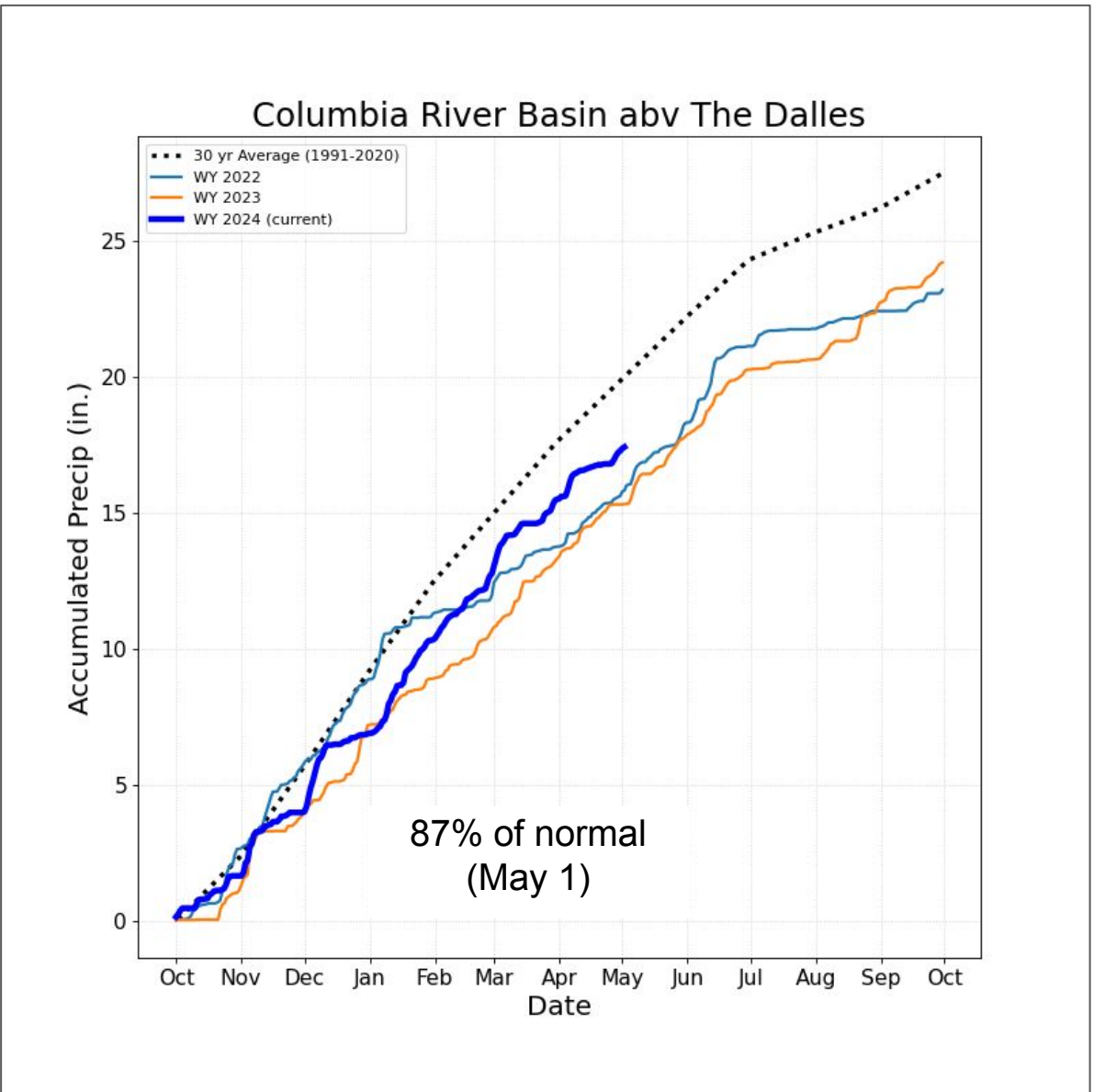


Precip averages from PRISM, OSU and PCIC.

Snowpack and Precipitation



Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.



Precip averages from PRISM, OSU and PCIC.

Water Year to Date Adjusted Observed Runoff

% Normal Runoff Oct 1 - May 1

Upper Columbia Basin

Δ since Apr 3

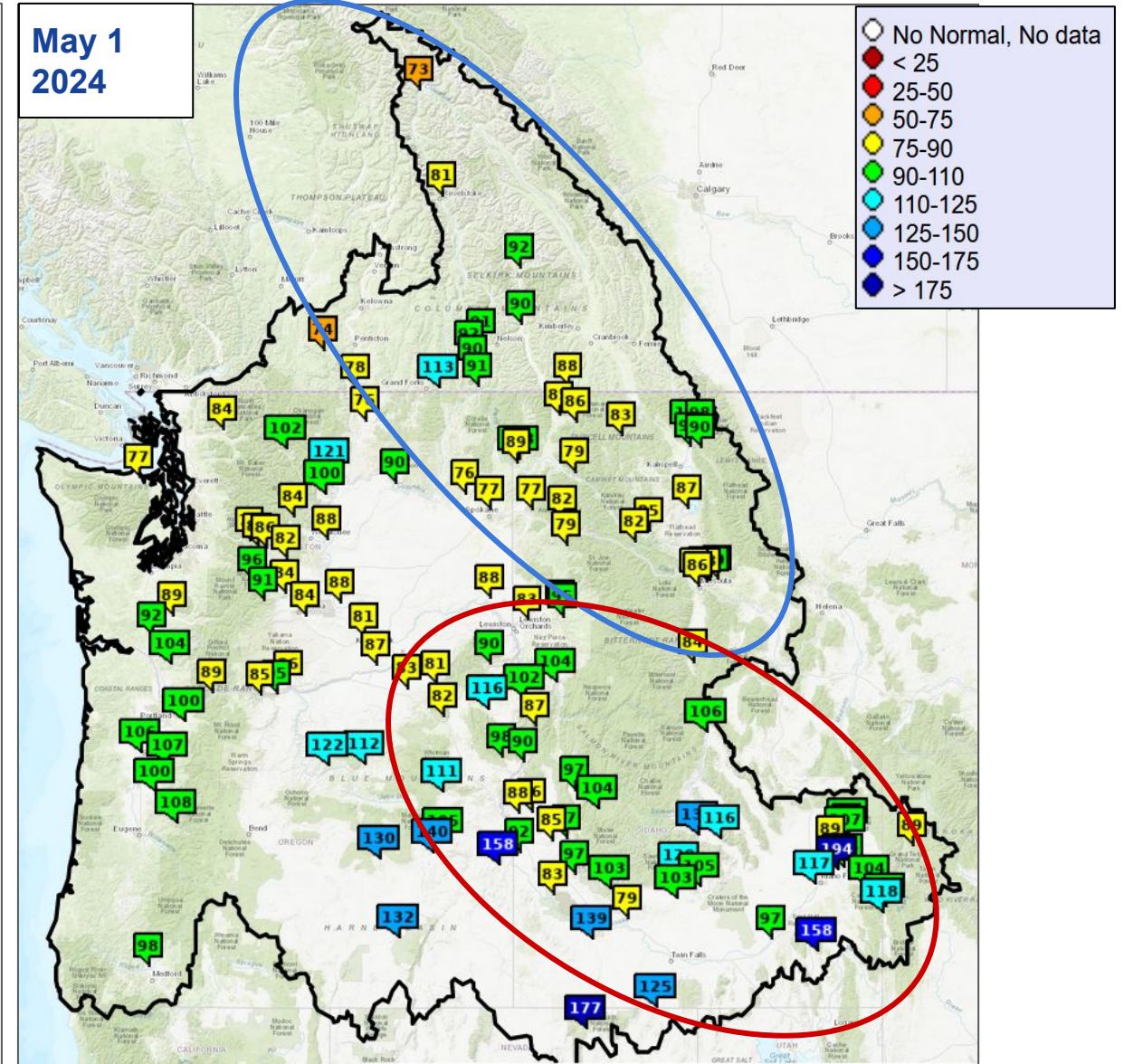
Mica	73	-1
Duncan	92	-2
Queens Bay	90	-3
Libby	83	1
Hungry Horse	90	1
Grand Coulee	90	-4

Snake River Basin

American Falls	97	1
Lucky Peak	97	11
Dworshak	73	1
Lower Granite	88	8

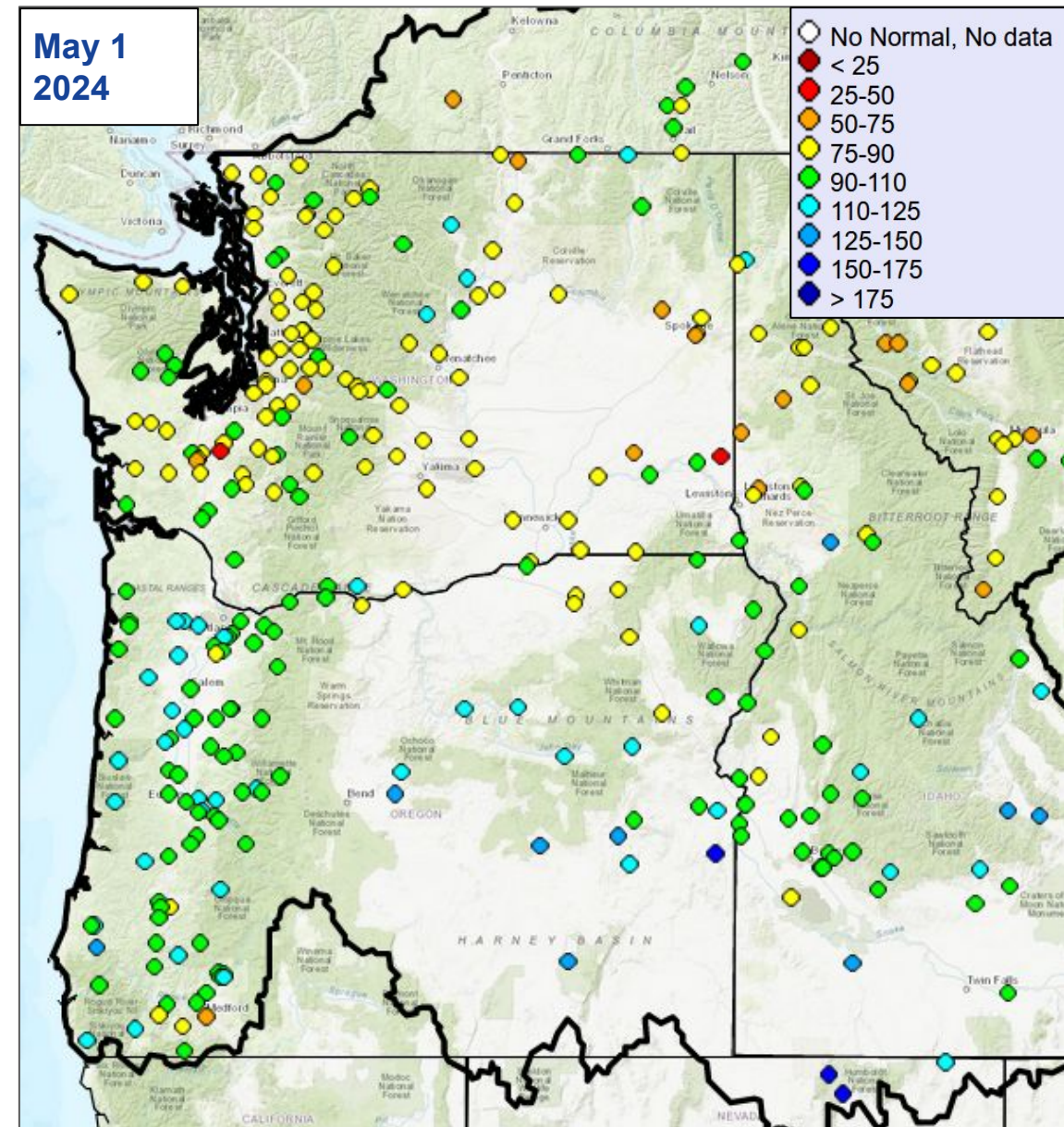
Lower Columbia Basin

The Dalles	85	0
------------	----	---



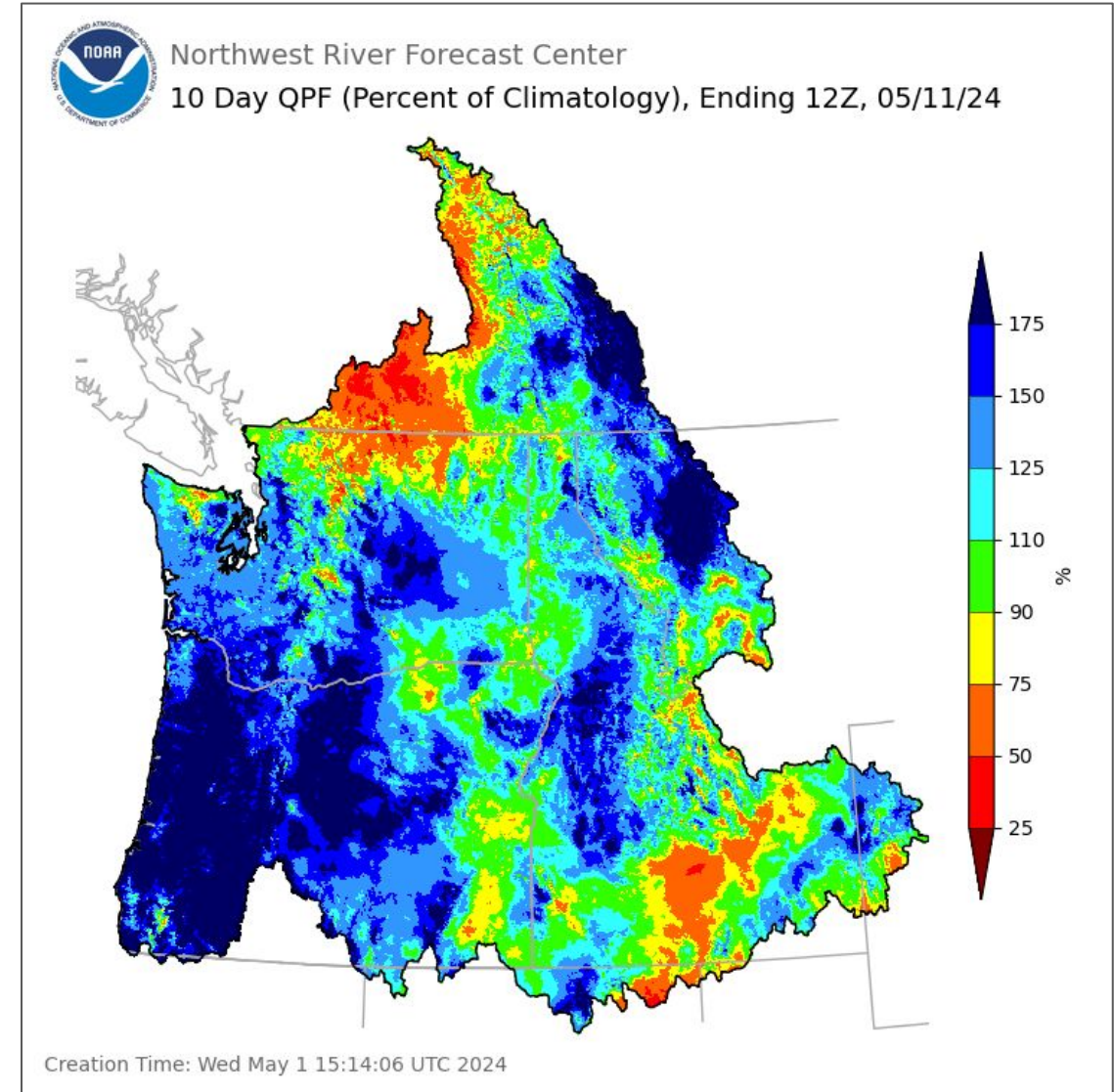
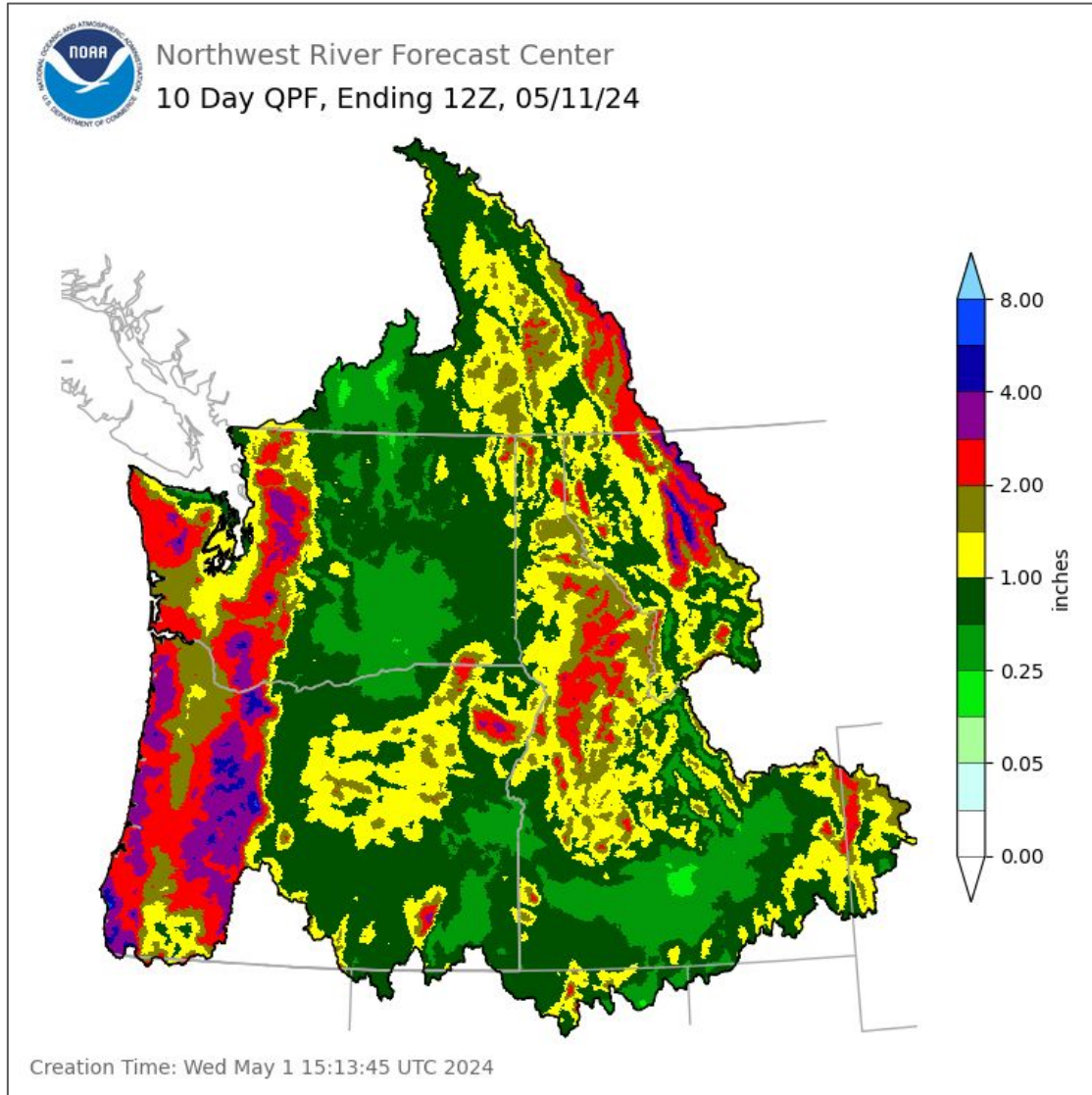
Water Year to Date Natural Observed Runoff

% Normal Runoff Oct 1 - May 1		
<u>Washington</u>		
		<u>Δ since Apr 3</u>
Skagit near Mt Vernon	80	-2
Dungeness near Sequim	77	-1
Chehalis at Porter	87	-3
Okanogan at Malott	79	0
Methow near Pateros	122	-3
Yakima at Parker	84	0
Walla Walla near Touchet	77	-7
<u>Oregon</u>		
Willamette at Salem	97	-5
Rogue at Raygold	100	-2
Umatilla at Pendleton	83	-11
Grande Ronde at Troy	90	-2
Crooked near Prineville	147	-16
Owyhee Dam	159	48





10 Day Precipitation Forecast used in ESP10



Quantitative Precipitation Forecast (QPF) Sources:
Days 1 - 2 NWS Weather Forecast Offices (WFO) in the US, WPC in BC.
Days 3 - 7 NWS Weather Prediction Center (WPC).
Days 8 - 10 NWS National Blend of Models (NBM).

ESP10 Water Supply Forecasts

% Normal Apr-Sep Volume

Upper Columbia Basin

Δ since Apr 3

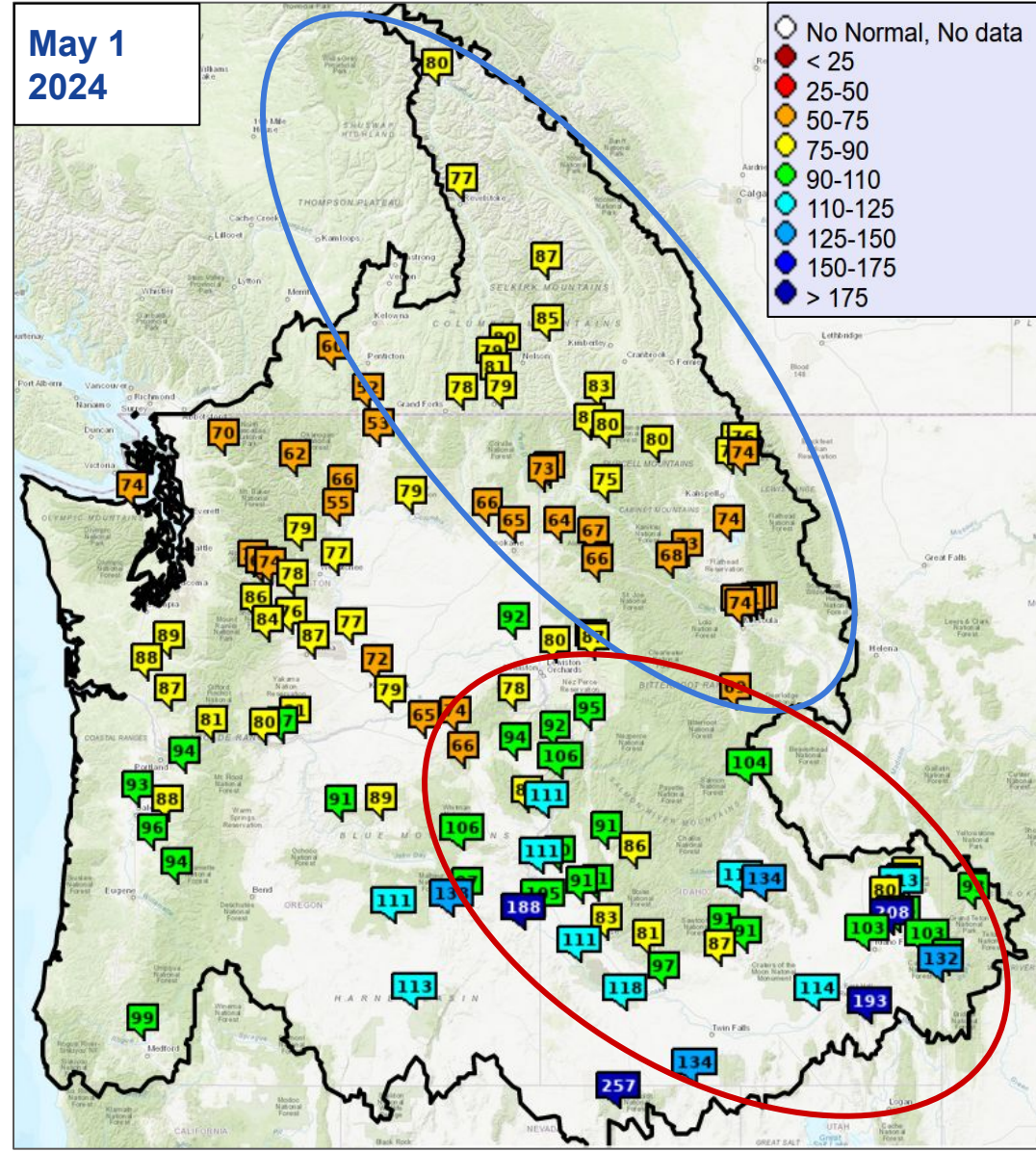
Mica	80	3
Duncan	87	3
Queens Bay	85	0
Libby	80	-1
Hungry Horse	74	-1
Grand Coulee	79	-2

Snake River Basin

American Falls	114	-1
Lucky Peak	83	-11
Dworshak	71	-5
Lower Granite	92	3

Lower Columbia Basin

The Dalles	80	-1
------------	----	----



Natural Water Supply Forecasts

% Normal Apr-Sep Volume

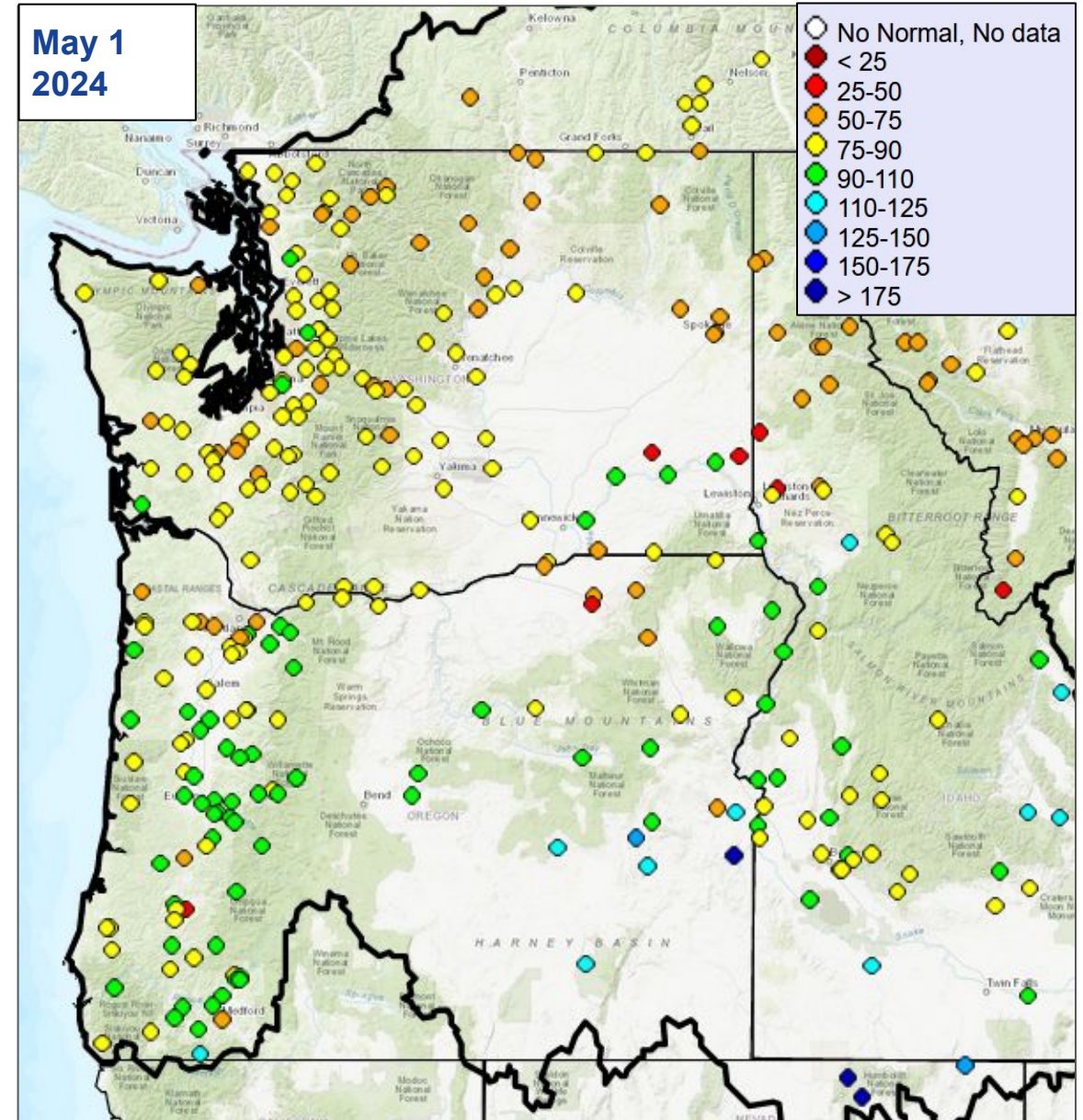
Washington

Δ since Apr 3

Skagit near Mt Vernon	71	1
Dungeness near Sequim	74	0
Chehalis at Porter	85	11
Okanogan at Malott	53	-2
Methow near Pateros	66	9
Yakima at Parker	82	-1
Walla Walla near Touchet	56	-37

Oregon

Willamette at Salem	87	9
Rogue at Raygold	101	0
Umatilla at Pendleton	68	-36
Grande Ronde at Troy	78	-19
Crooked near Prineville	103	-33
Owyhee Dam	187	22





ESP10 Water Supply Forecast

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2024

Official Water Supply

ESP with 10 Days QPF Ensemble: 2024-05-01 Issued: 2024-05-01

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	71538	75710	80	83502	94166
APR-JUL	60420	64525	79	71142	81933
APR-AUG	66809	70988	80	78743	89196
JAN-SEP	90876	95048	82	102840	115946
JAN-JUL	79758	83863	81	90480	103714
OCT-SEP	104130	108302	82	116094	132314

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2024-05-01 Issued: 2024-05-01

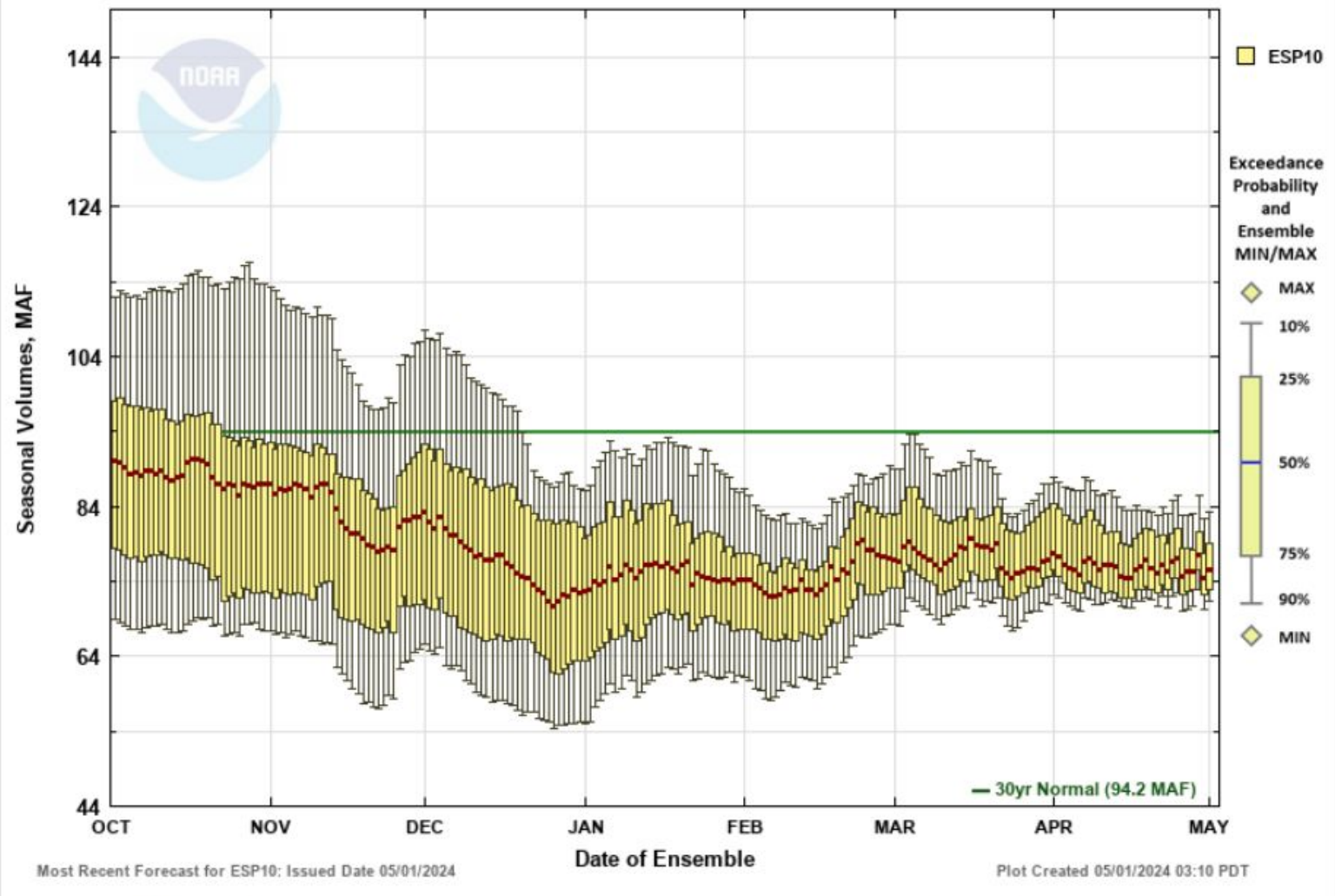
APR-SEP	70456	75404	80	82967	94166
APR-JUL	59242	64165	78	71619	81933
APR-AUG	66235	70821	79	78350	89196
JAN-SEP	89793	94742	82	102305	115946
JAN-JUL	78579	83502	81	90956	103714
OCT-SEP	103047	107996	82	115559	132314

Reference

ESP with 0 Days QPF Ensemble: 2024-05-01 Issued: 2024-05-01

APR-SEP	70063	74403	79	82057	94166
APR-JUL	58317	62702	77	70865	81933
APR-AUG	65701	69825	78	77479	89196
JAN-SEP	89401	93741	81	101395	115946
JAN-JUL	77654	82040	79	90202	103714
OCT-SEP	102655	106995	81	114649	132314

Water Supply Forecasts COLUMBIA - THE DALLES DAM Period APR to SEP -- Water Year 2024

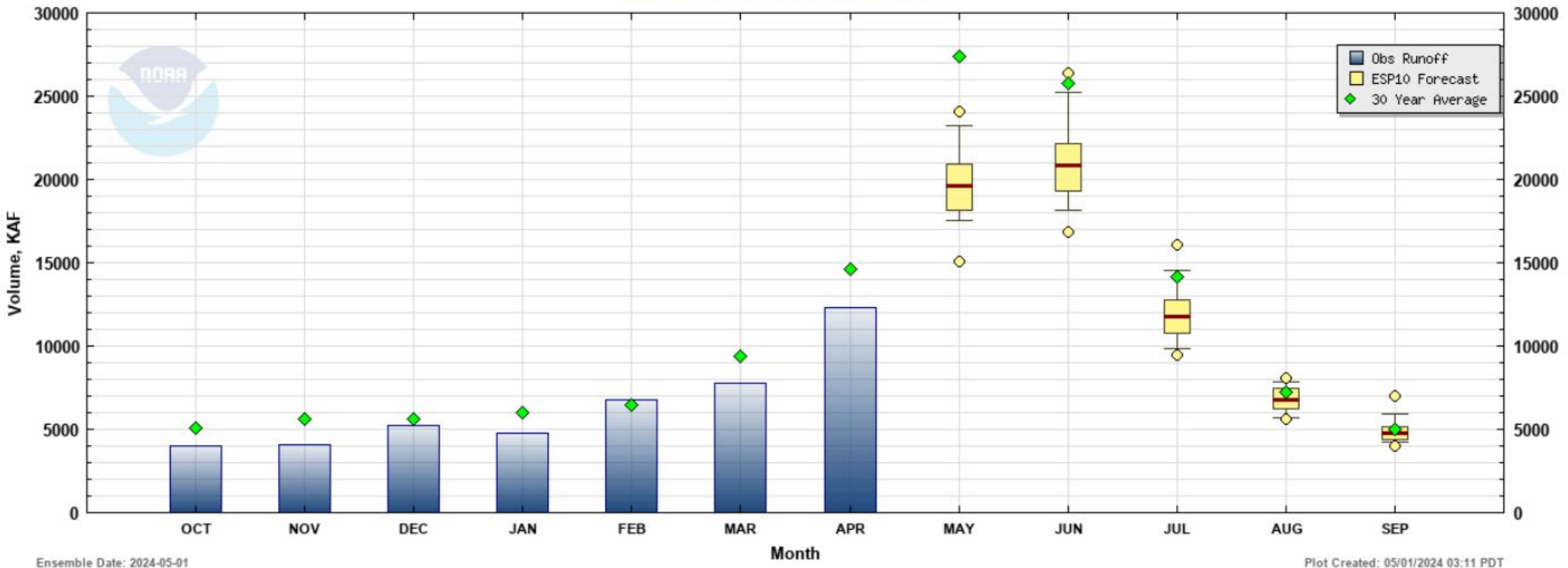


Max Scale
 Scale To Data
 Scale To Last 45 Days
 Show Min/Max Ensemble Volume
 Show Tooltips Help



ESP10 Monthly Water Supply Forecast

Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2024
(TDAO3) COLUMBIA - THE DALLES DAM



Ensemble Date: 2024-05-01

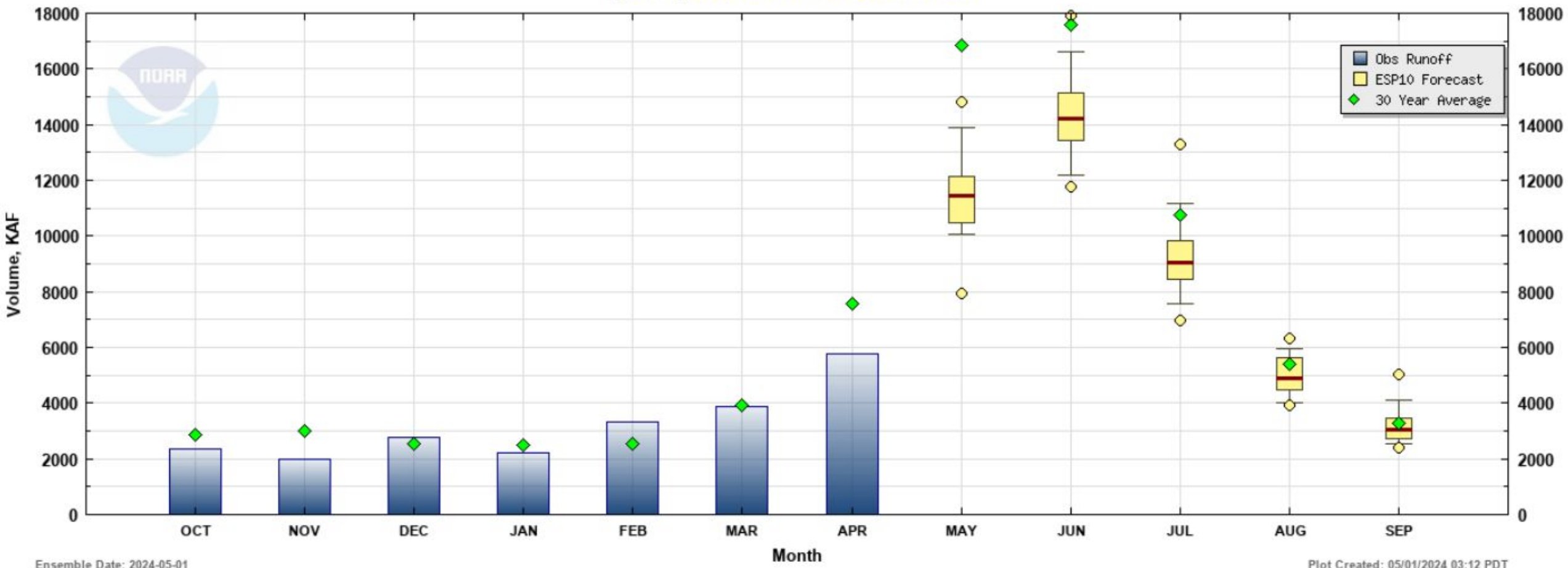
Plot Created: 05/01/2024 03:11 PDT

nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=TDAO3



ESP10 Monthly Water Supply Forecast

Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2024
(GCDW1) COLUMBIA - GRAND COULEE DAM



Ensemble Date: 2024-05-01

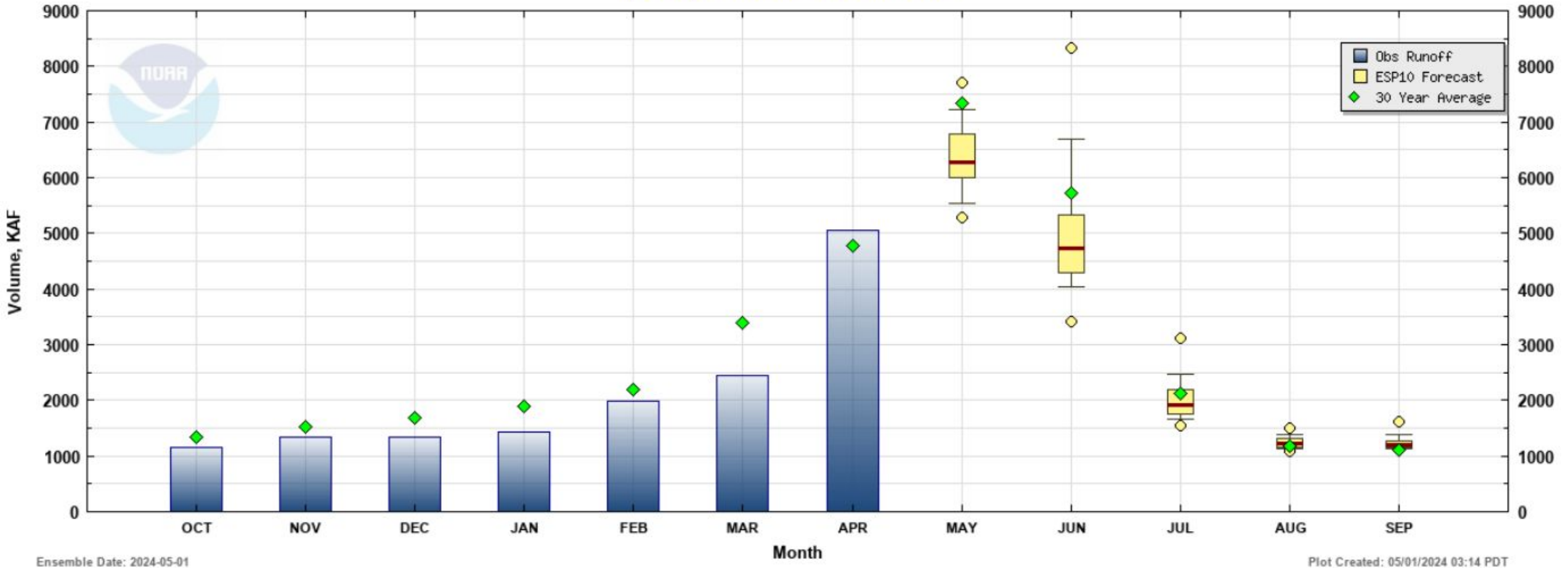
Plot Created: 05/01/2024 03:12 PDT

nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=GCDW1



ESP10 Monthly Water Supply Forecast

Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2024
(LGDW1) SNAKE - LOWER GRANITE DAM



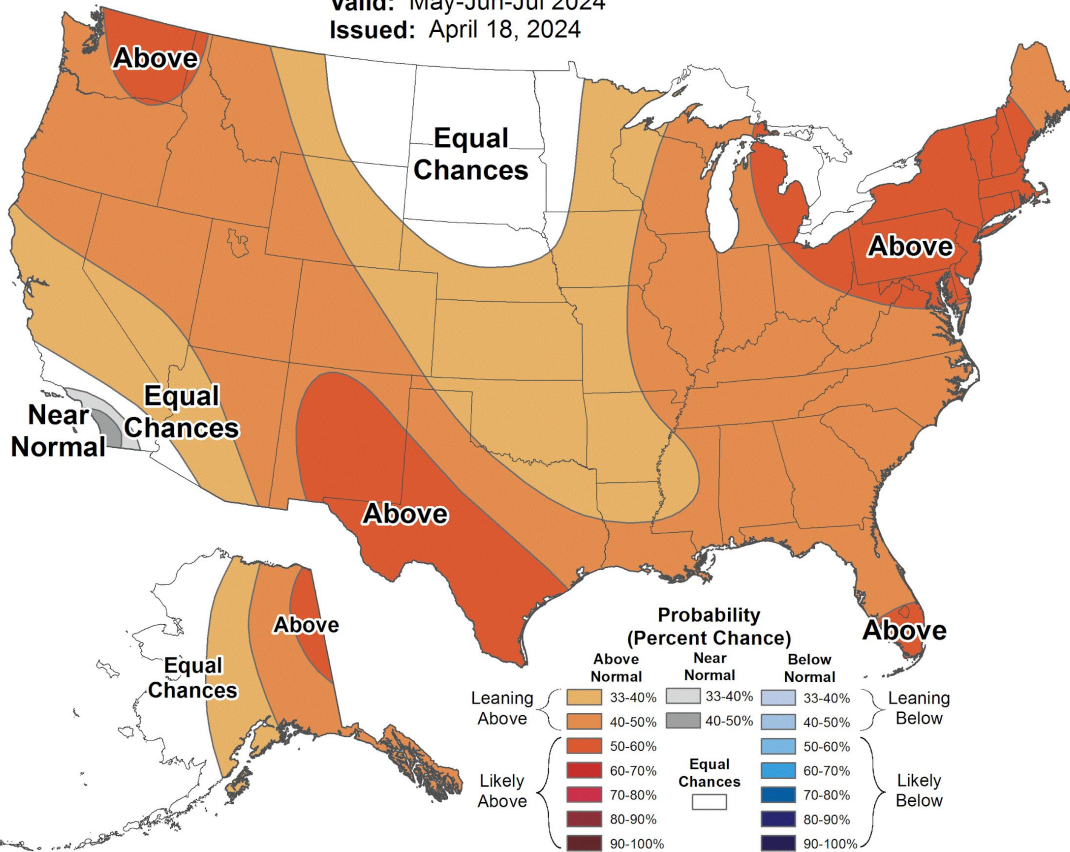
Ensemble Date: 2024-05-01

Plot Created: 05/01/2024 03:14 PDT

nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=LGDW1

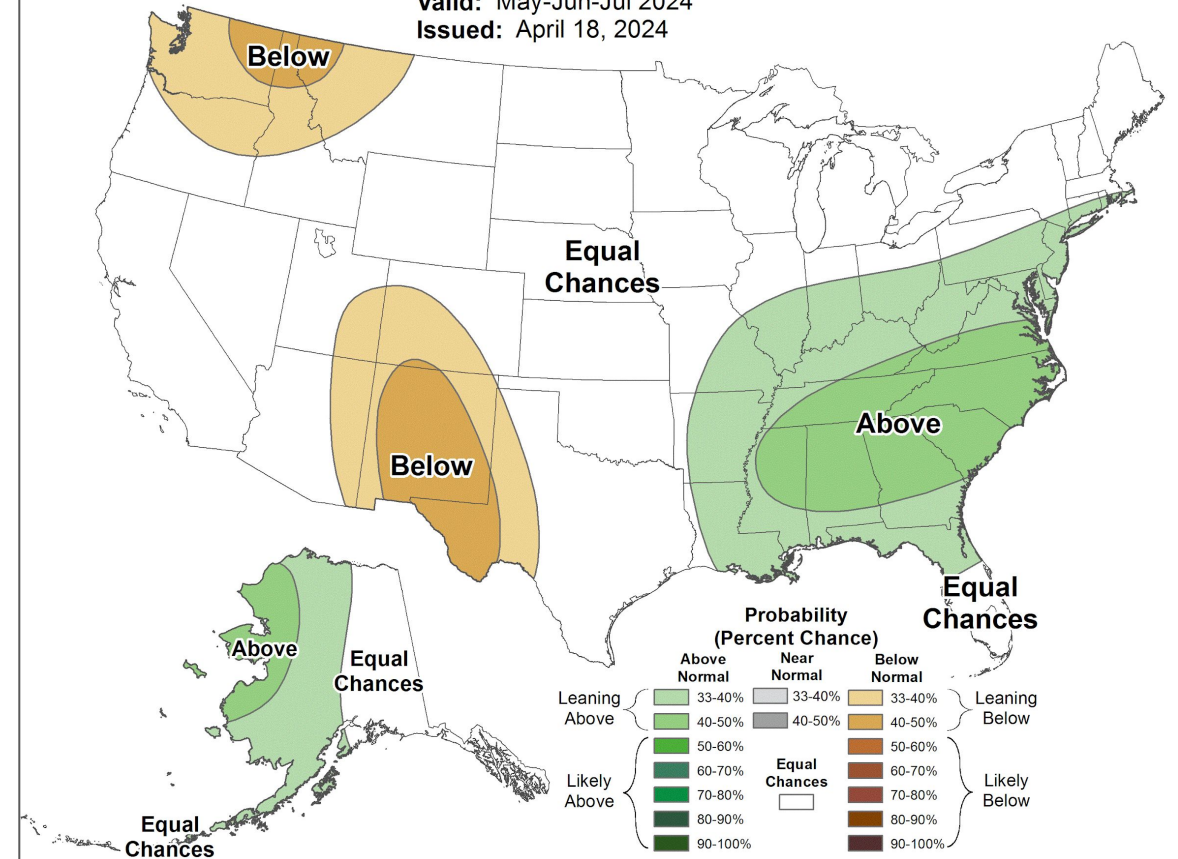
Seasonal Temperature Outlook

Valid: May-Jun-Jul 2024
 Issued: April 18, 2024



Seasonal Precipitation Outlook

Valid: May-Jun-Jul 2024
 Issued: April 18, 2024



ENSO prediction for beyond this water year

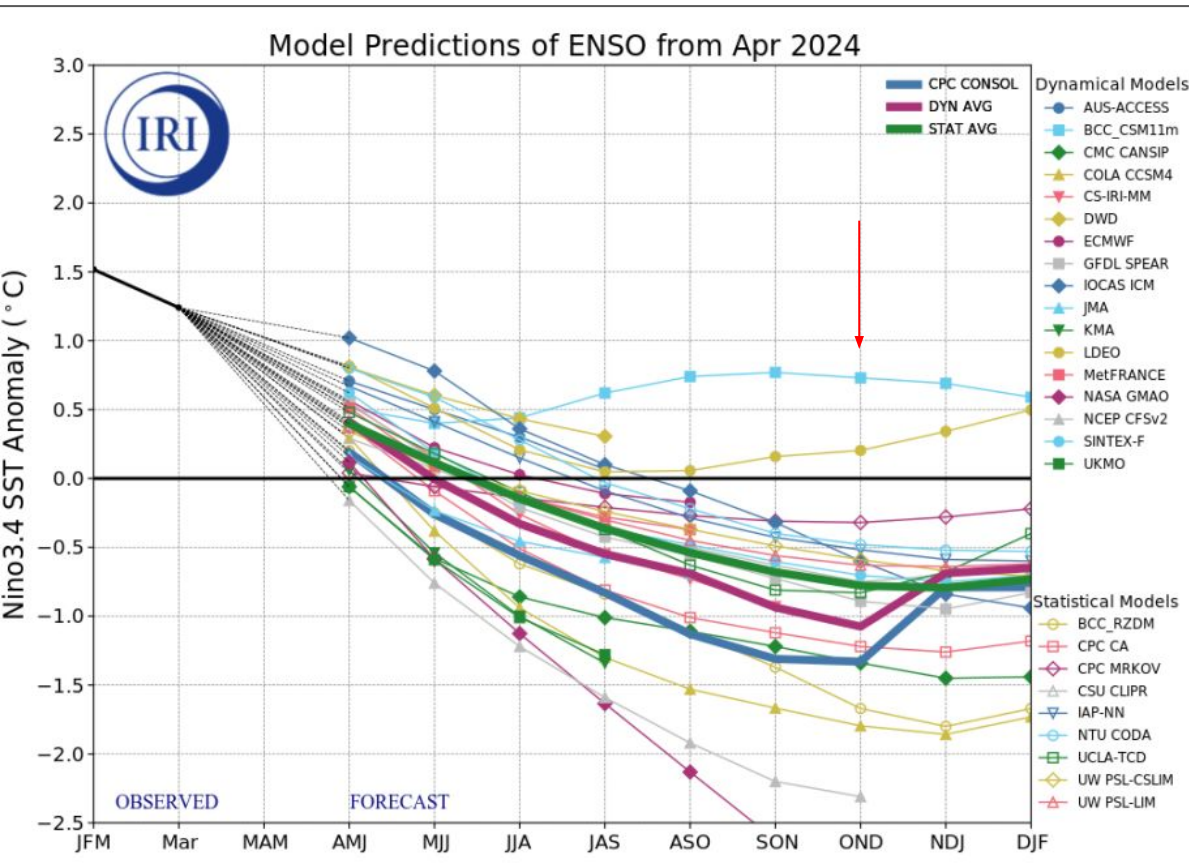
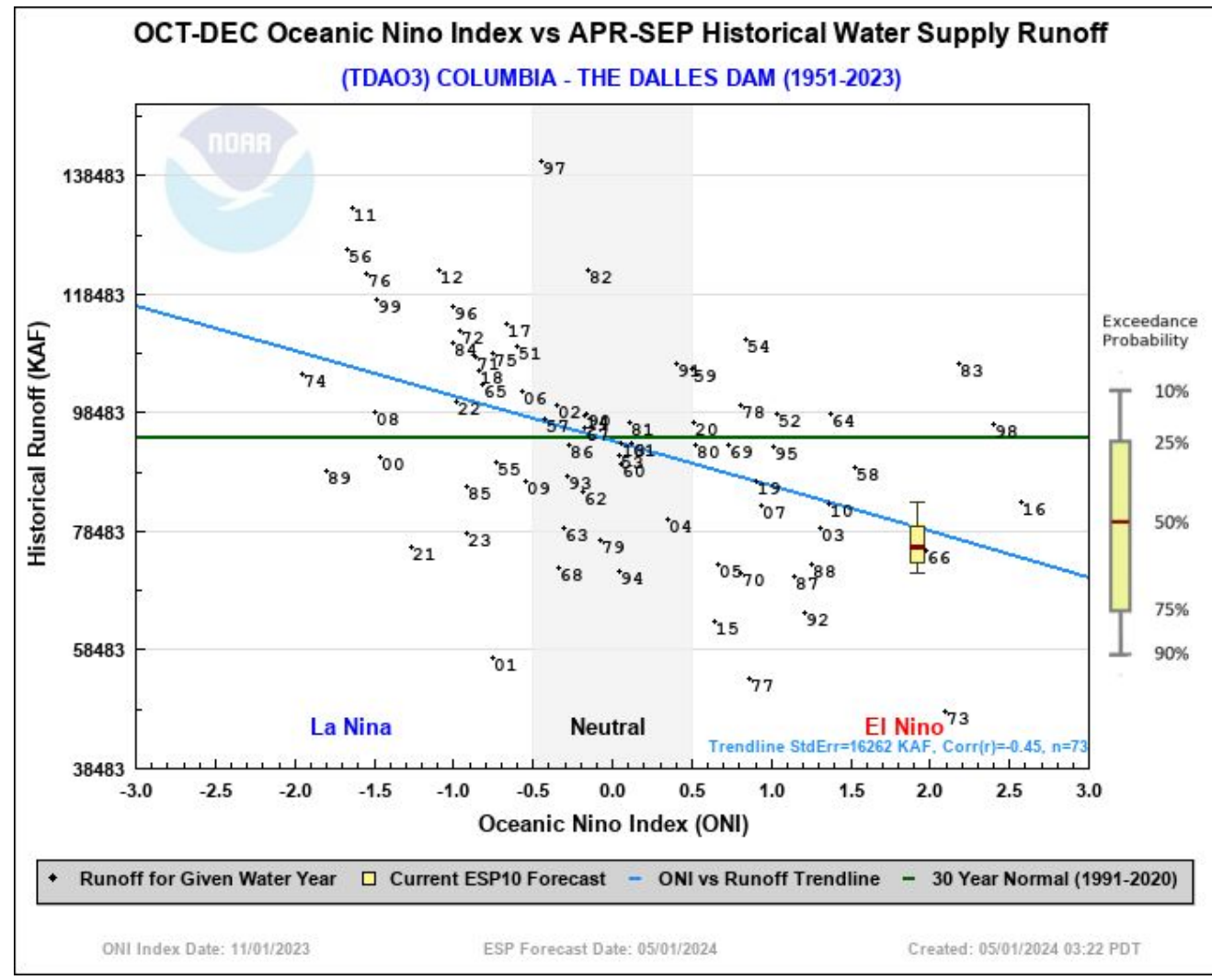


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 19 April 2024).





Key Takeaways

- April precipitation was generally below normal except for the Canadian portion of the Columbia and central Idaho where it was near and above normal, respectively.
- Southern basins have experienced snowmelt leading to diminishing snowpacks.
- Water supply forecasts are largely correlated with seasonal peak snowpack resulting in well below normal forecasts in the north (Canadian portion of the Columbia River Basin) and well above normal forecasts in the south.



Schedule for Live Water Supply Briefings

Jun

6

All presentations held at 10:00 am Pacific Time
unless noted otherwise

[Click here for Registration](#)



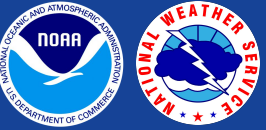
nwrfc.watersupply@noaa.gov



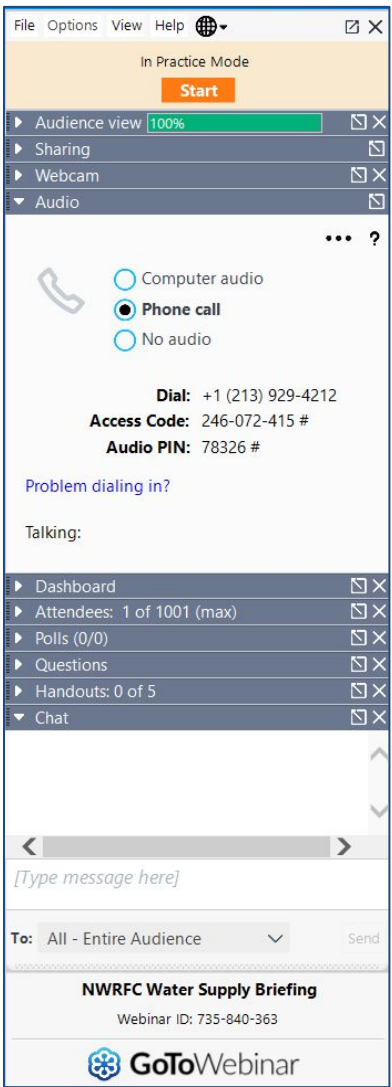
(503) 326-7291



nwrfc.noaa.gov



Questions?



Type questions in the webinar chat box or use the 'Raise Hand' function.

To ask a question using your phone, enter the AUDIO PIN followed by the # sign.

The AUDIO PIN was provided when you logged into the webinar. If you need to enter the PIN after you are connected, try #PIN#.

