



Northwest River Forecast Center

# March 2025 Water Supply Briefing

Amy Burke, Senior Hydrologist

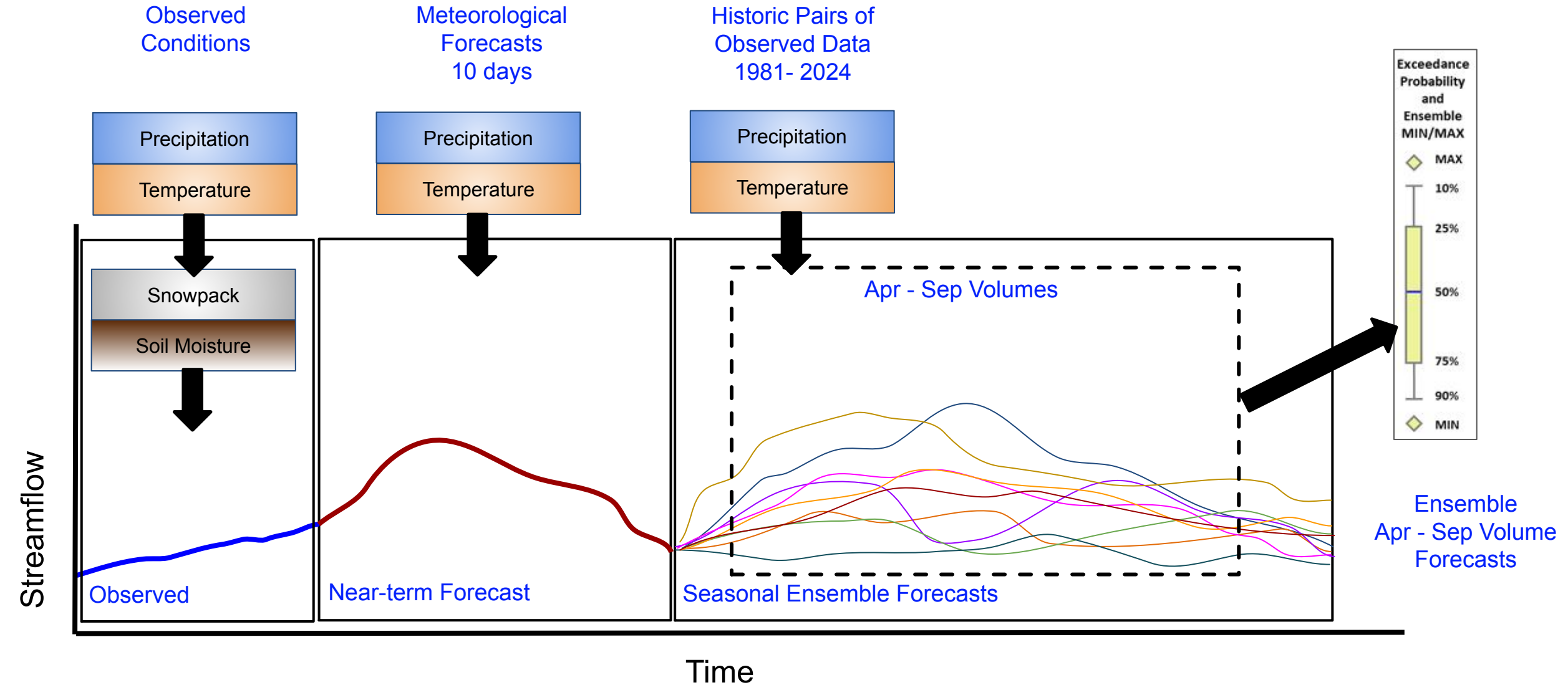
[NWRFC.watersupply@noaa.gov](mailto:NWRFC.watersupply@noaa.gov)

March 6, 2025

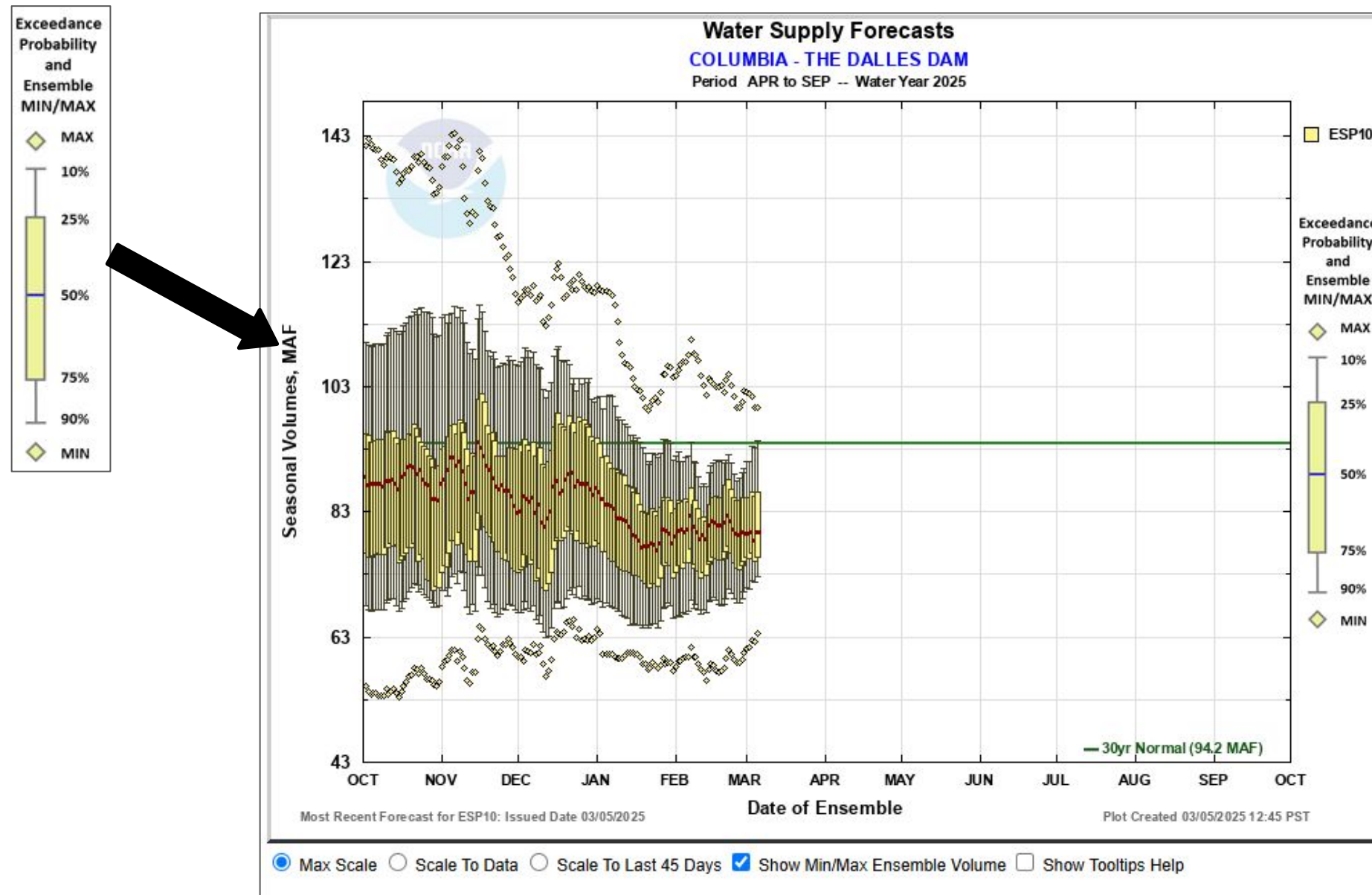


- February was overall colder and wetter than normal but still saw snowmelt in portions of the domain.
- Snowpack has decreased in percent of average since last month, despite widespread low elevation snow mid month.
- Observed runoff remains a mix of above and below normal conditions.
- Water supply forecasts also shows a mix of conditions with higher percent normal in the southern portion of the domain and lower in the north.

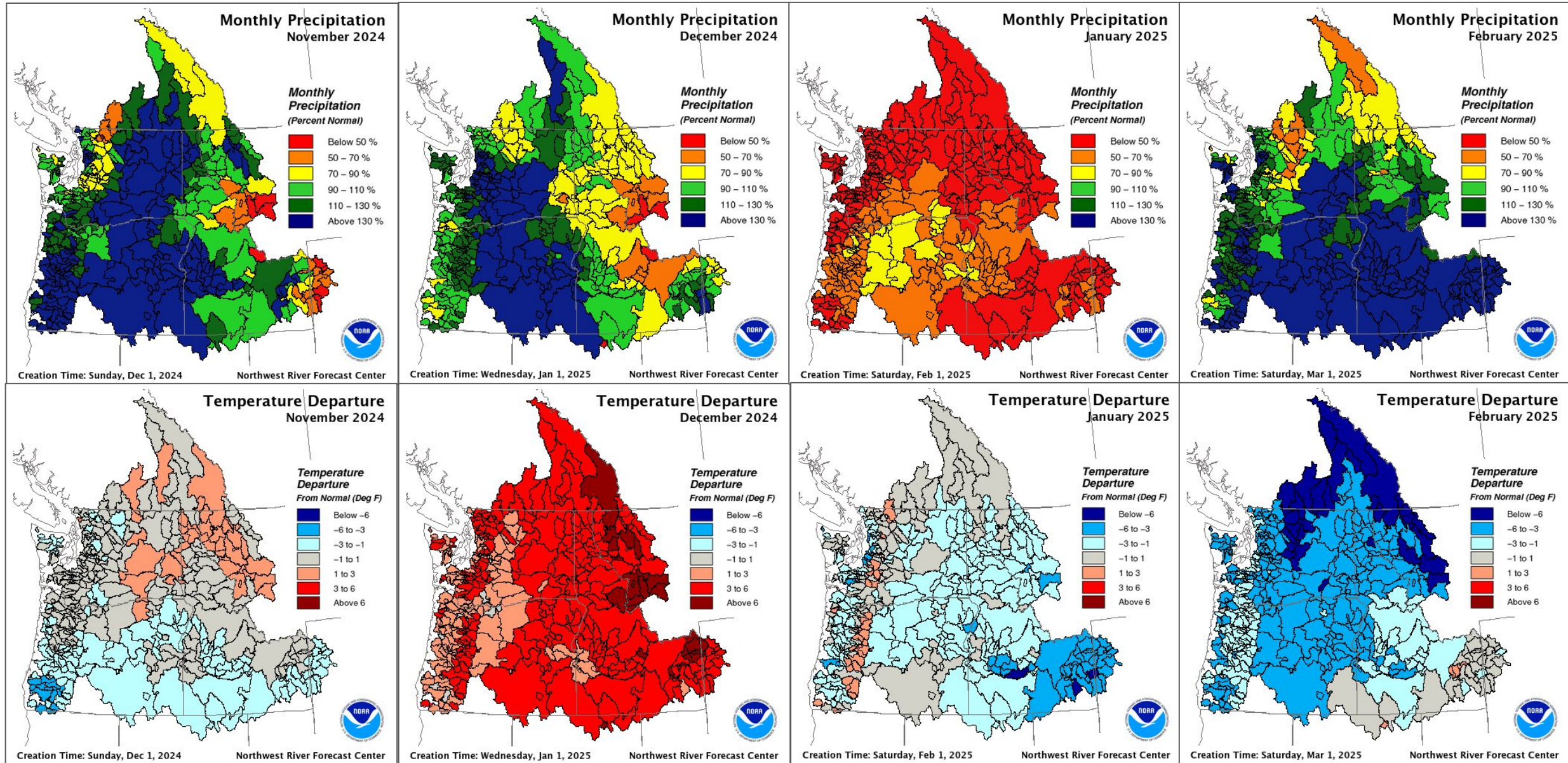
# NWRFC Forecast Technique: Ensemble Streamflow Prediction



# NWRFC Forecast Technique: Ensemble Streamflow Prediction



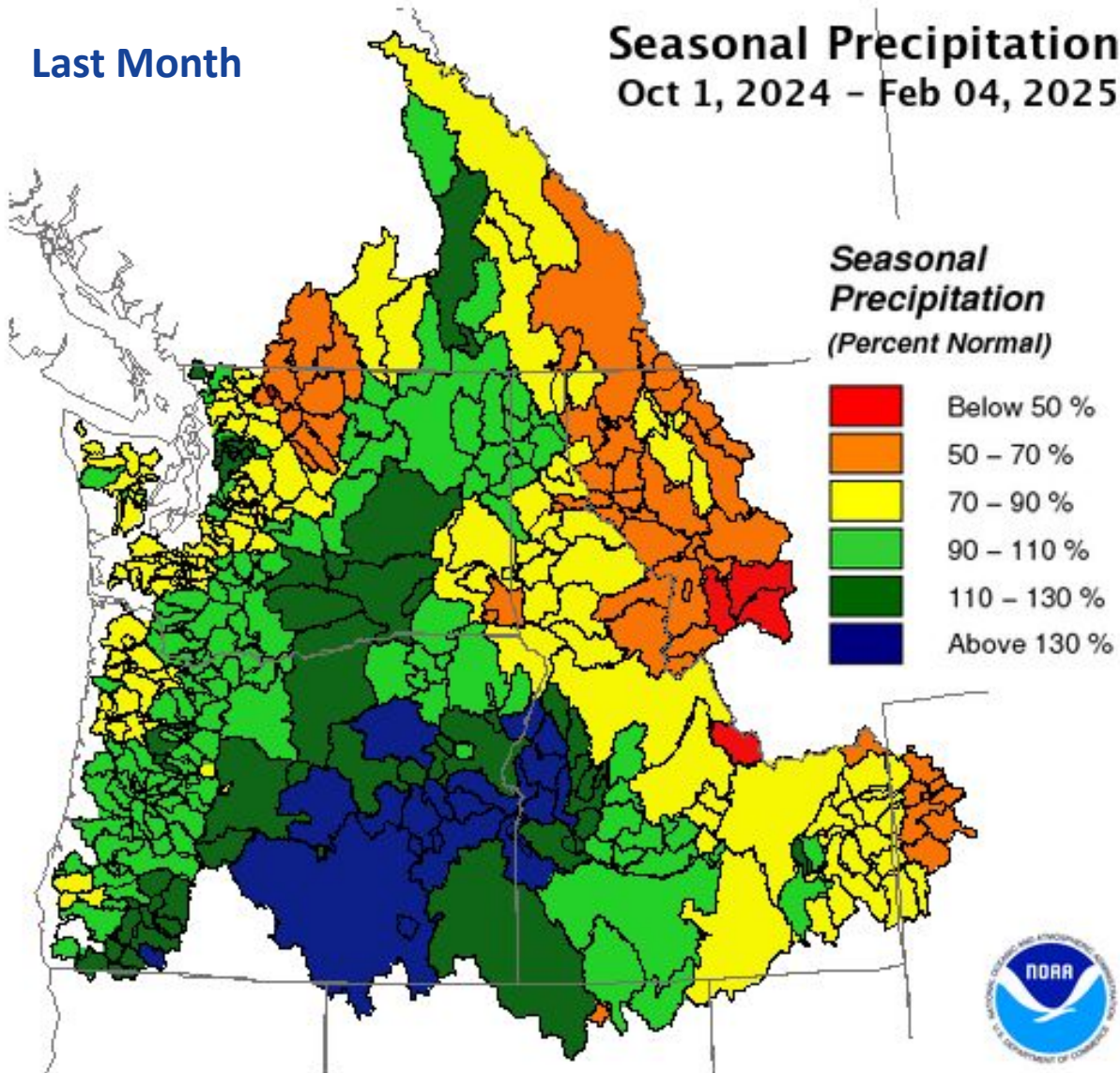
# Observed Monthly Precipitation and Temperature



# Water Year Precipitation

Last Month

**Seasonal Precipitation**  
Oct 1, 2024 - Feb 04, 2025

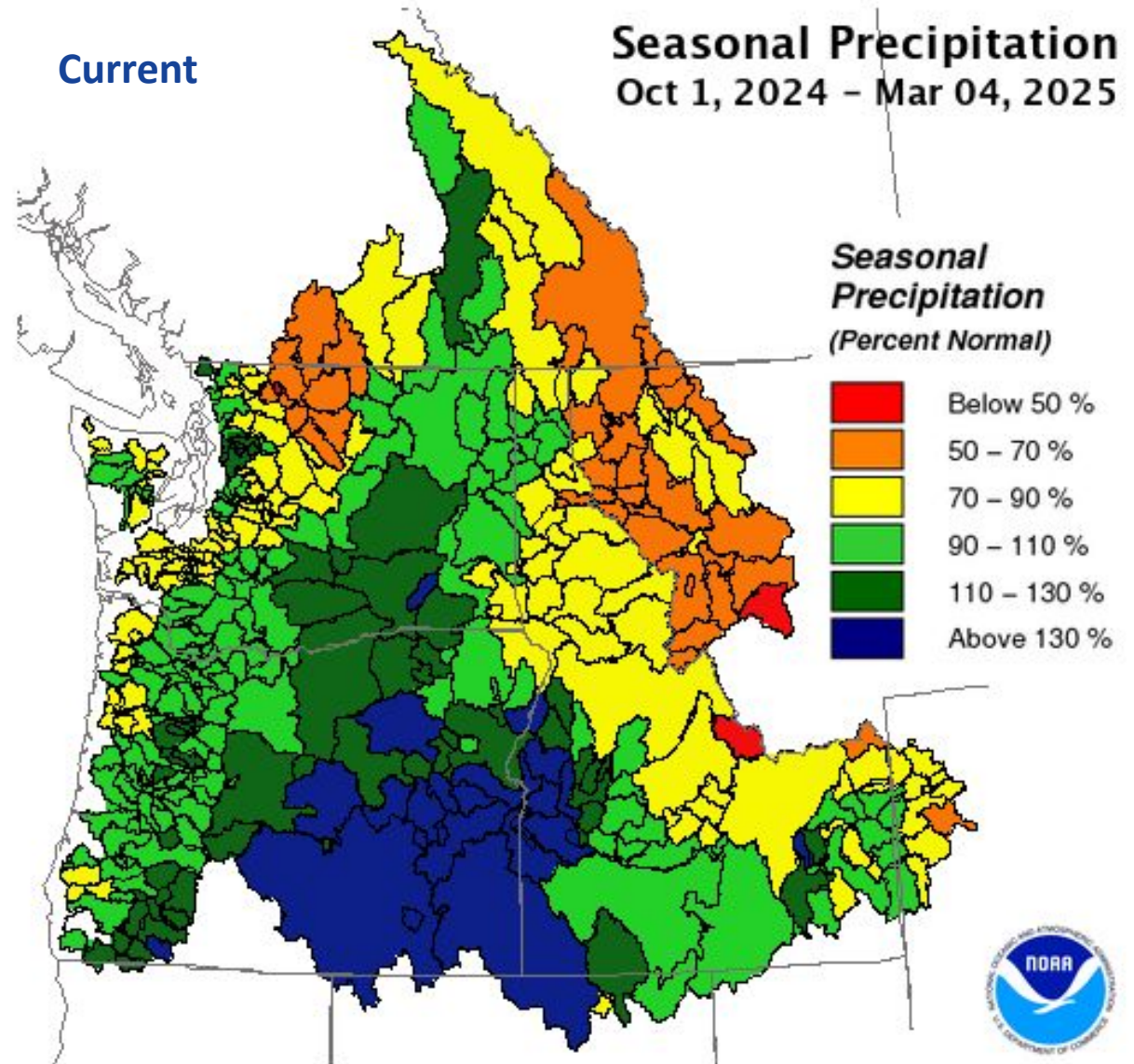


Creation Time: Wednesday, Feb 5, 2025

Northwest River Forecast Center

Current

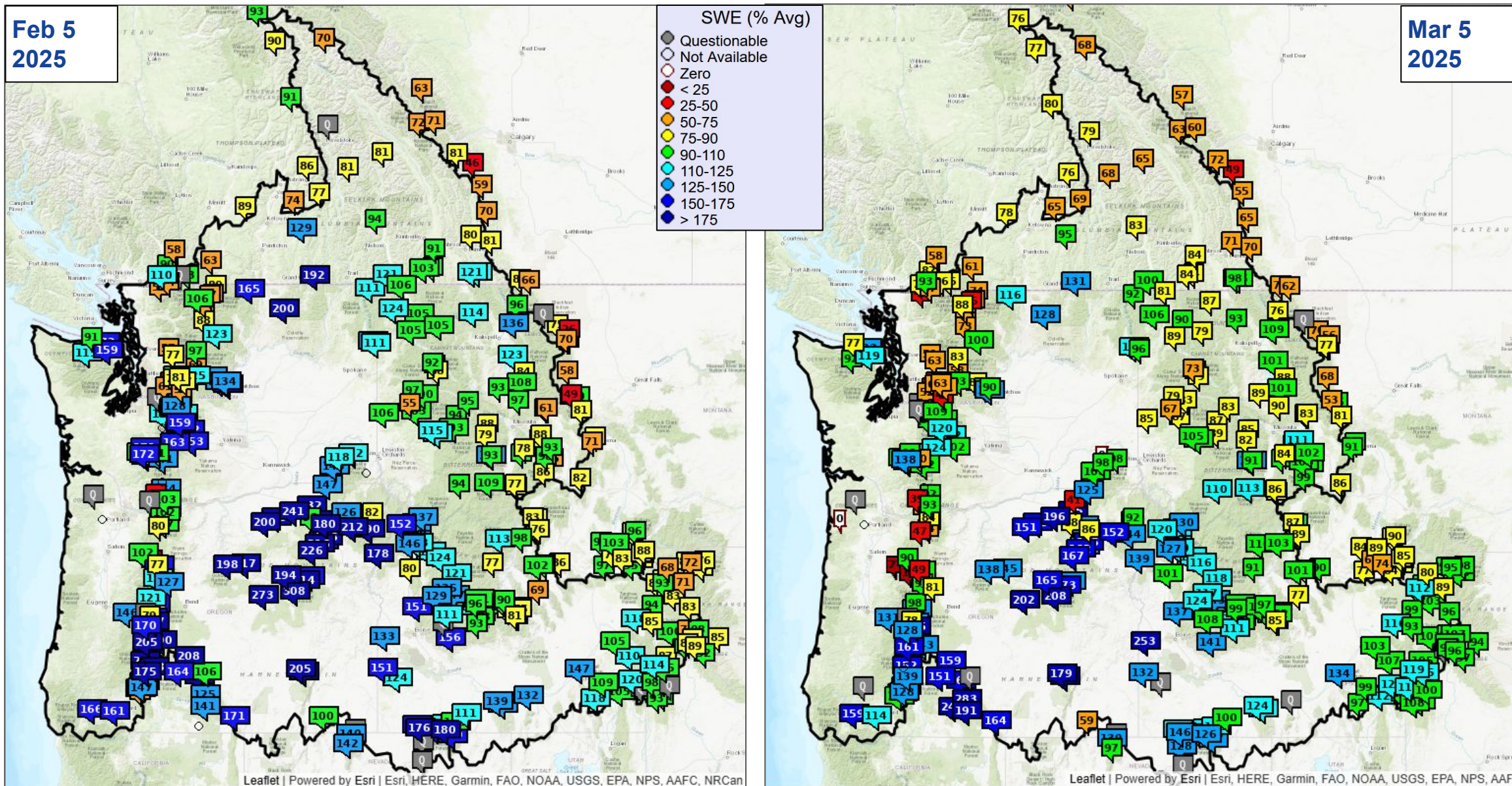
**Seasonal Precipitation**  
Oct 1, 2024 - Mar 04, 2025



Creation Time: Wednesday, Mar 5, 2025

Northwest River Forecast Center

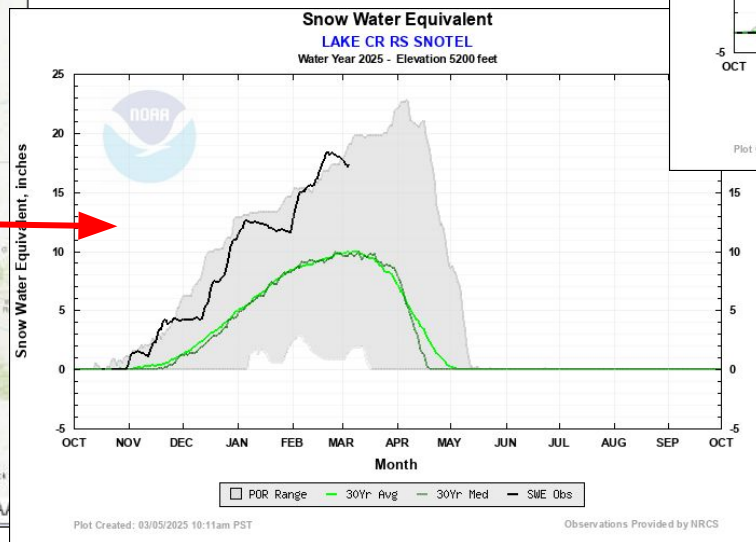
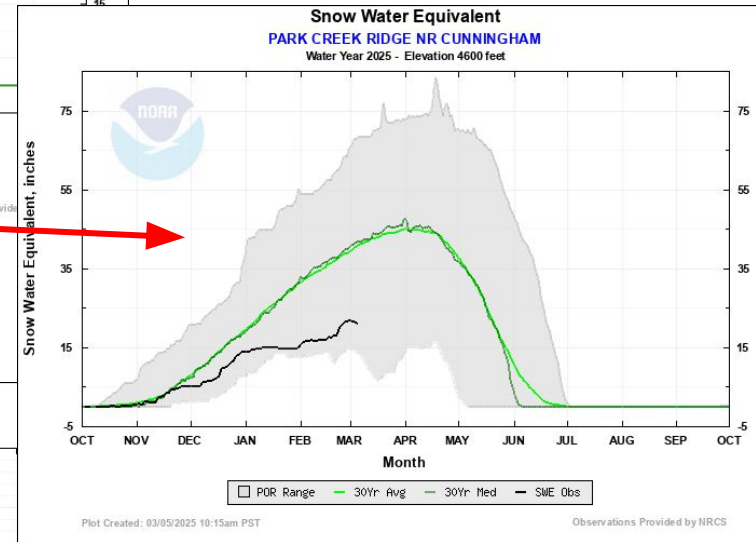
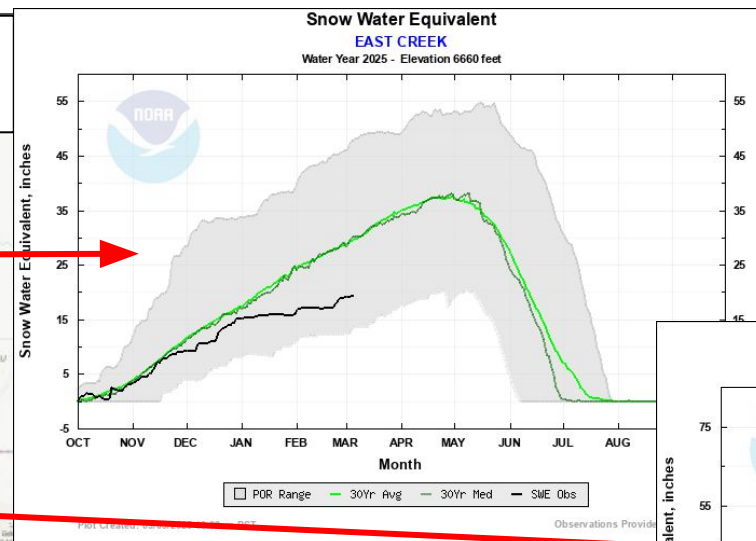
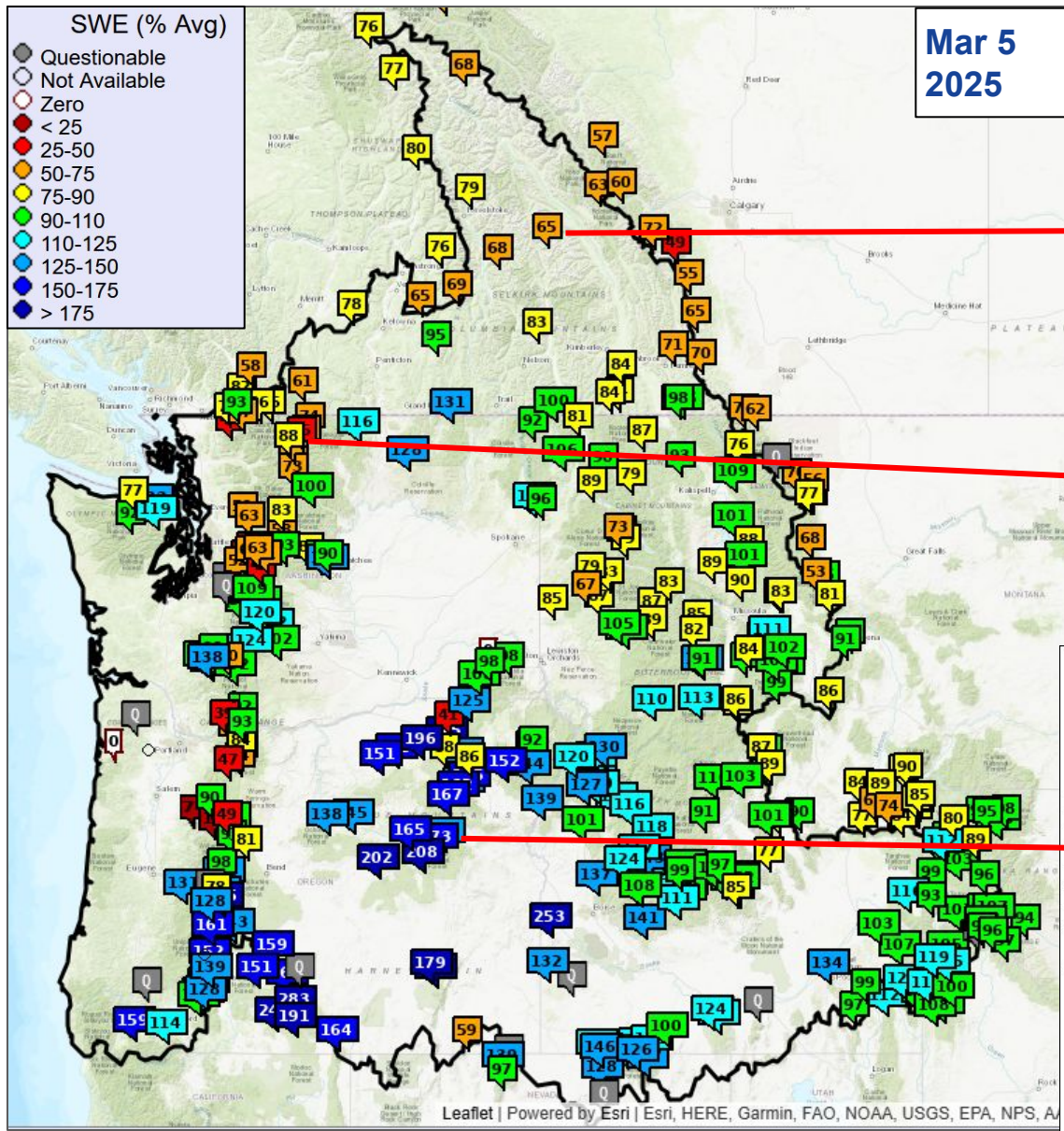
# Snowpack



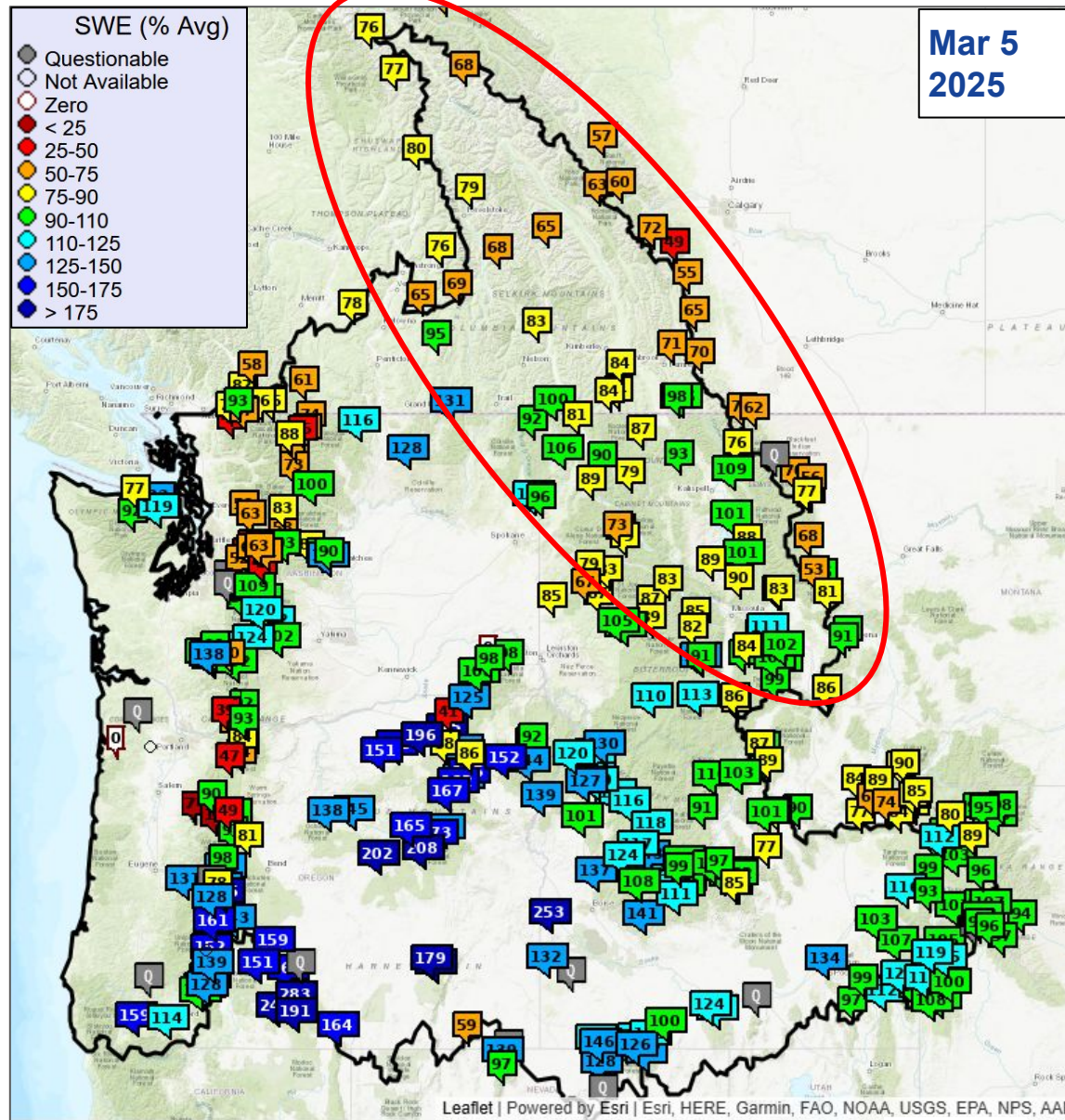
Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

# Snowpack

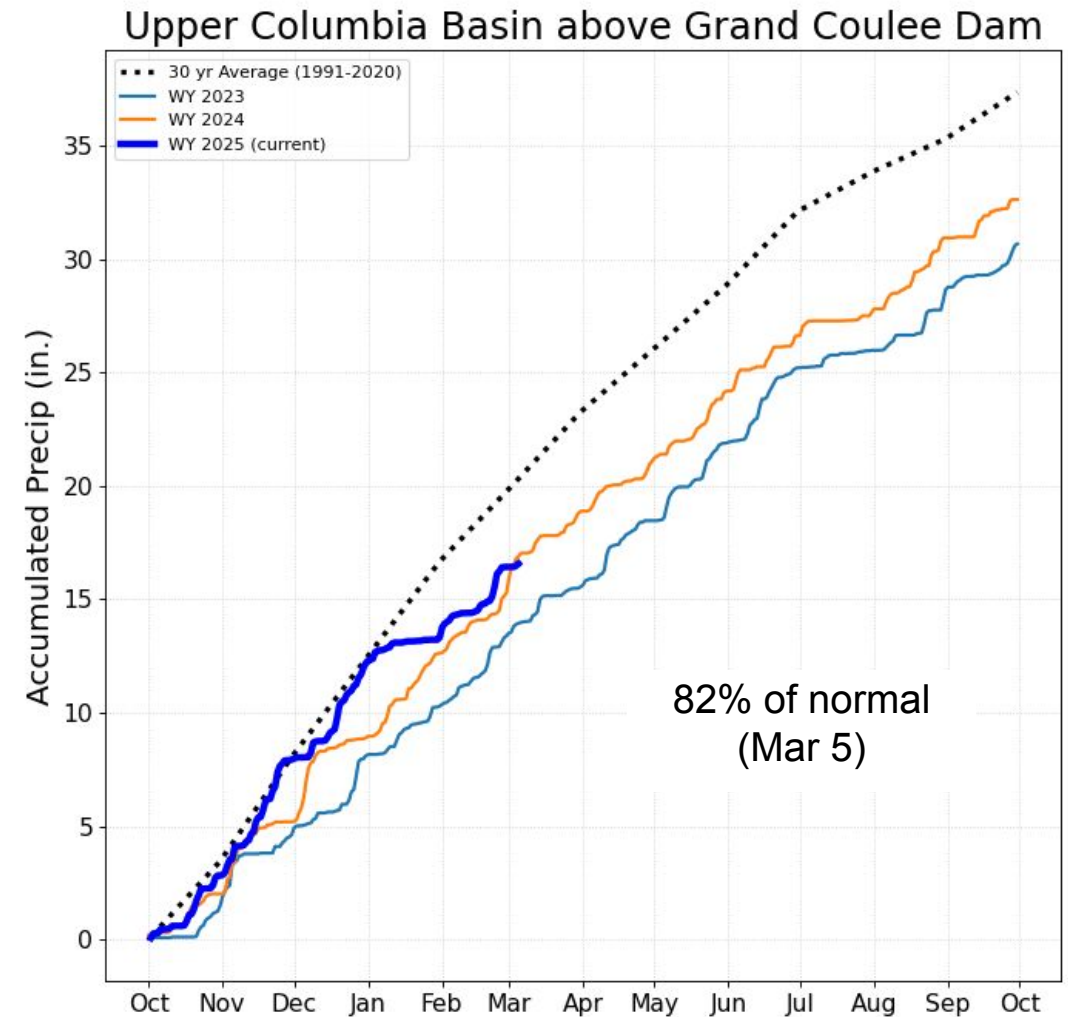
Mar 5  
2025



# Snowpack and Precipitation

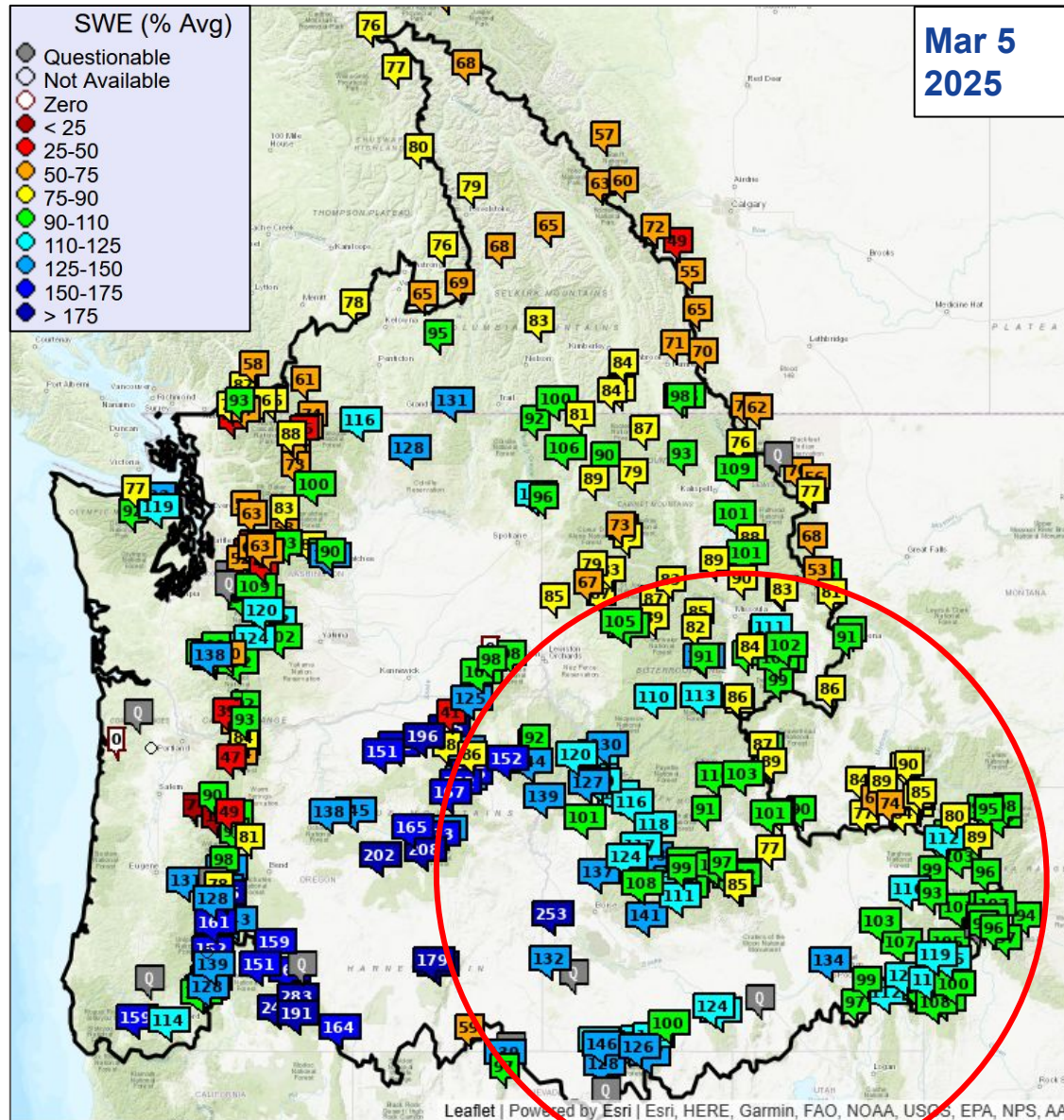


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

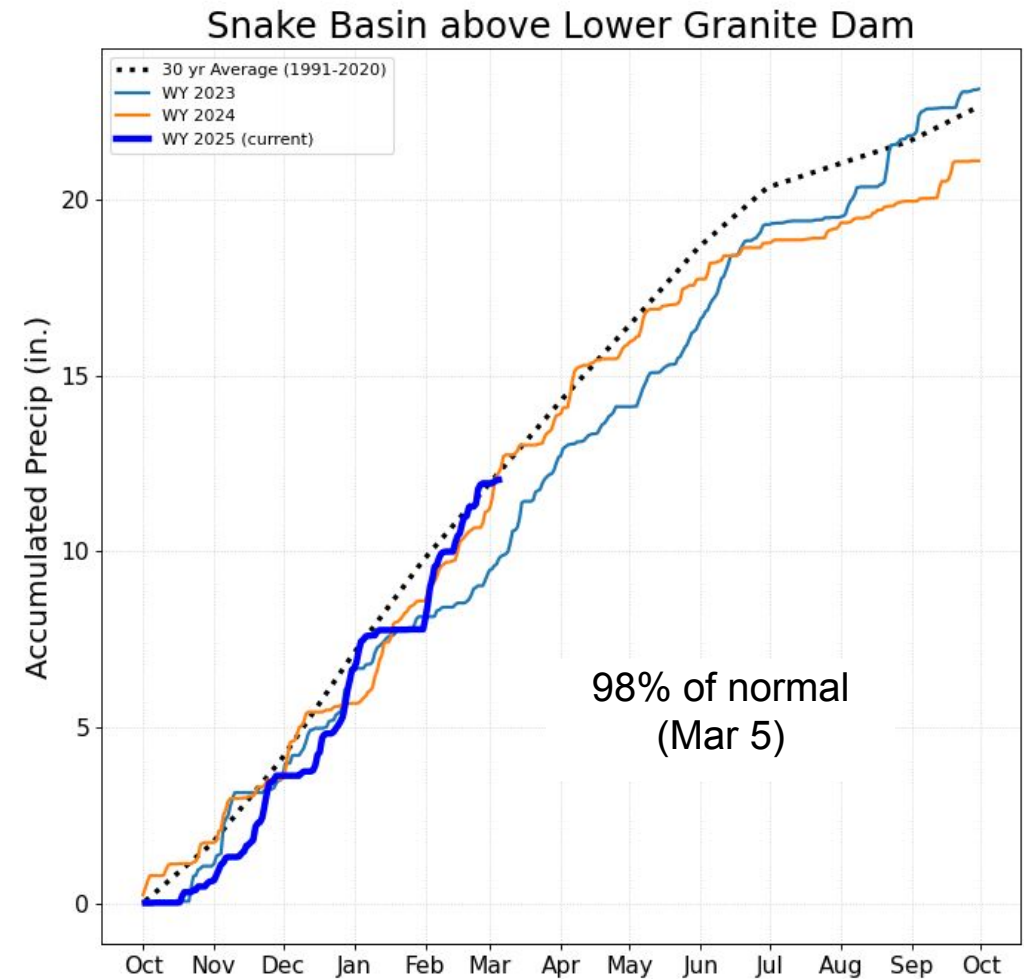


Precip averages from PRISM, OSU and PCIC.

# Snowpack and Precipitation



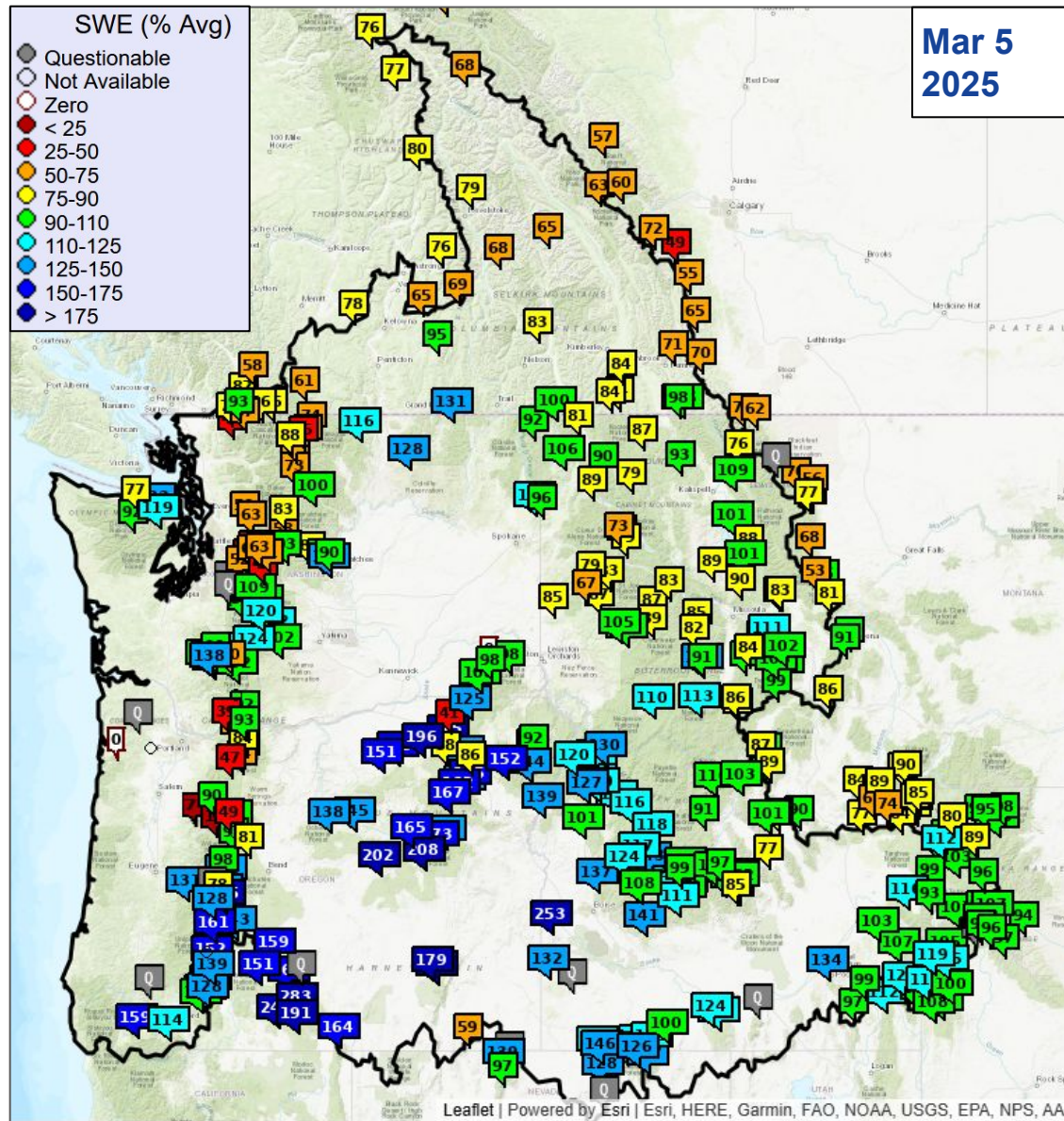
Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.



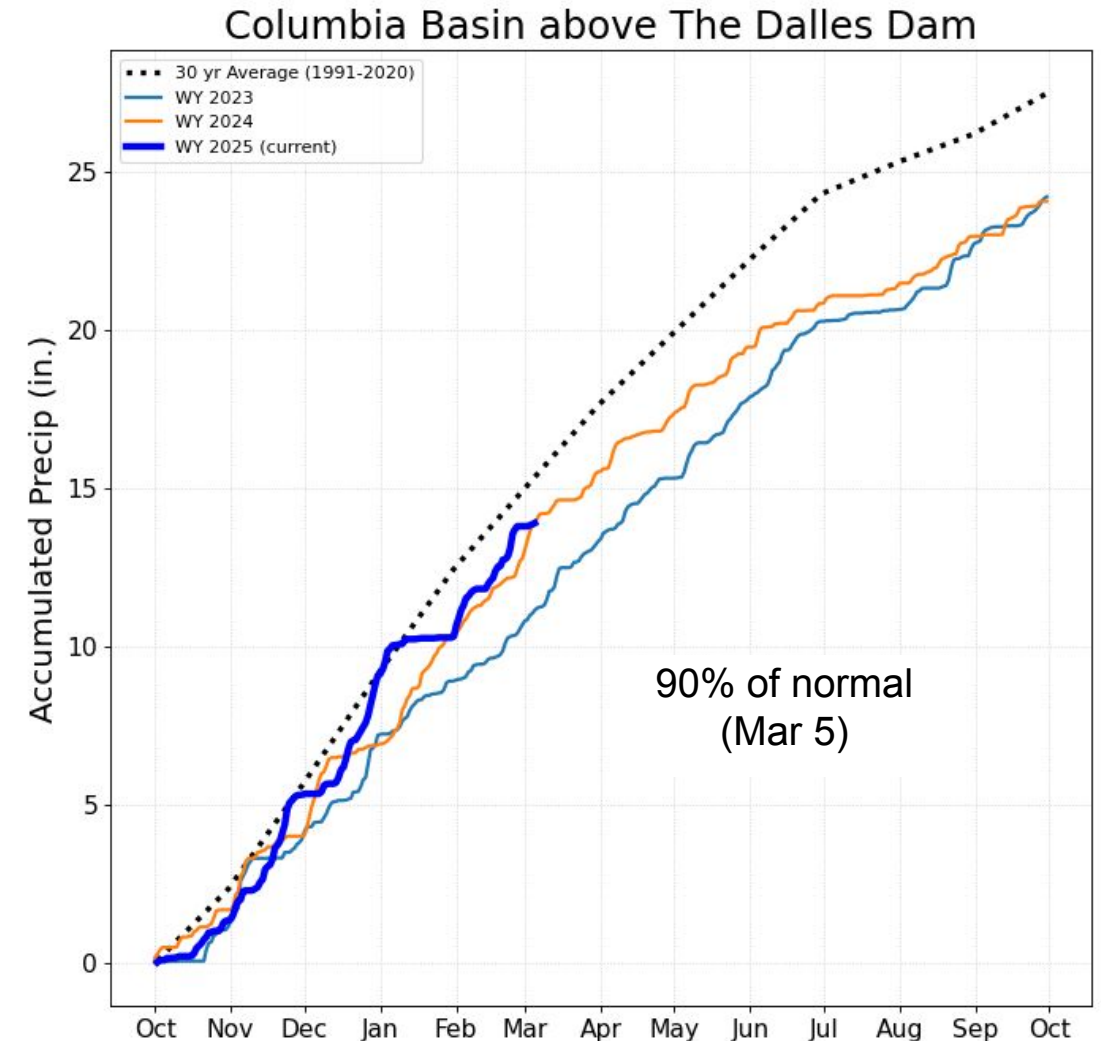
Precip averages from PRISM, OSU and PCIC.



# 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 - Mar 5

## Upper Columbia Basin

Δ since Feb 5

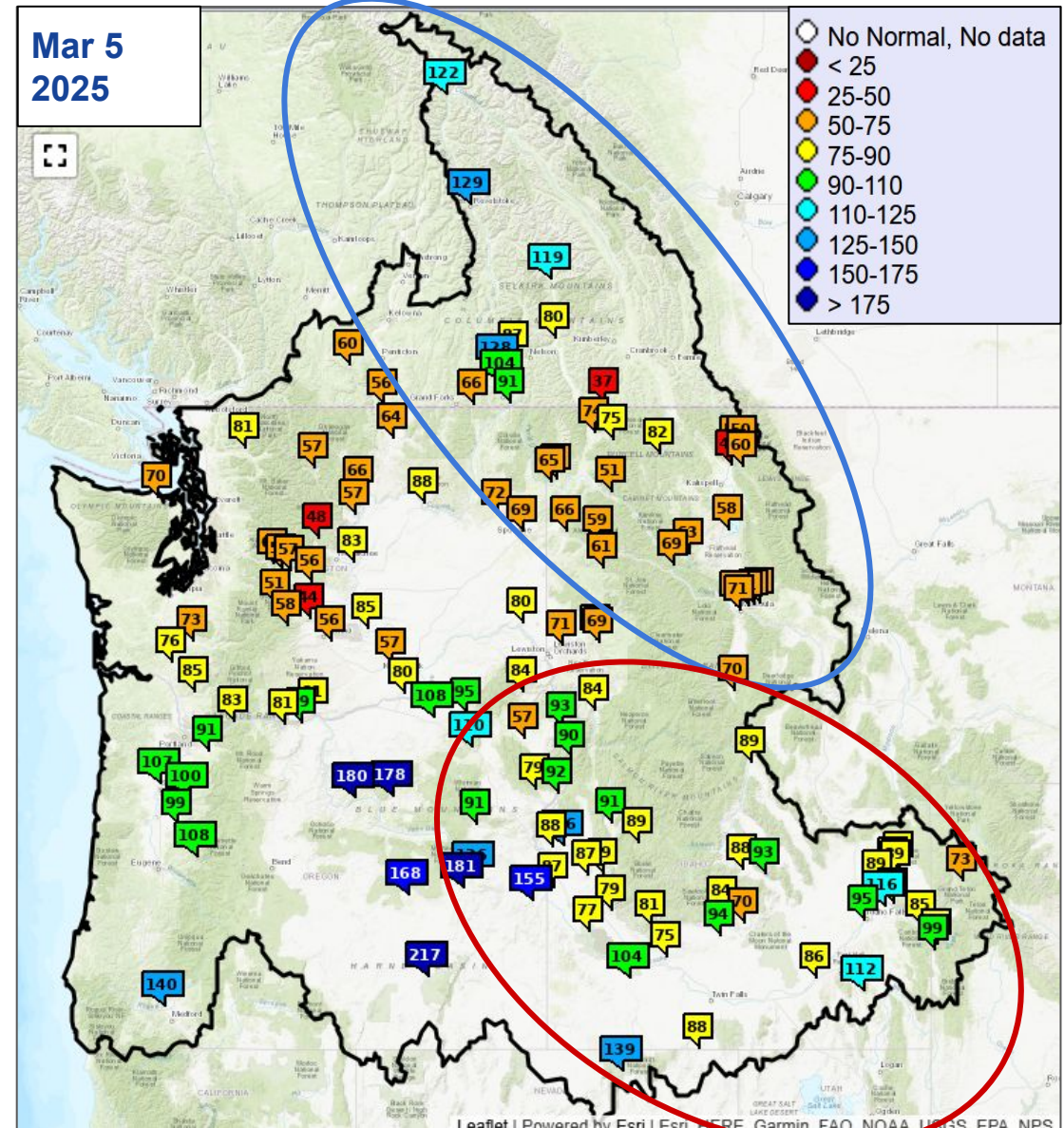
Mica	122	-1
Duncan	119	-5
Queens Bay	80	-3
Libby	82	-2
Hungry Horse	60	0
Grand Coulee	88	-3

## Snake River Basin

American Falls	86	3
Lucky Peak	79	4
Dworshak	71	-1
Lower Granite	80	1

## Lower Columbia Basin

The Dalles	81	-1
------------	----	----



# Water Year to Date Natural Observed Runoff

## % Normal Runoff Oct 1 - Feb 5

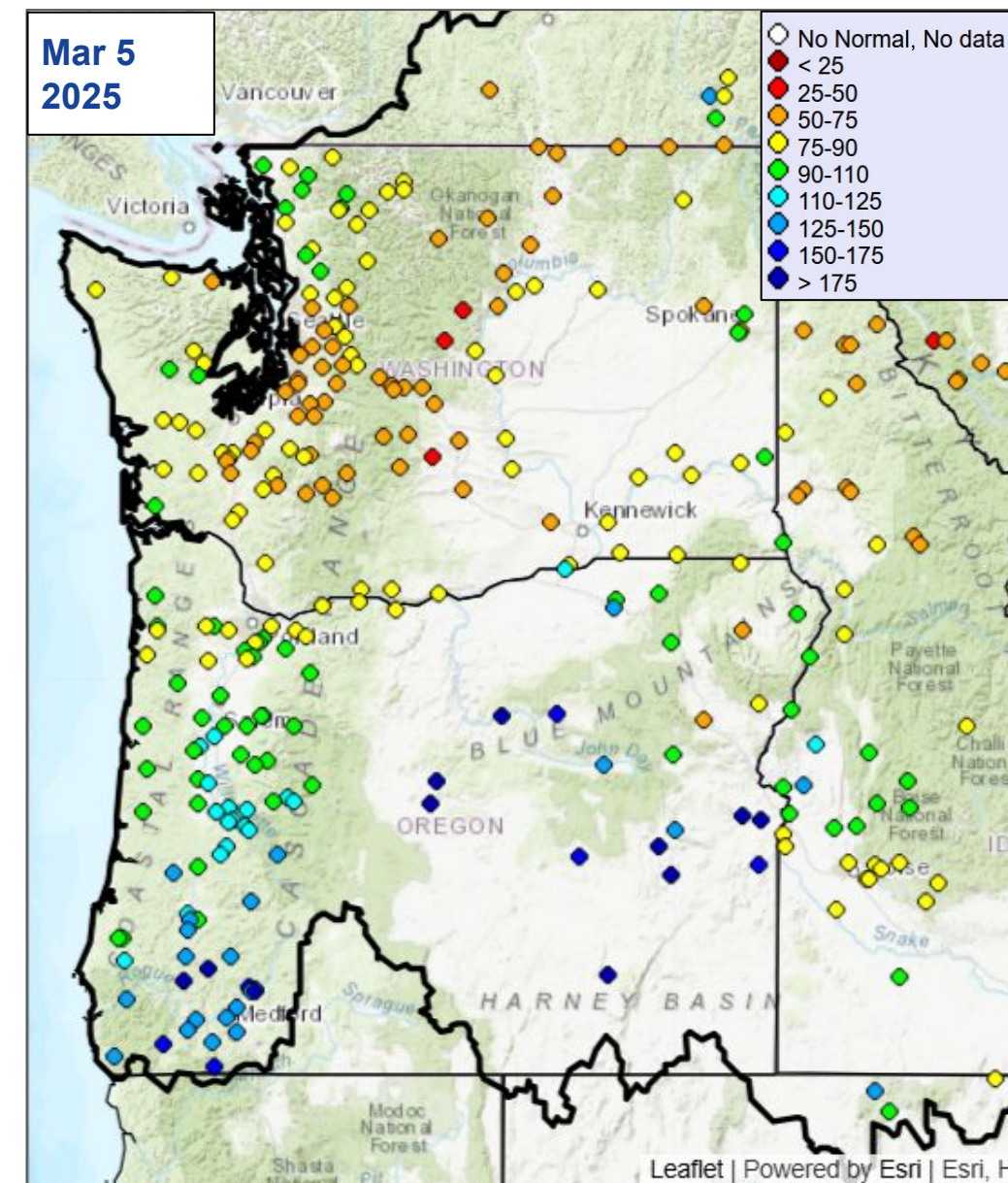
### Washington

### Δ since Feb 5

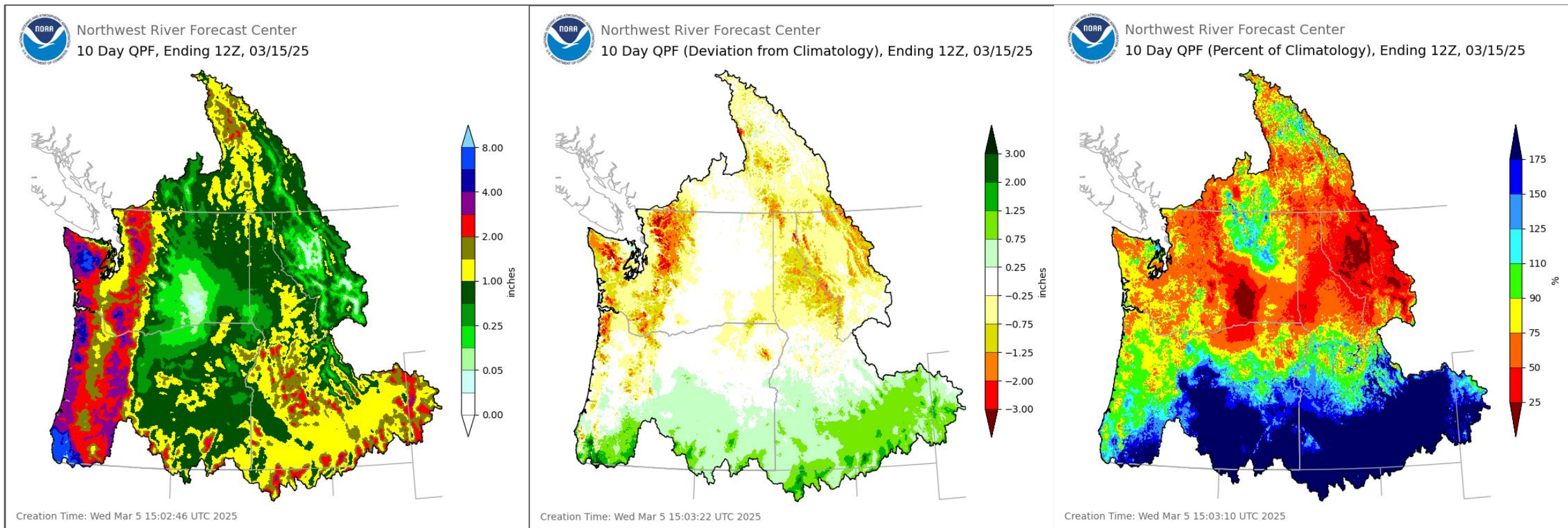
Skagit near Mt Vernon	84	-1
Dungeness near Sequim	69	-2
Chehalis at Porter	75	3
Okanogan at Malott	67	-2
Methow near Pateros	65	0
Yakima at Parker	53	2
Walla Walla near Touchet	78	12

### Oregon

Willamette at Salem	98	3
Rogue at Raygold	141	10
Umatilla at Pendleton	106	5
Grande Ronde at Troy	82	-1
Crooked near Prineville	218	30
Owyhee Dam	164	55



# 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).

## % Normal Apr-Sep Volume

### Upper Columbia Basin

**Δ since Feb 5**

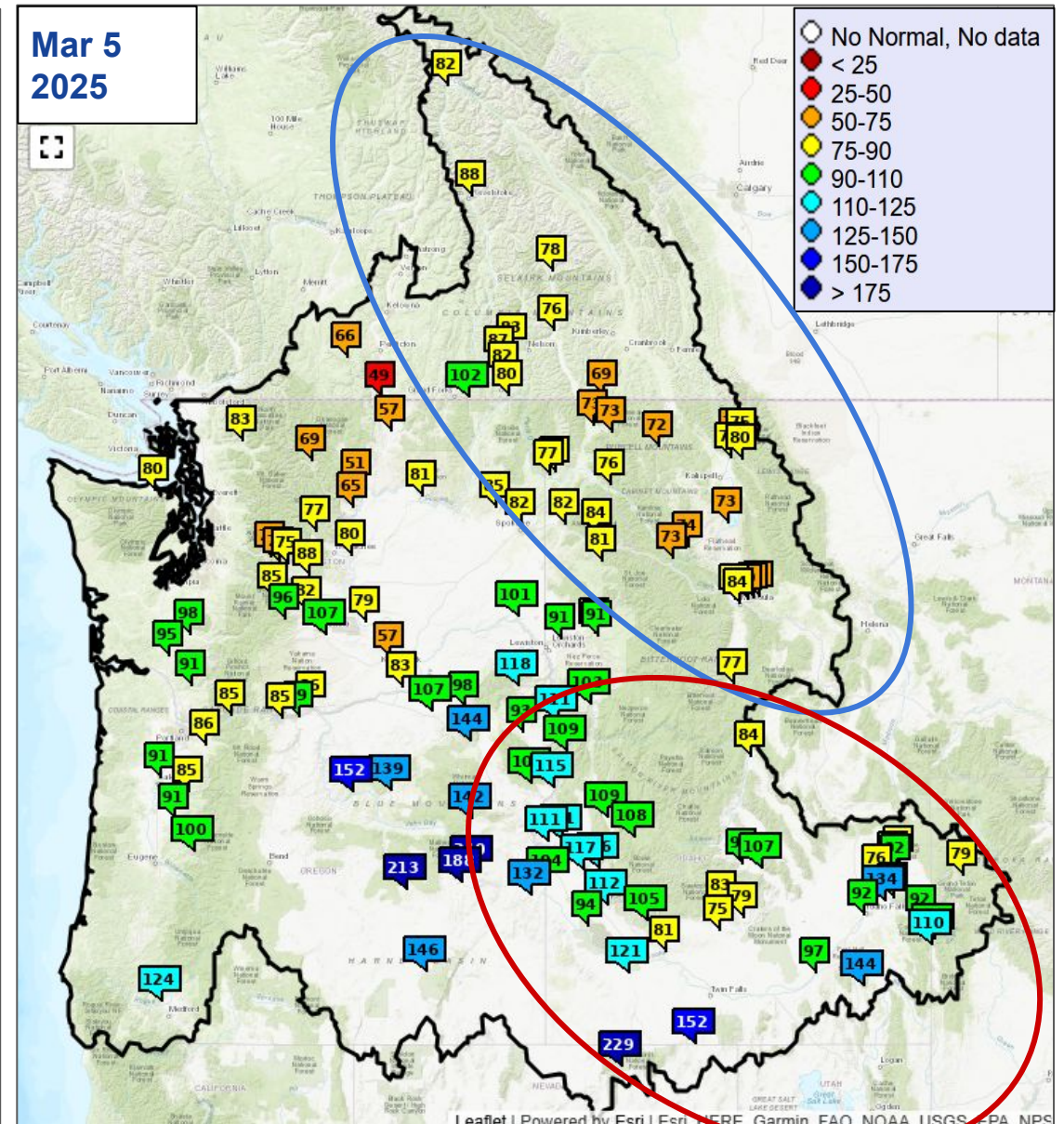
Mica	82	2
Duncan	78	-2
Queens Bay	76	-2
Libby	72	-1
Hungry Horse	80	4
Grand Coulee	81	-1

### Snake River Basin

American Falls	97	3
Lucky Peak	112	-8
Dworshak	89	1
Lower Granite	101	0

### Lower Columbia Basin

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



# Natural Water Supply Forecasts

## % Normal Apr-Sep Volume

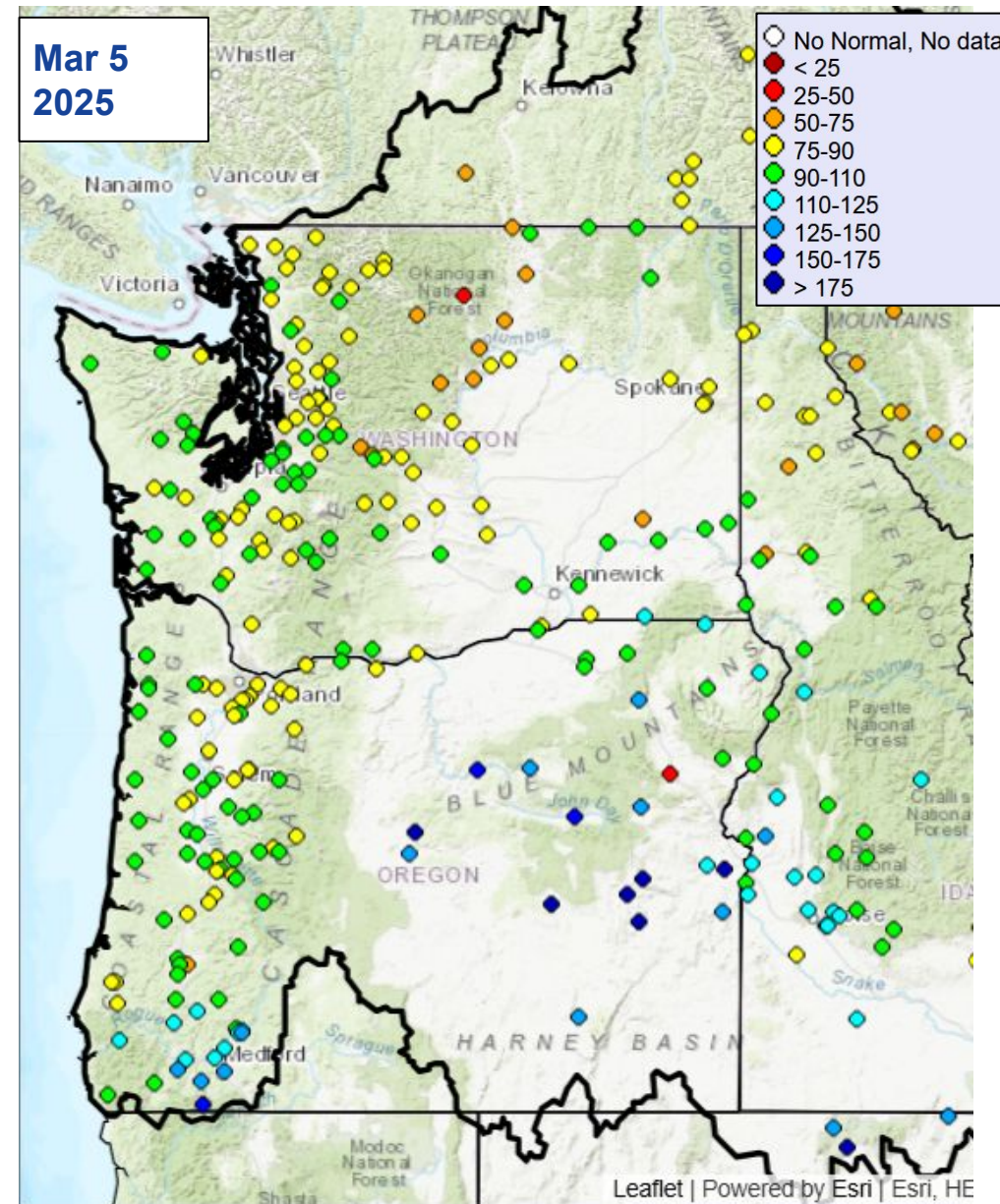
### Washington

**Δ since Feb 5**

Skagit near Mt Vernon	85	2
Dungeness near Sequim	79	-11
Chehalis at Porter	87	-2
Okanogan at Malott	57	1
Methow near Pateros	51	1
Yakima at Parker	99	0
Walla Walla near Touchet	81	3

### Oregon

Willamette at Salem	87	-5
Rogue at Raygold	124	-7
Umatilla at Pendleton	107	3
Grande Ronde at Troy	118	4
Crooked near Prineville	143	-51
Owyhee Dam	131	16





# ESP10 Water Supply Forecast

## COLUMBIA - GRAND COULEE DAM (GCDW1) Forecasts for Water Year 2025

### Official Water Supply

ESP with 10 Days QPF Ensemble: 2025-03-05 Issued: 2025-03-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	45623	49780	81	55854	61483
APR-JUL	37797	42045	80	47394	52774
APR-AUG	42726	46836	80	52295	58186
JAN-SEP	52664	56757	81	62682	70457
JAN-JUL	44577	49057	79	54500	61749
OCT-SEP	60962	65055	83	70980	78842

### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2025-03-05 Issued: 2025-03-05

APR-SEP	45663	51282	83	57037	61483
APR-JUL	38109	43526	82	48351	52774
APR-AUG	42620	48222	83	53704	58186
JAN-SEP	52450	57980	82	64305	70457
JAN-JUL	45077	50633	82	55571	61749
OCT-SEP	60748	66278	84	72603	78842

### Reference

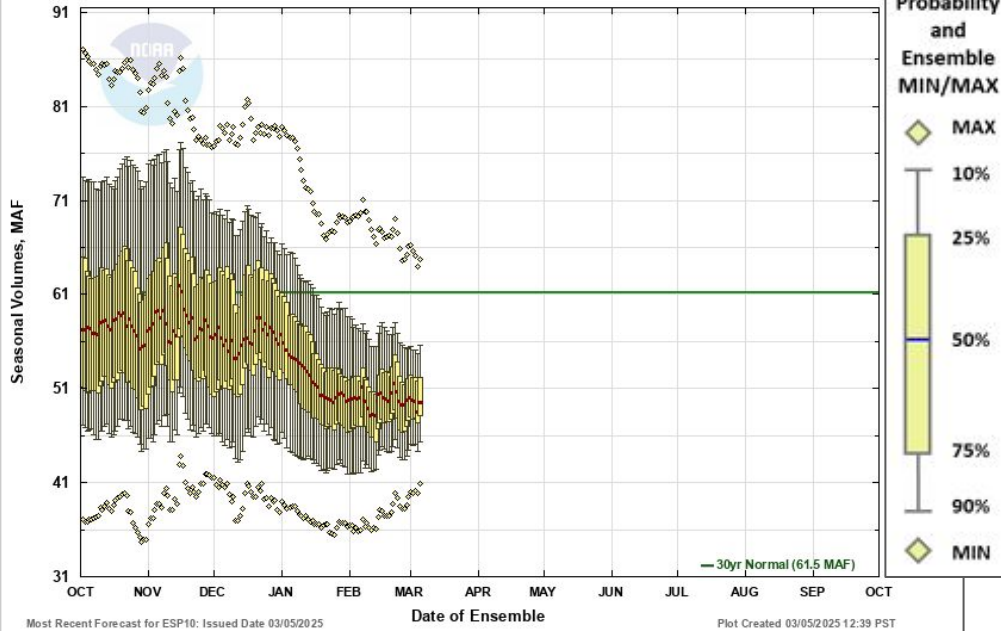
ESP with 0 Days QPF Ensemble: 2025-03-05 Issued: 2025-03-05

APR-SEP	45130	51114	83	57279	61483
APR-JUL	37637	43374	82	47936	52774
APR-AUG	42143	48102	83	53876	58186
JAN-SEP	51842	58272	83	64441	70457
JAN-JUL	44598	50486	82	55268	61749
OCT-SEP	60140	66570	84	72739	78842

## Water Supply Forecasts

### COLUMBIA - GRAND COULEE DAM

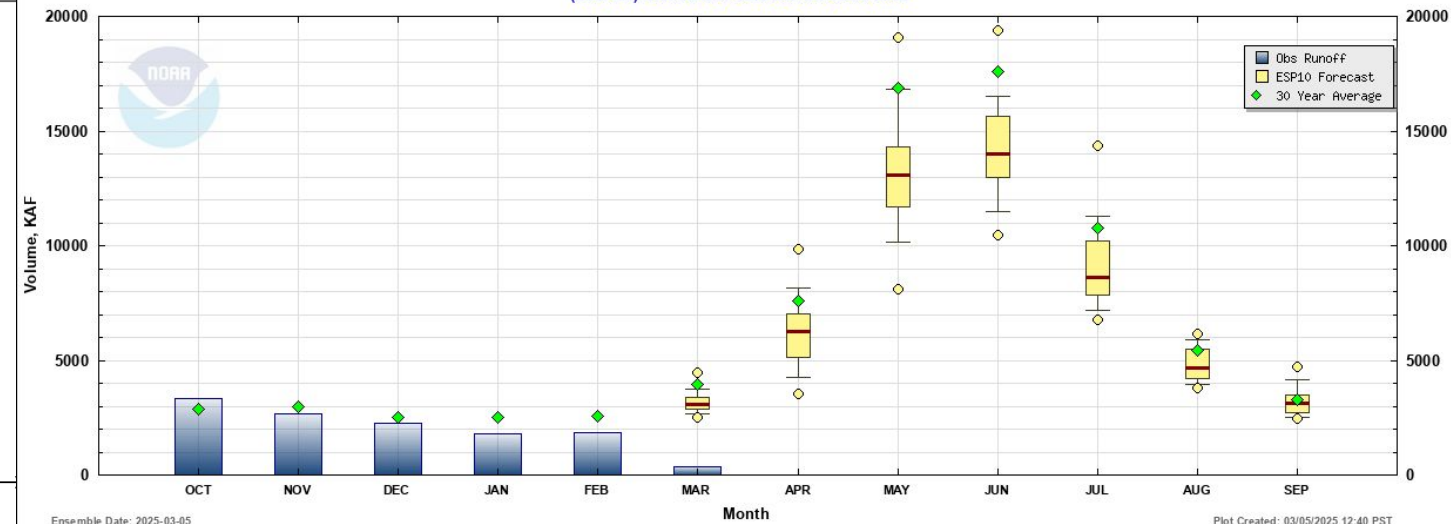
Period APR to SEP -- Water Year 2025



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

## Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2025

### (GCDW1) COLUMBIA - GRAND COULEE DAM



[↑ nwrfc.noaa.gov/water\\_supply/ws\\_forecasts.php?id=GCDW1](https://nwrfc.noaa.gov/water_supply/ws_forecasts.php?id=GCDW1)

[nwrfc.noaa.gov/water\\_supply/monthly/monthly\\_forecasts.php?id=GCDW1](https://nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=GCDW1)



# ESP10 Water Supply Forecast

## SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2025

### Official Water Supply

ESP with 10 Days QPF Ensemble: 2025-03-05 Issued: 2025-03-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	19127	22406	101	28604	22232
APR-JUL	16781	19540	98	25893	19946
APR-AUG	17957	21076	100	27308	21121
JAN-SEP	25856	29126	98	35891	29736
JAN-JUL	23546	26412	96	33147	27450
OCT-SEP	29434	32705	95	39469	34287

### Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2025-03-05 Issued: 2025-03-05

APR-SEP	18039	22282	100	27417	22232
APR-JUL	15809	19628	98	24642	19946
APR-AUG	16898	20985	99	26114	21121
JAN-SEP	25528	29278	98	34640	29736
JAN-JUL	23298	26794	98	32002	27450
OCT-SEP	29107	32857	96	38218	34287

### Reference

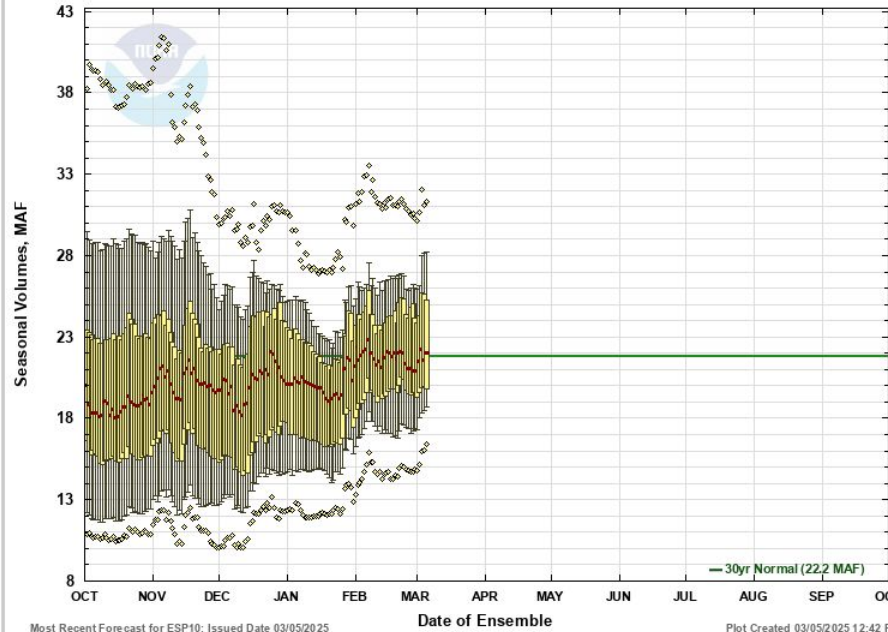
ESP with 0 Days QPF Ensemble: 2025-03-05 Issued: 2025-03-05

APR-SEP	17797	22121	99	26977	22232
APR-JUL	15587	19523	98	24163	19946
APR-AUG	16664	20806	99	25660	21121
JAN-SEP	25160	29546	99	34264	29736
JAN-JUL	22922	26927	98	31559	27450
OCT-SEP	28738	33125	97	37843	34287

## Water Supply Forecasts

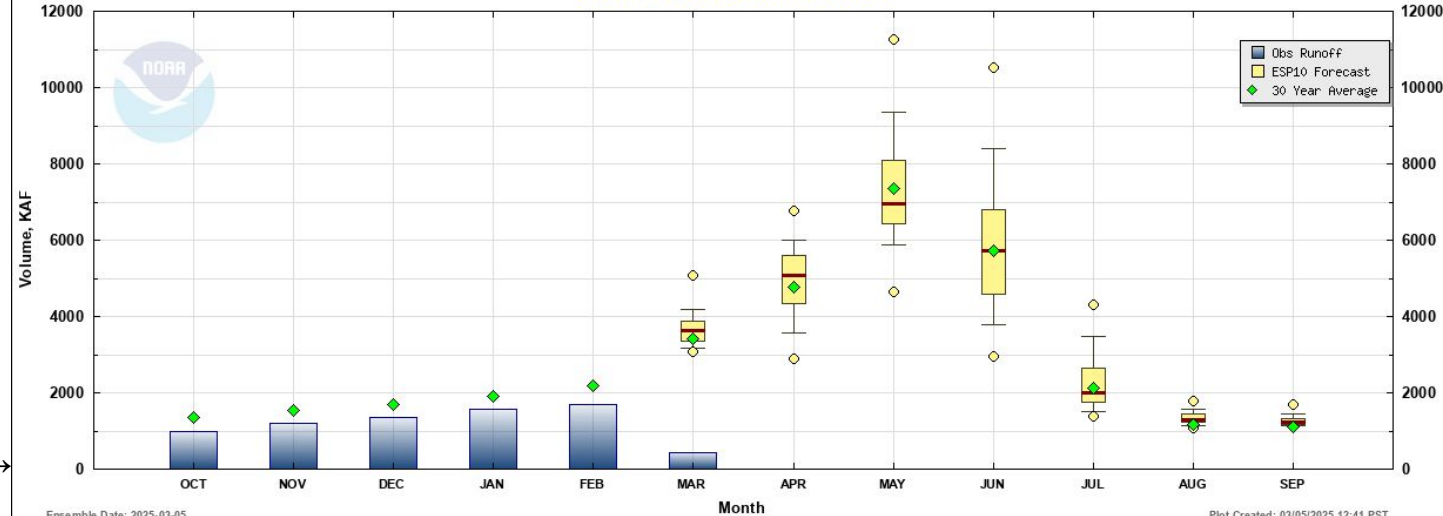
SNAKE - LOWER GRANITE DAM

Period APR to SEP -- Water Year 2025



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

## Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2025 (LGDW1) SNAKE - LOWER GRANITE DAM



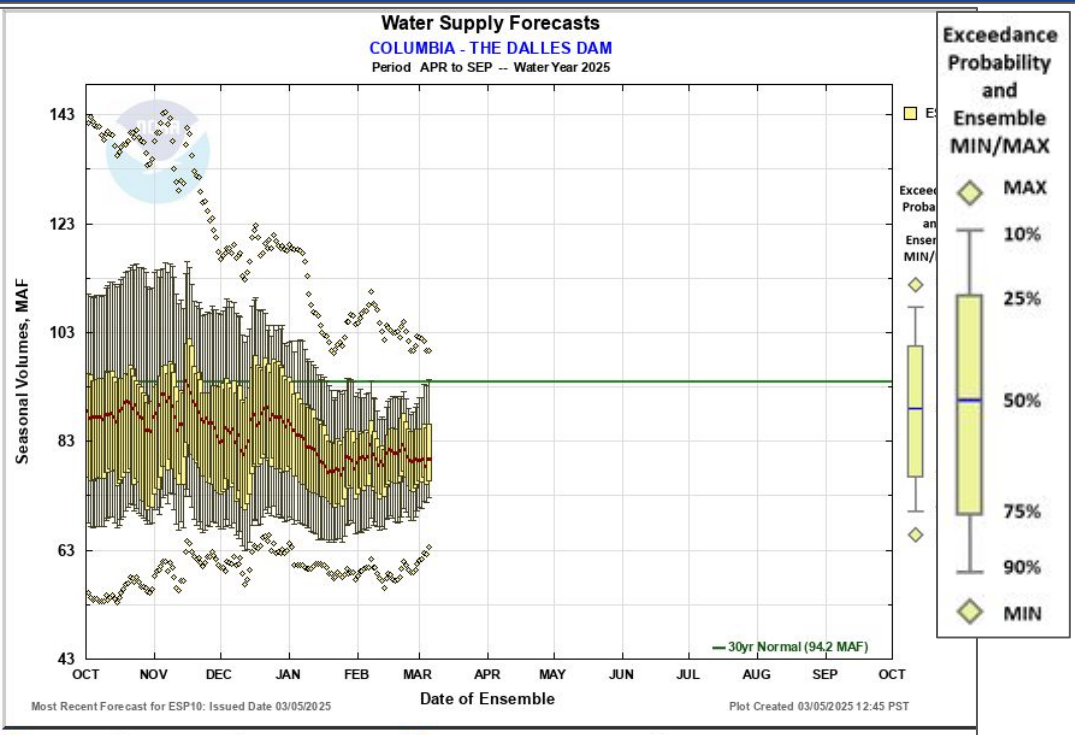
[nwrfc.noaa.gov/water\\_supply/ws\\_forecasts.php?id=LGDW1](https://nwrfc.noaa.gov/water_supply/ws_forecasts.php?id=LGDW1)

[nwrfc.noaa.gov/water\\_supply/monthly/monthly\\_forecasts.php?id=LGDW1](https://nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=LGDW1)

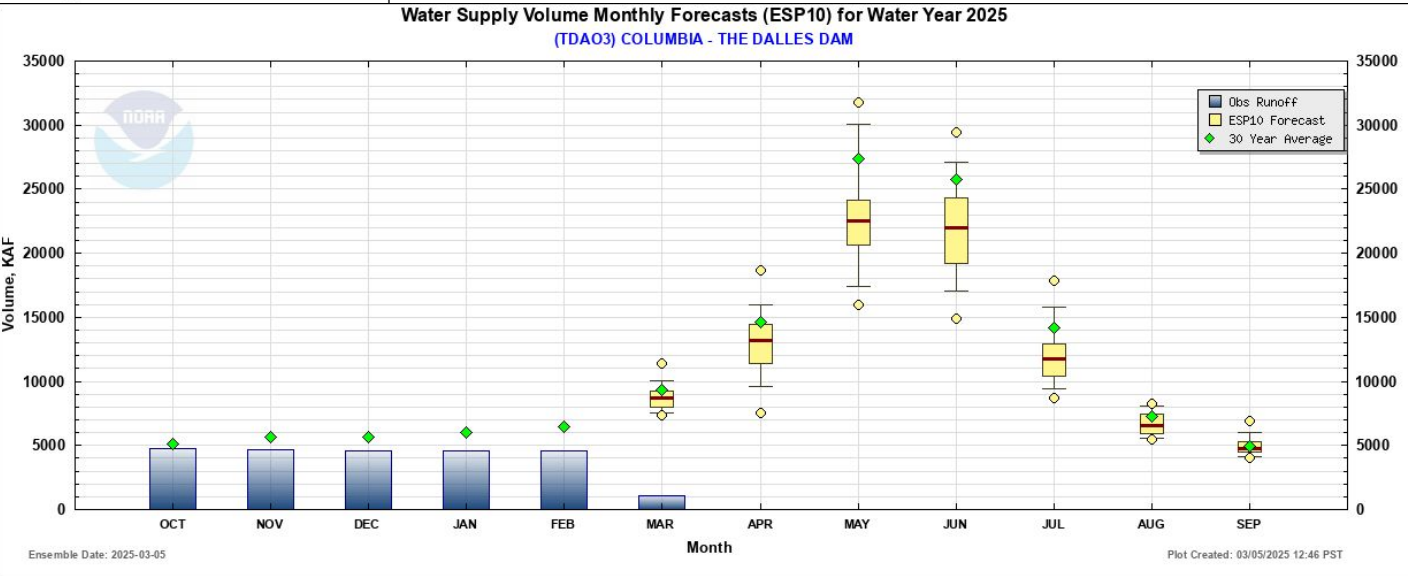


# ESP10 Monthly Water Supply Forecast

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2025					
Official Water Supply					
ESP with 10 Days QPF Ensemble: 2025-03-05 Issued: 2025-03-05					
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	Average	10 %	
APR-SEP	72820	79859	85	94515	94166
APR-JUL	62460	68657	84	82434	81933
APR-AUG	67940	75123	84	89761	89196
JAN-SEP	90940	97782	84	113141	115946
JAN-JUL	80447	86684	84	100724	103714
OCT-SEP	105015	111857	85	127216	132314
Experimental Water Supply					
HEFS with 15 days EQPF Ensemble: 2025-03-05 Issued: 2025-03-05					
APR-SEP	71463	81765	87	91582	94166
APR-JUL	60804	69943	85	79467	81933
APR-AUG	66175	76547	86	86639	89196
JAN-SEP	89437	99360	86	111332	115946
JAN-JUL	79531	87979	85	100077	103714
OCT-SEP	103512	113434	86	125407	132314
Reference					
ESP with 0 Days QPF Ensemble: 2025-03-05 Issued: 2025-03-05					
APR-SEP	70112	81892	87	90796	94166
APR-JUL	59344	69998	85	78940	81933
APR-AUG	64832	76717	86	85317	89196
JAN-SEP	87800	99876	86	111216	115946
JAN-JUL	78436	88420	85	99388	103714
OCT-SEP	101875	113951	86	125291	132314



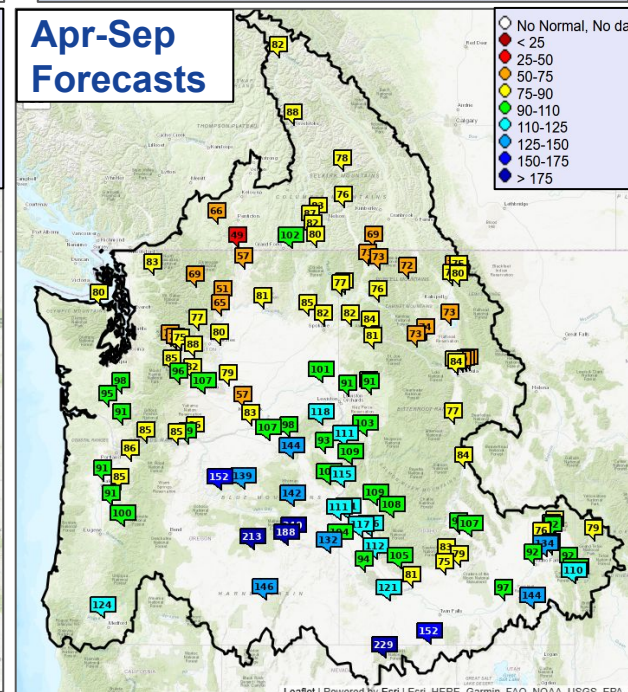
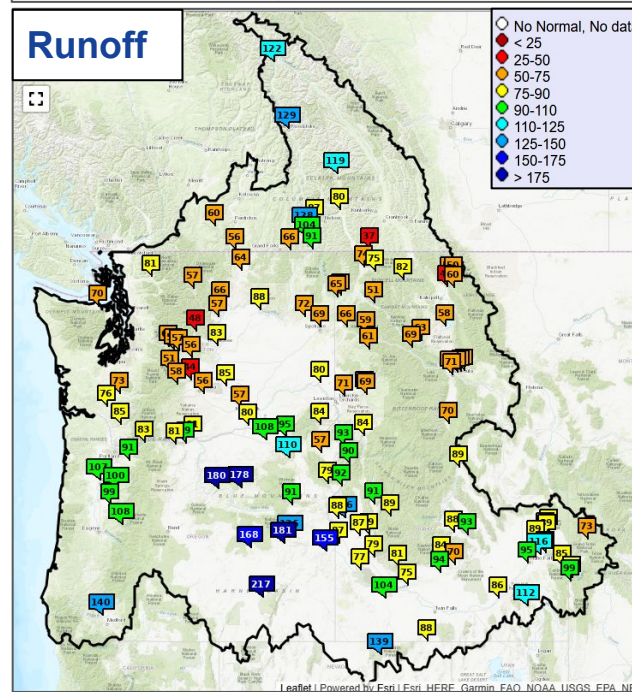
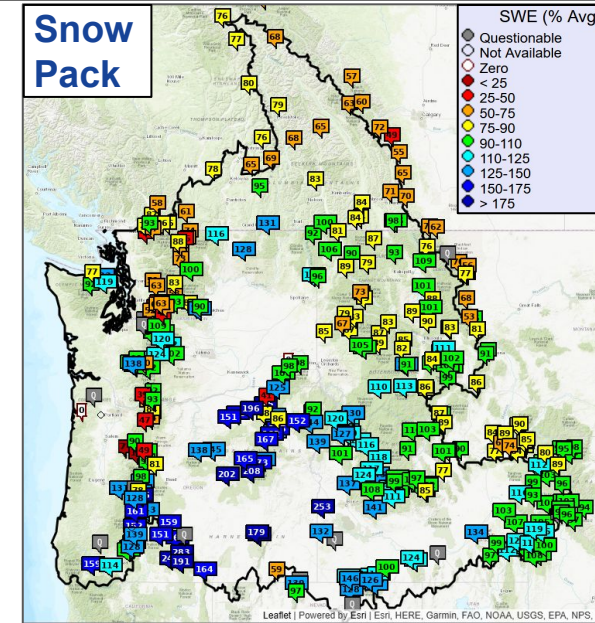
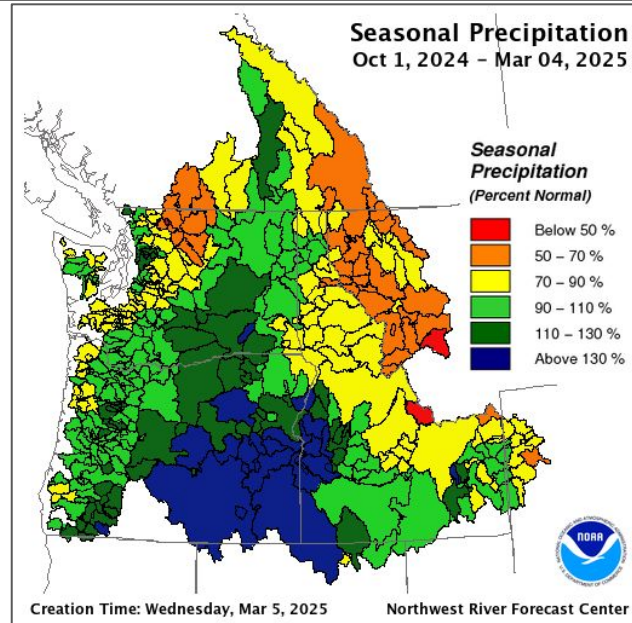
☒ Max Scale ☐ Scale To Data ☐ Scale To Last 45 Days ☒ Show Min/Max Ensemble



[nwrfc.noaa.gov/water\\_supply/ws\\_forecasts.php?id=TDAO3](https://nwrfc.noaa.gov/water_supply/ws_forecasts.php?id=TDAO3)

[nwrfc.noaa.gov/water\\_supply/monthly/monthly\\_forecasts.php?id=TDAO3](https://nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=TDAO3) →

# Precipitation, Snow Pack, Runoff and Water Supply Forecasts



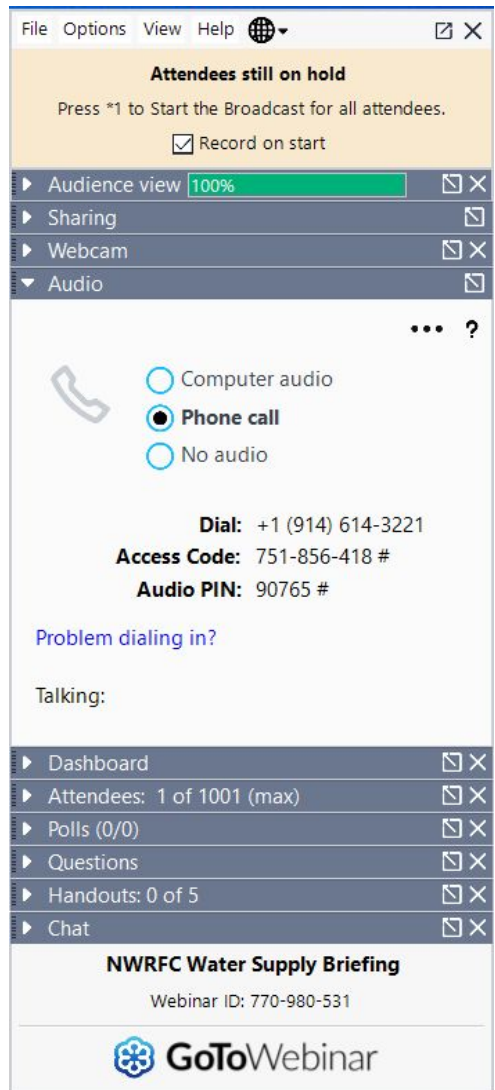
- February was overall colder and wetter than normal but still saw snowmelt in portions of the domain.
- Snowpack has decreased in percent of average since last month, despite widespread low elevation snow mid month.
- Observed runoff remains a mix of above and below normal conditions.
- Water supply forecasts also shows a mix of conditions with higher percent normal in the southern portion of the domain and lower in the north.



# Northwest River Forecast Center Briefings

Monthly Water Supply Briefings First Thursday of Each Month  
[nwrfc.noaa.gov/water\\_supply/ws\\_schd.cgi](http://nwrfc.noaa.gov/water_supply/ws_schd.cgi)

Apr	May	Jun
3	1	TBD
All presentations held at 10:00 am Pacific Time unless noted otherwise		

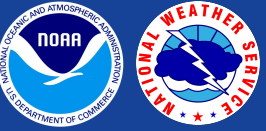


Type questions in the webinar chat or use the 'Raise Hand' function.

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#.





# Extra Slides



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



(503) 326-7291



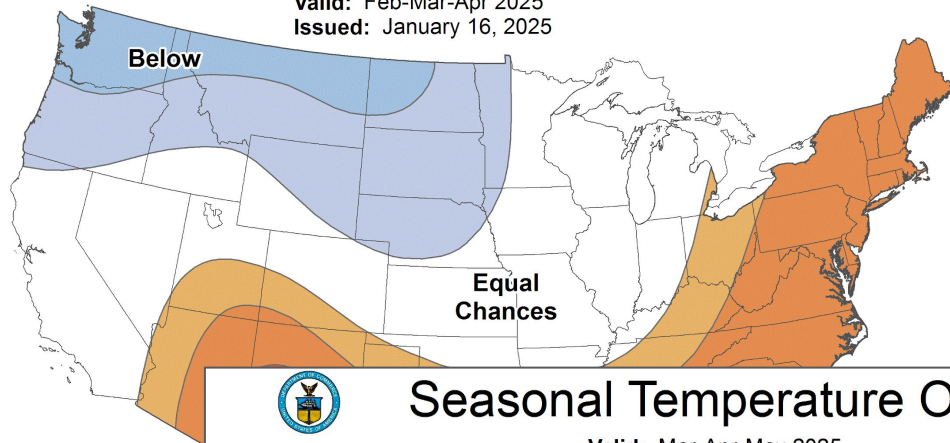
[nwrfc.noaa.gov](http://nwrfc.noaa.gov)

# Climate Prediction Center Seasonal Outlook



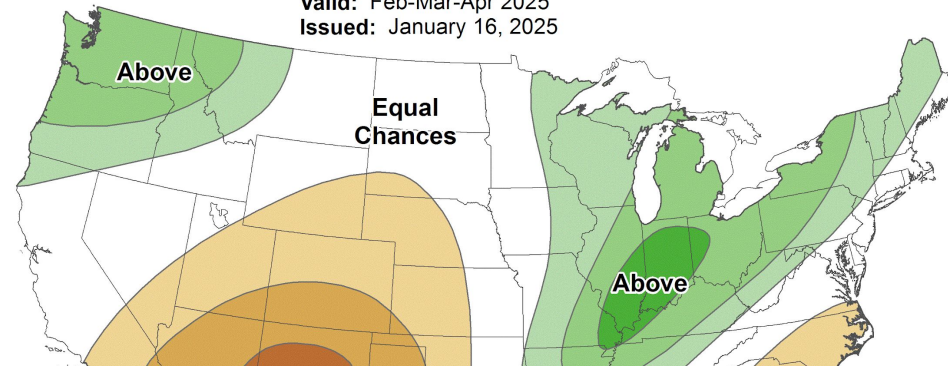
## Seasonal Temperature Outlook

Valid: Feb-Mar-Apr 2025  
Issued: January 16, 2025



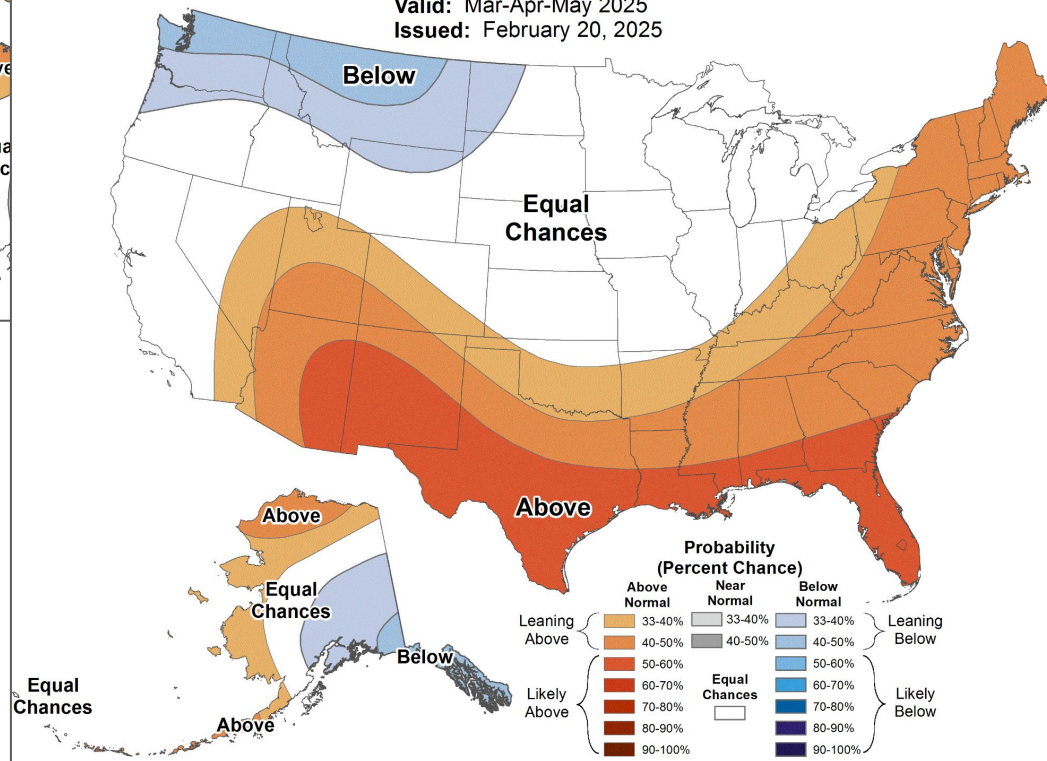
## Seasonal Precipitation Outlook

Valid: Feb-Mar-Apr 2025  
Issued: January 16, 2025



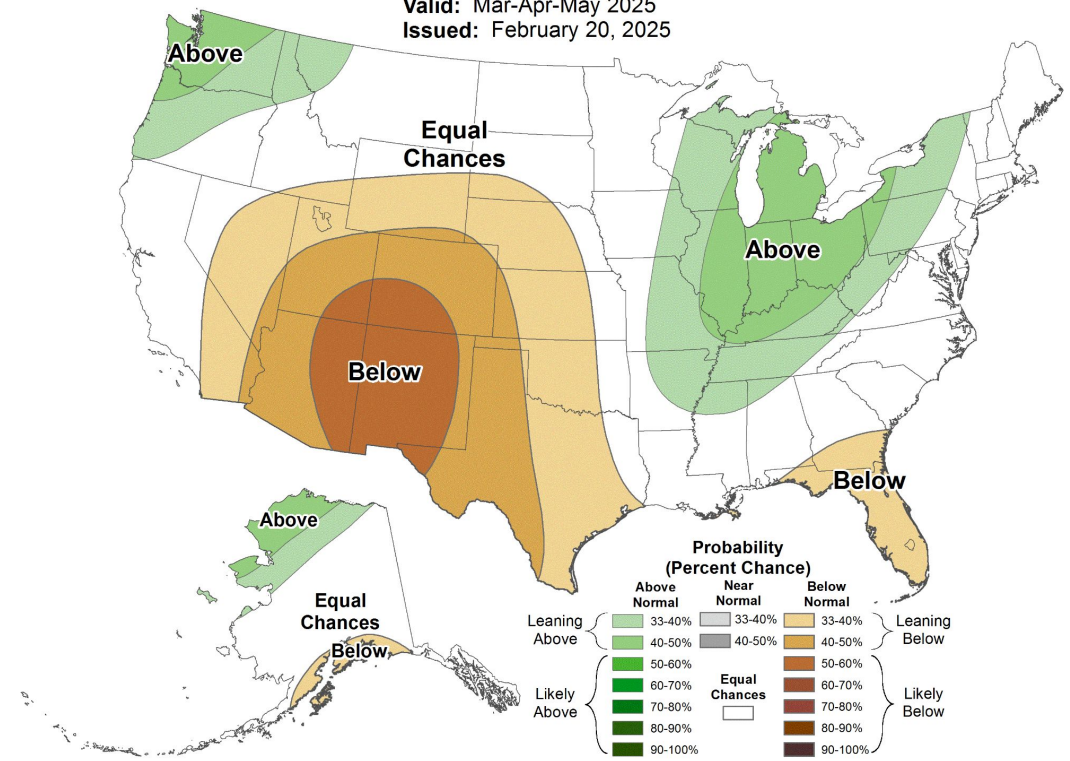
## Seasonal Temperature Outlook

Valid: Mar-Apr-May 2025  
Issued: February 20, 2025



## Seasonal Precipitation Outlook

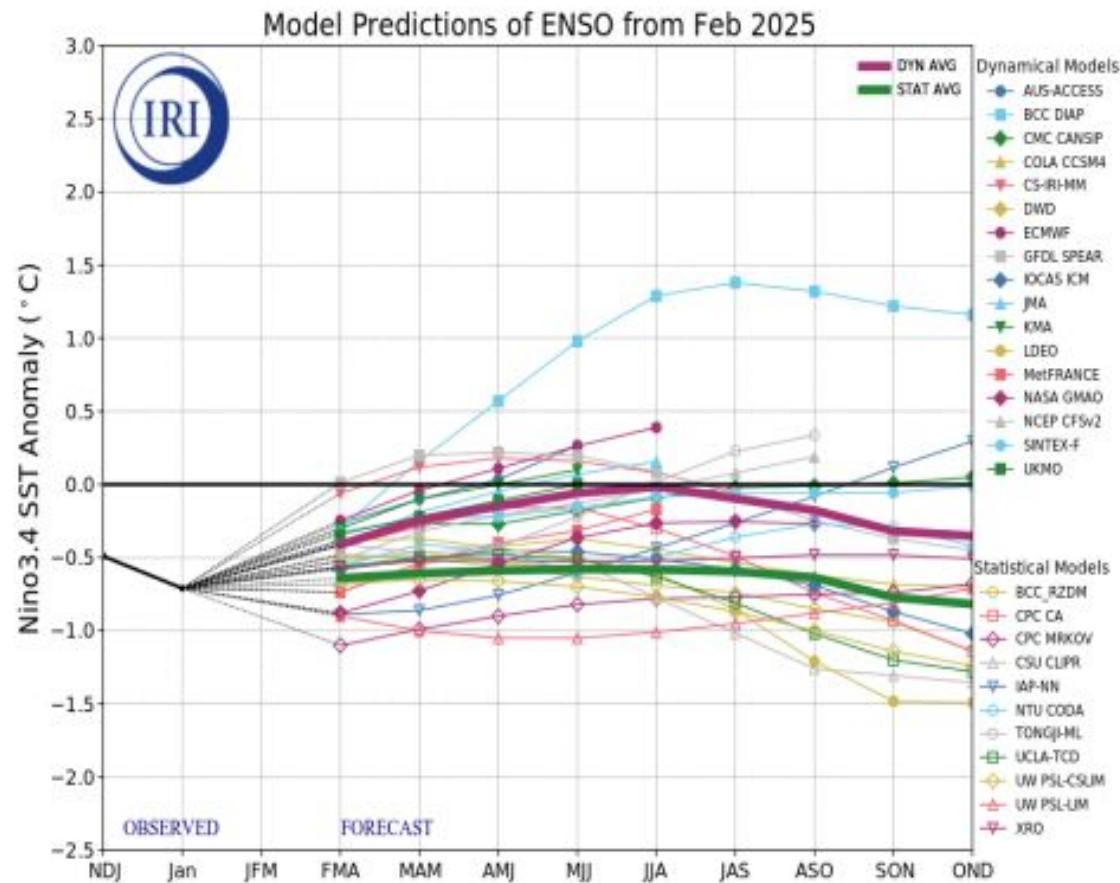
Valid: Mar-Apr-May 2025  
Issued: February 20, 2025



Equal Chances

cpc.ncep.noaa.gov

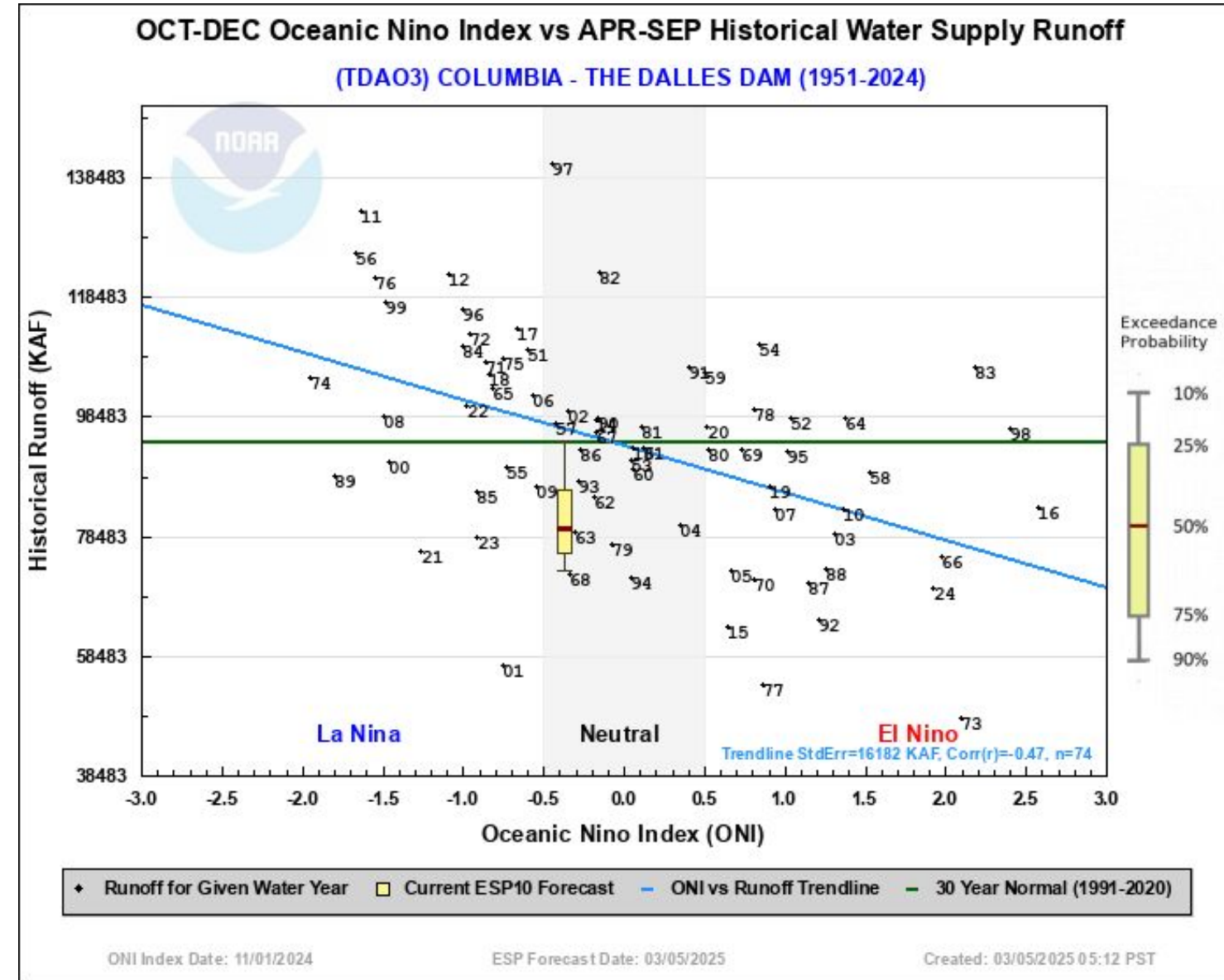
# ENSO predictions

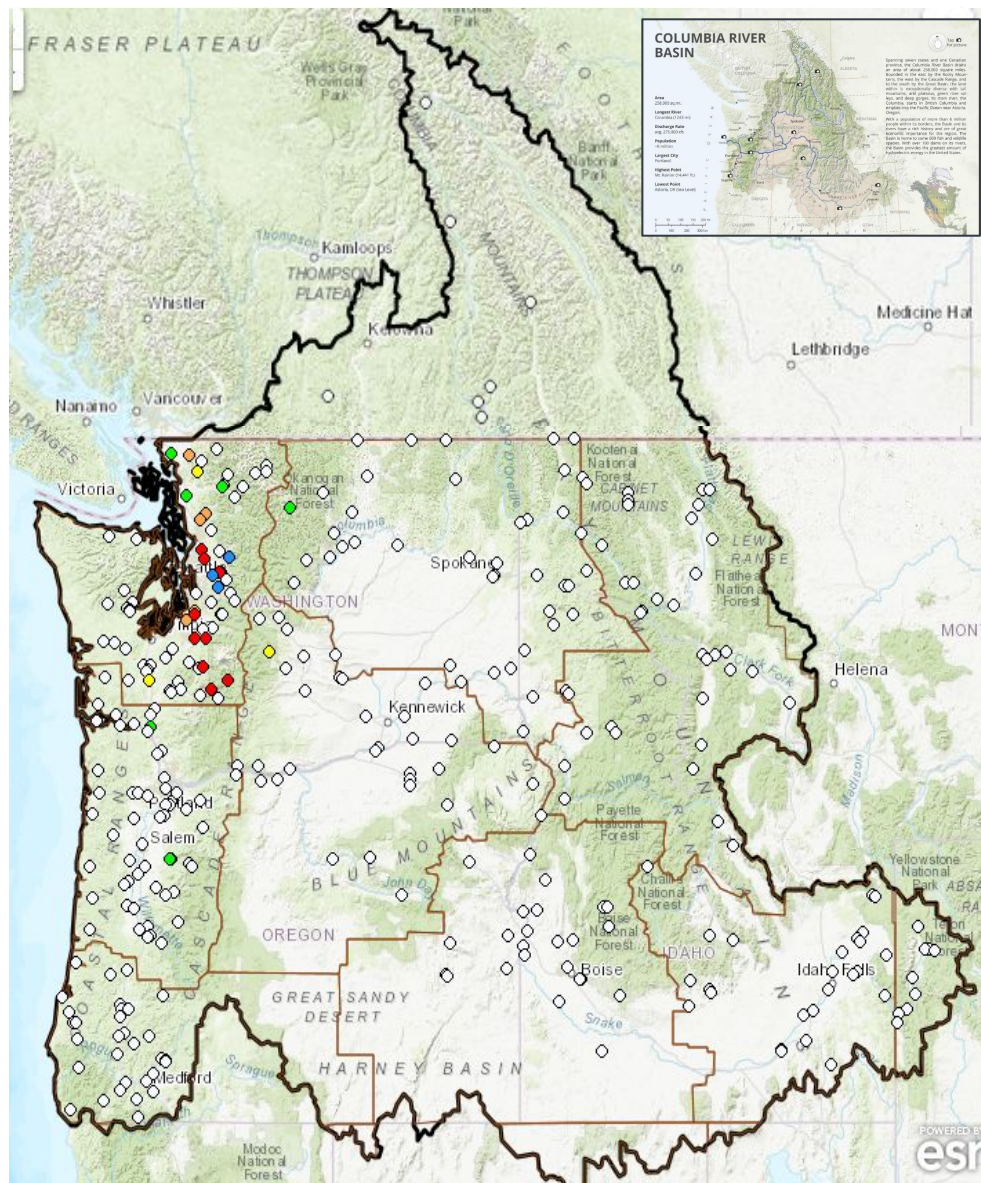


Models predict equal chances of ENSO-neutral or La Niña in February-April 2025 and then favor ENSO-neutral in March-May 2025.

During Northern Hemisphere spring and summer, ENSO-neutral is favored by the dynamical model average and La Niña is favored to persist by the statistical model average.

# ENSO predictions





326,000 Square Miles

- 2 Countries, 6+ States
- 10 NWS WFOs

Forecast Service Suite

- ~ 400 river locations
- ~ 100 reservoirs
- Multiple time scales
- Deterministic & probabilistic

NWRFC forecast and services inform regional and local decisions:

- Water Management
  - USACE, USBR, Others
- Hydropower
- Flood Control
- Drought Planning
- River Commerce
- Species Protection

