



Northwest River Forecast Center

# February 2024 Water Supply Briefing

Amy Burke, Senior Hydrologist  
[NWRFC.watersupply@noaa.gov](mailto:NWRFC.watersupply@noaa.gov)

Webinar Phone Number: (631) 992-3221

Audio Access Code: 966-003-112#

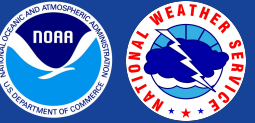
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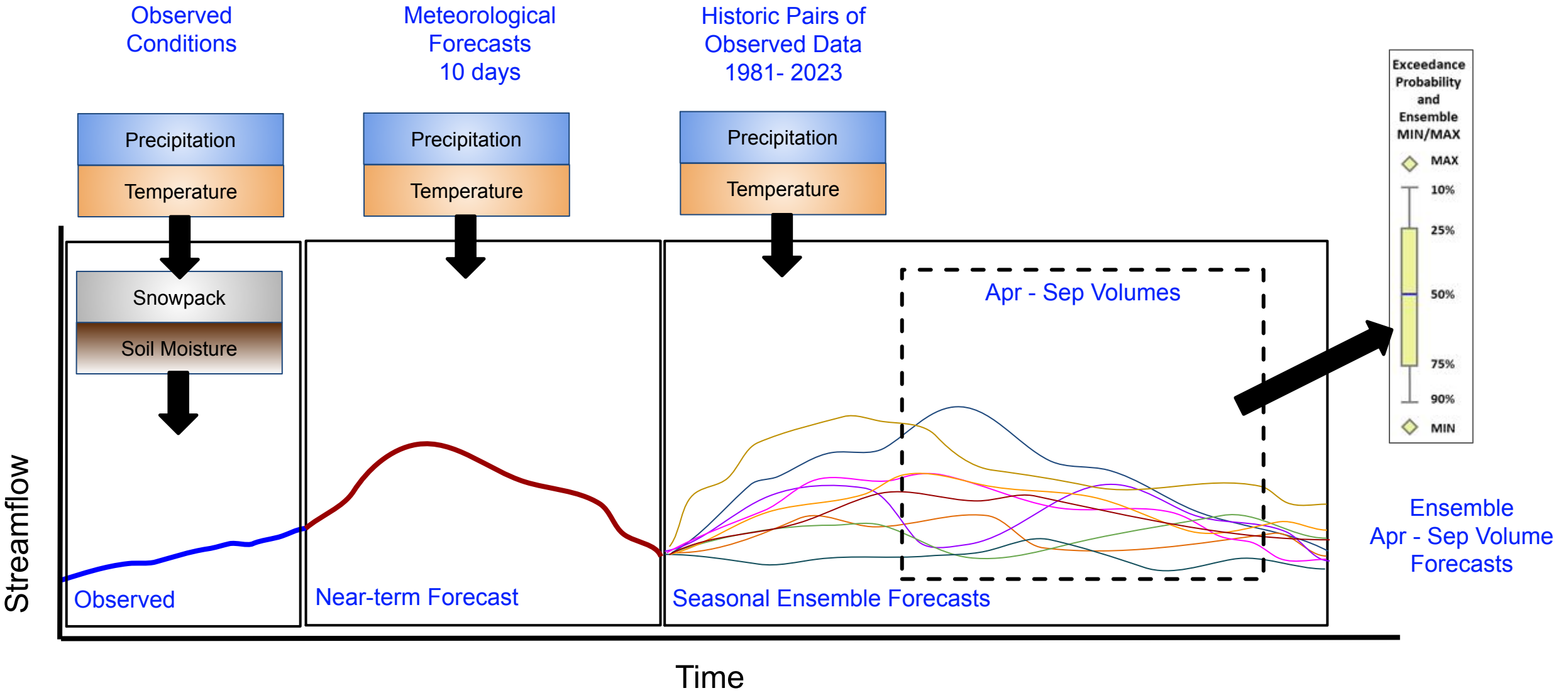


## Takeaways

- Water year 2024 has been mostly drier and warmer than normal.
- Snowpacks are below normal, in some cases record low. An exception is southern Idaho/SE Oregon where snowpacks are above normal.
- Runoff volumes since October 1 are a mix of below and above normal. Runoff varies from above normal in parts of Oregon to below normal in the NE.
- The next 10 days are expected to bring lower than normal amounts of precipitation to the basin, again with the exception of southern Idaho. Temperature will cool.
- Apr-Sep volume forecasts are a mix of normal to below normal with higher forecasts in the SE.

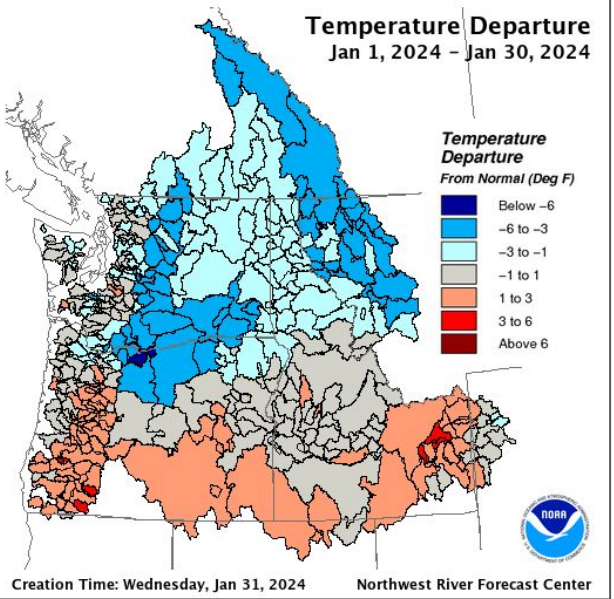
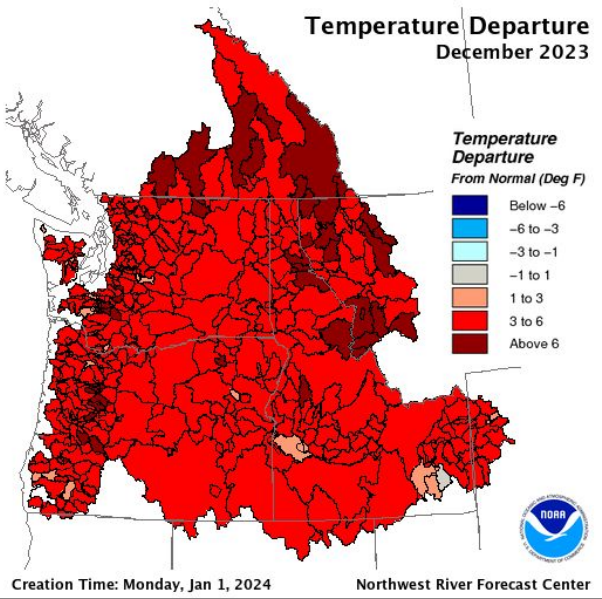
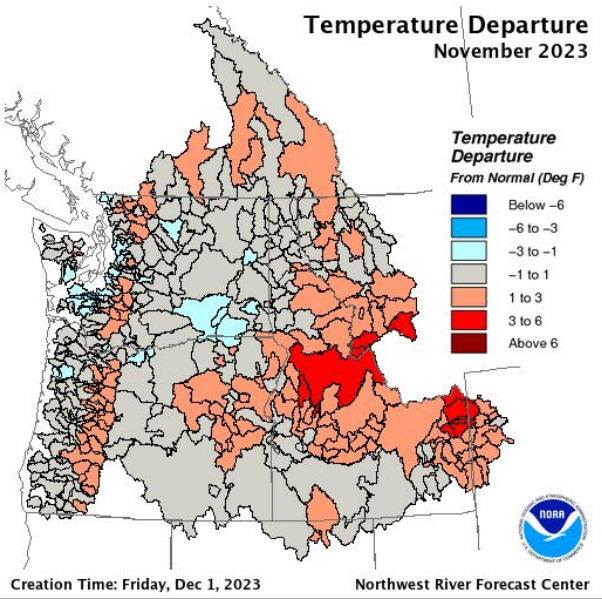
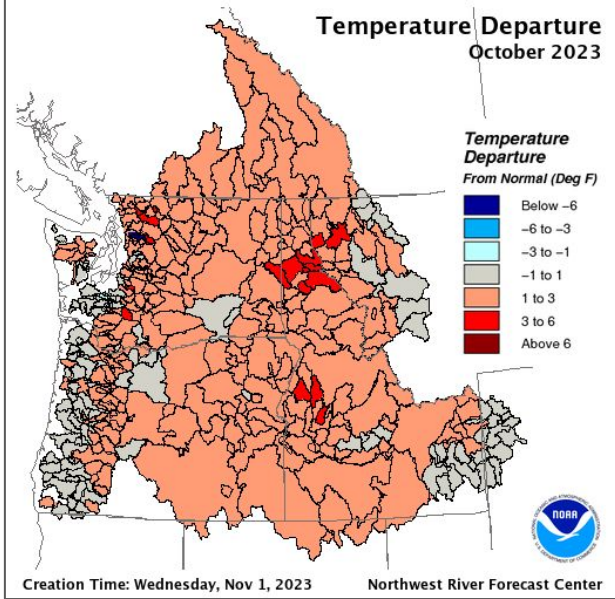
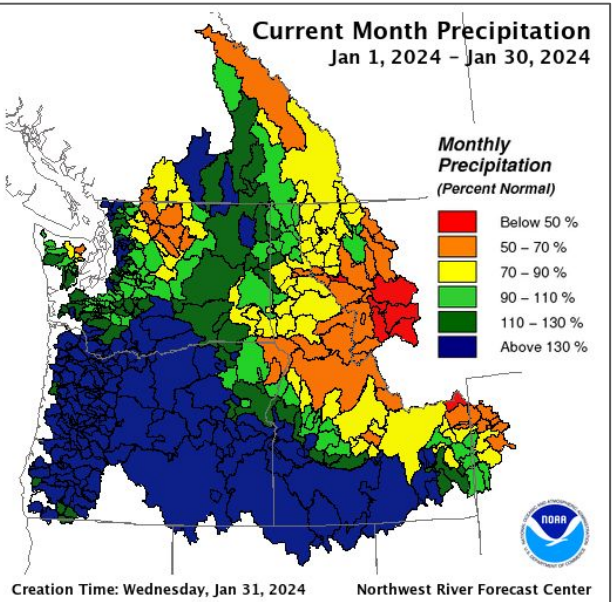
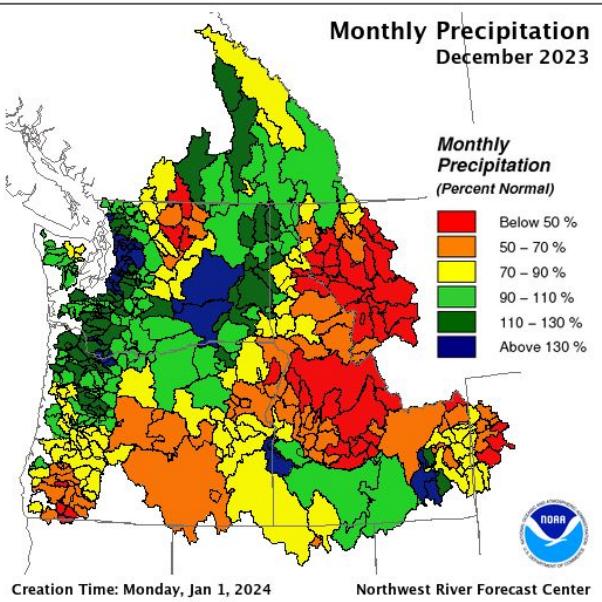
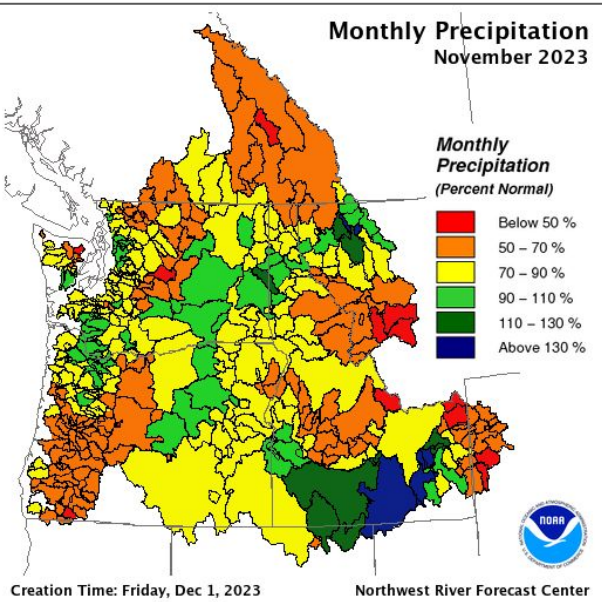
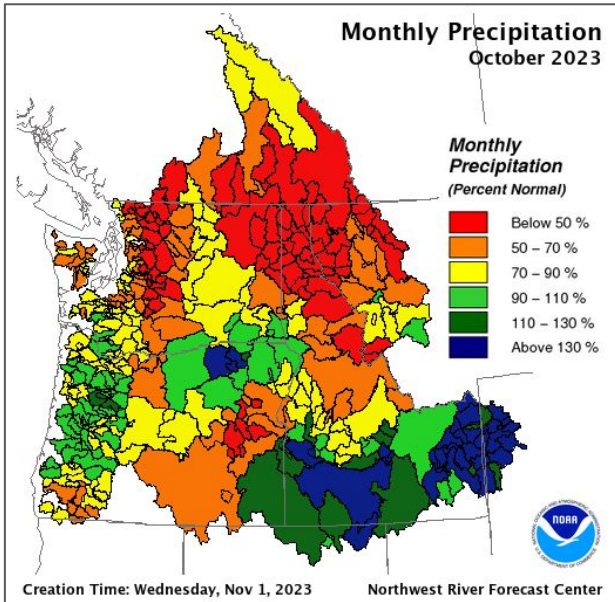


# NWRFC Forecast Technique: Ensemble Streamflow Prediction



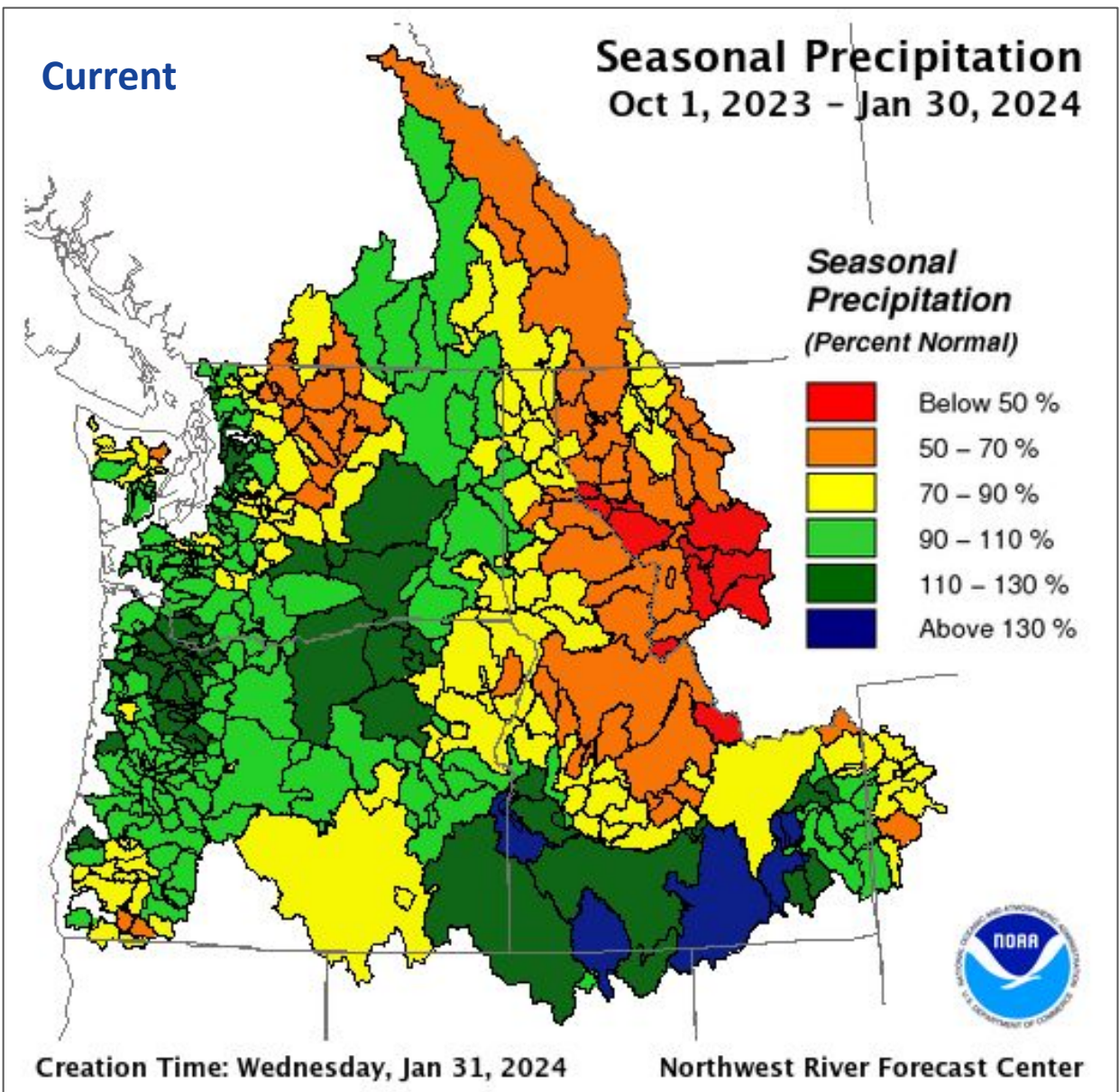
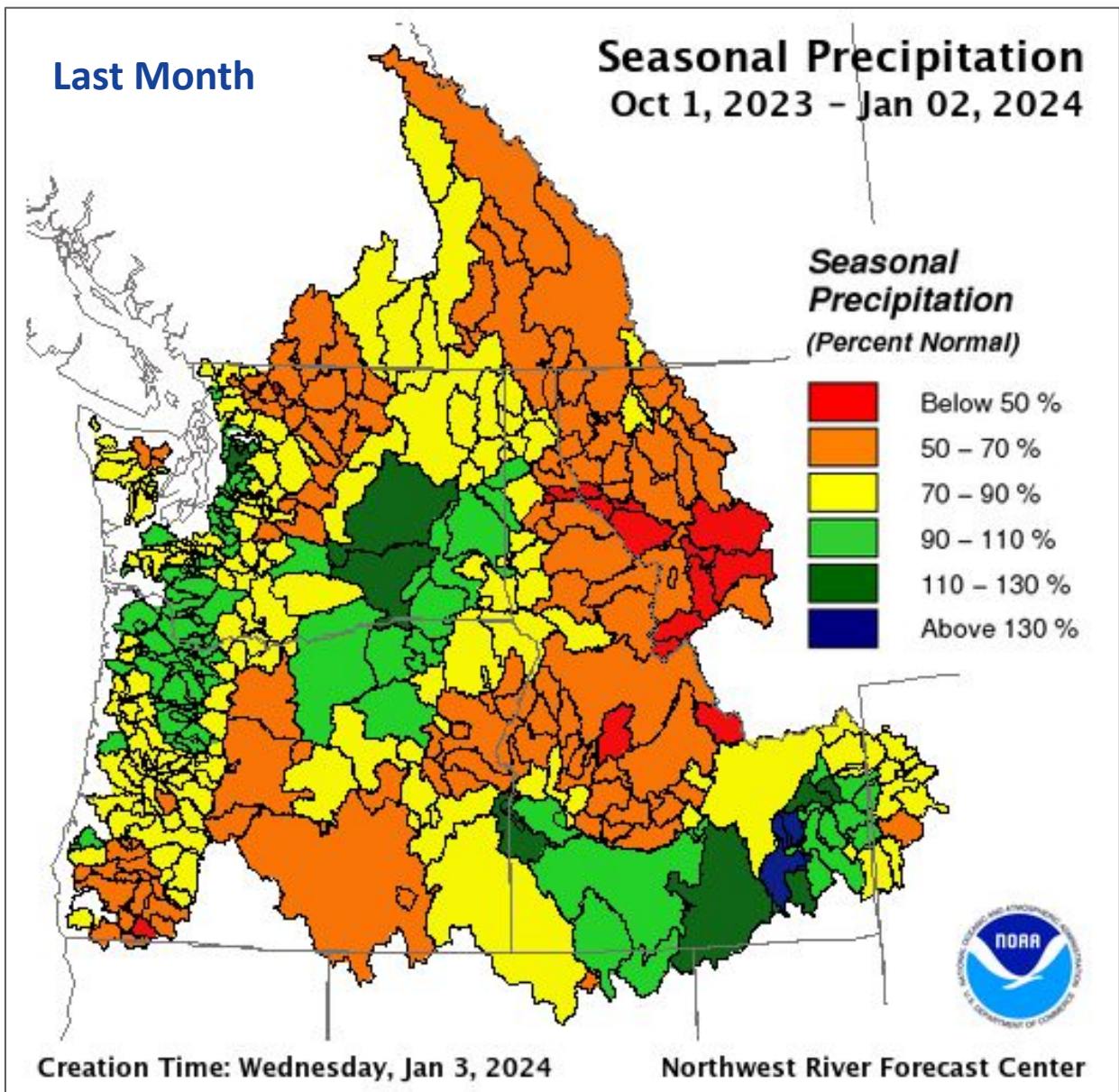


# Monthly Precipitation and Temperature Departure



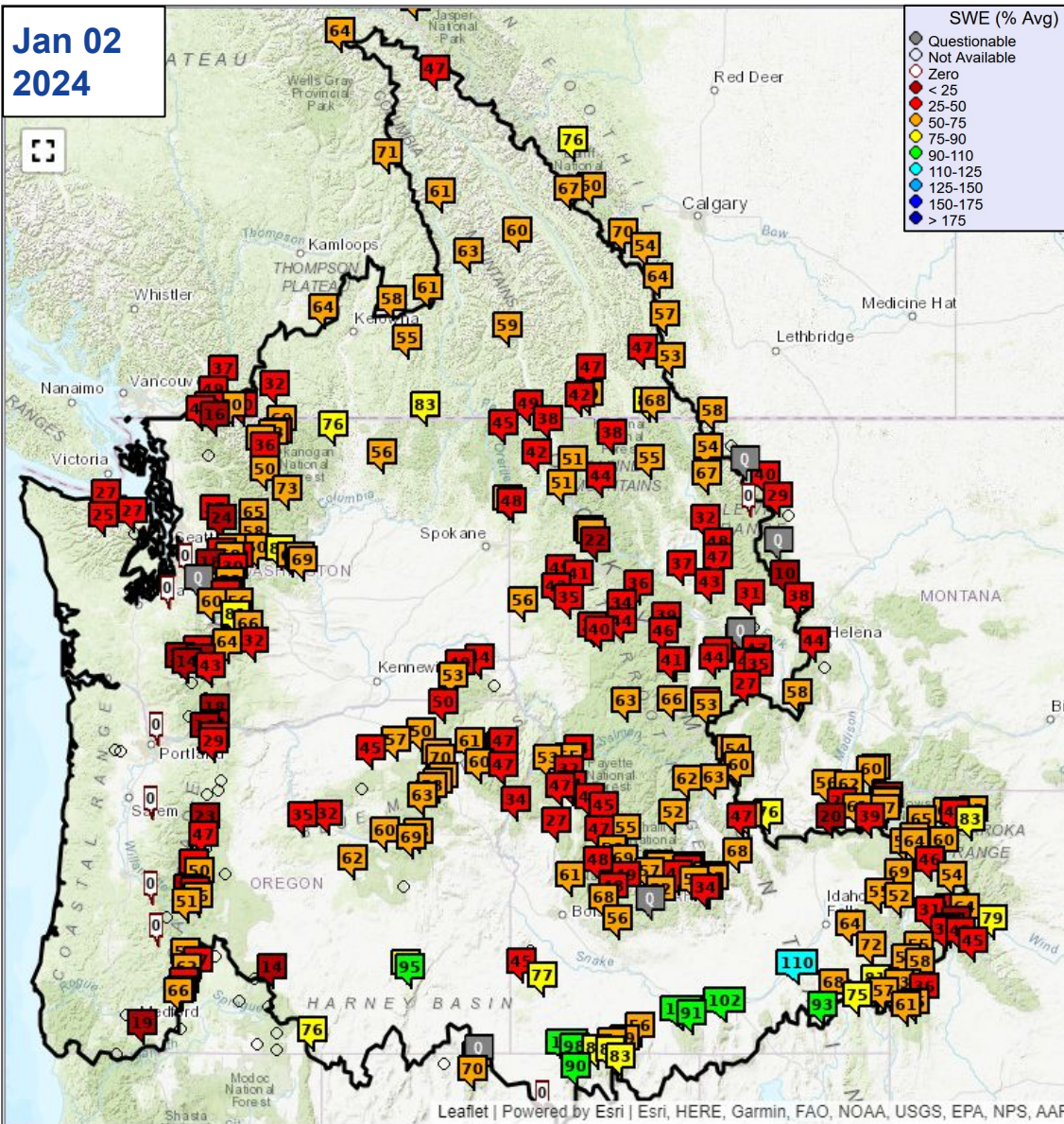


# Water Year to Date Precipitation

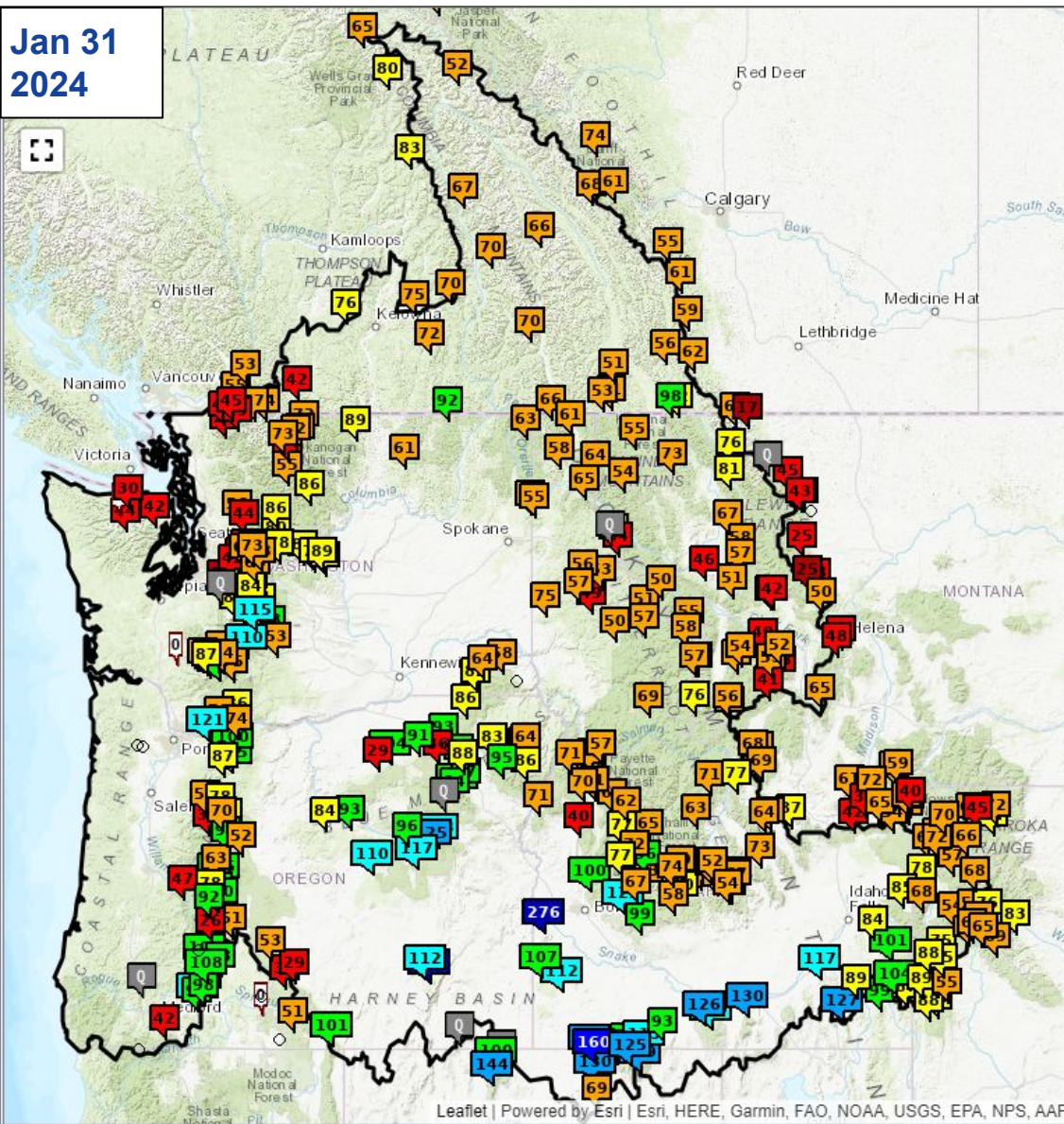


# Snowpack

Jan 02  
2024

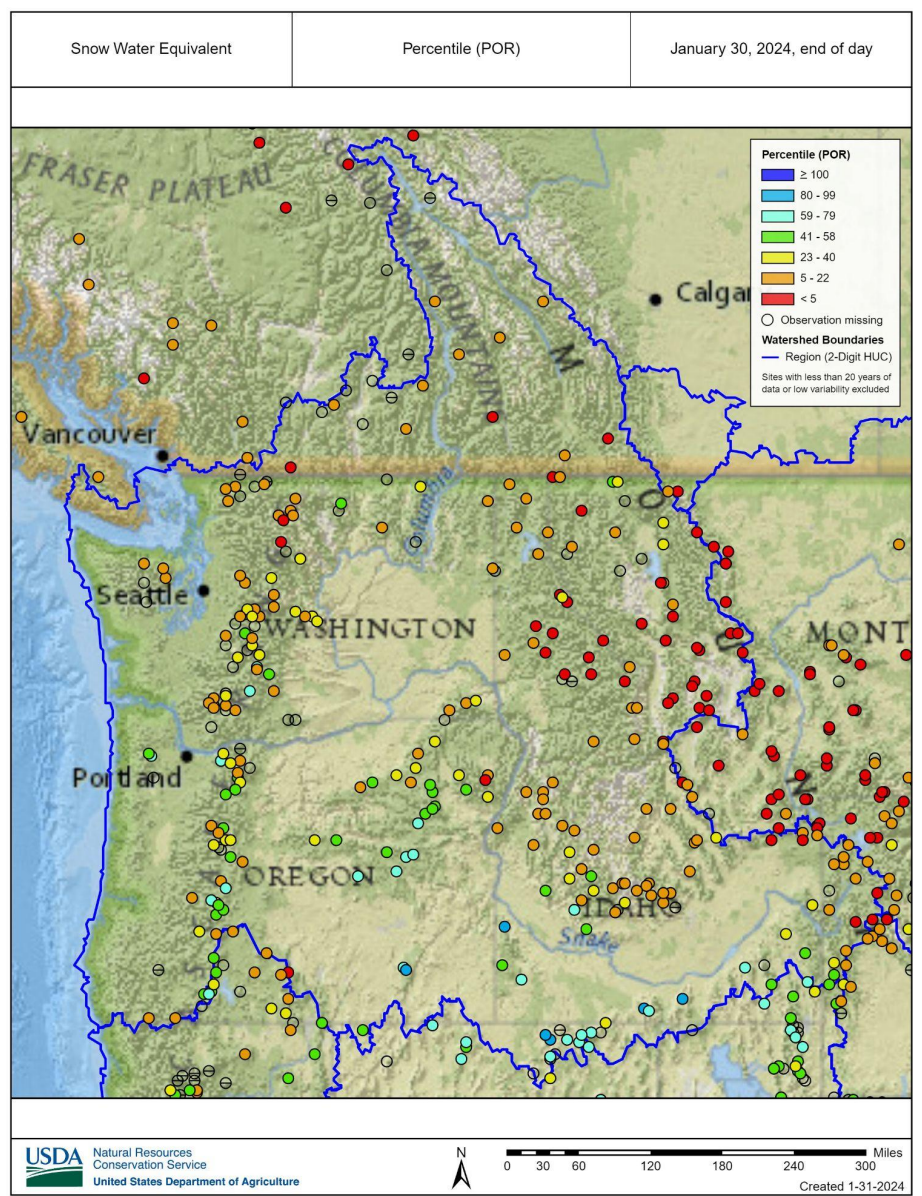
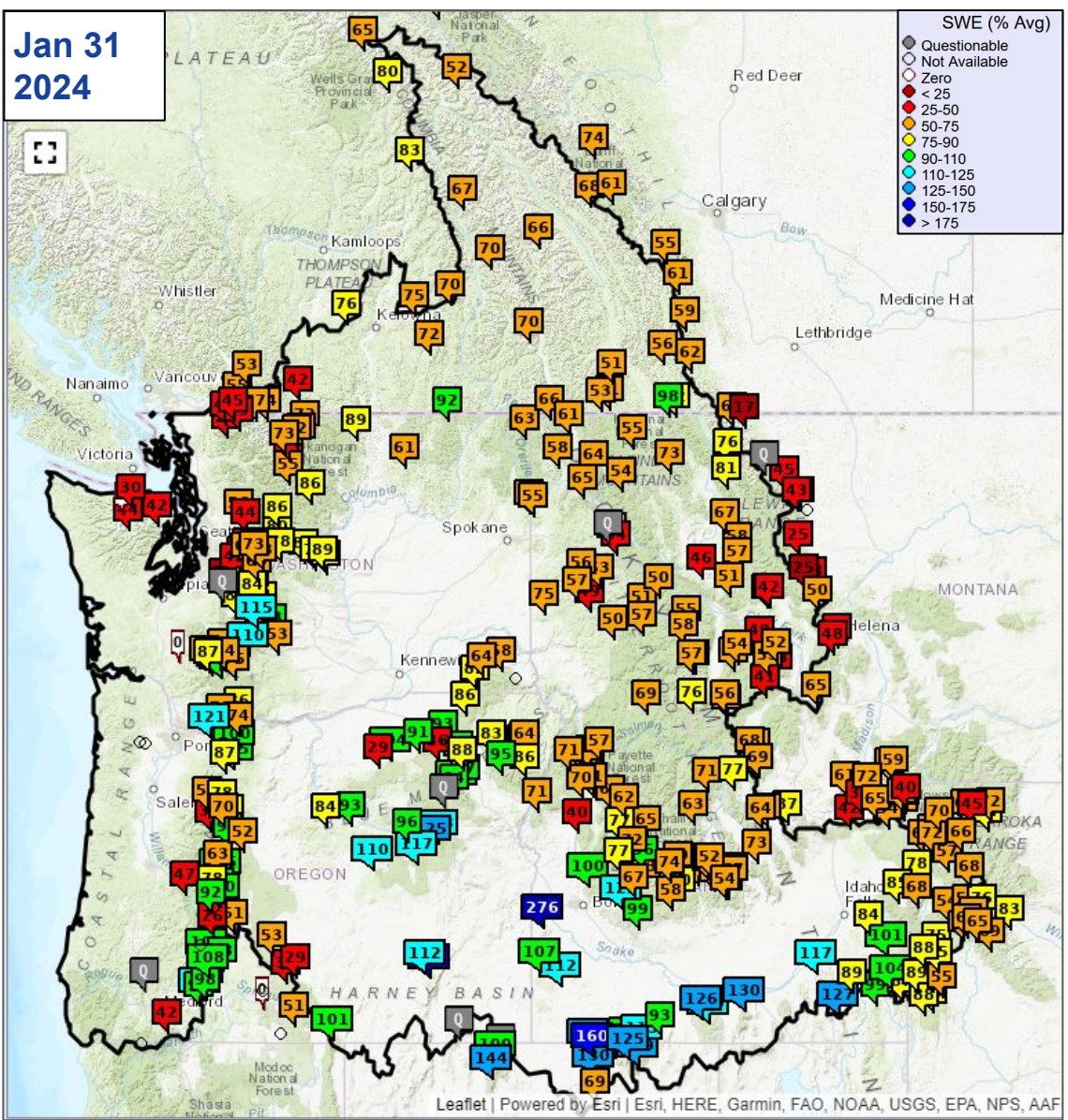


Jan 31  
2024



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

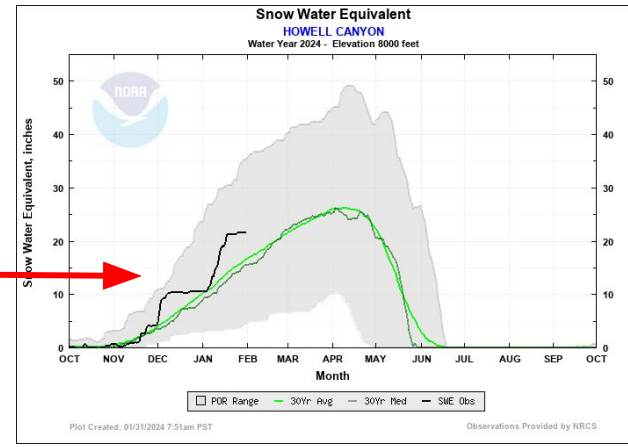
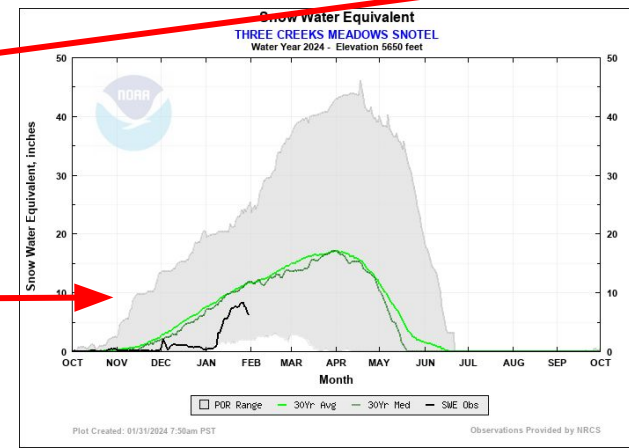
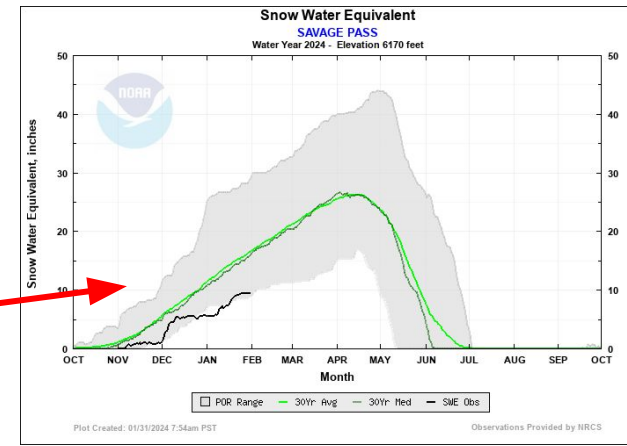
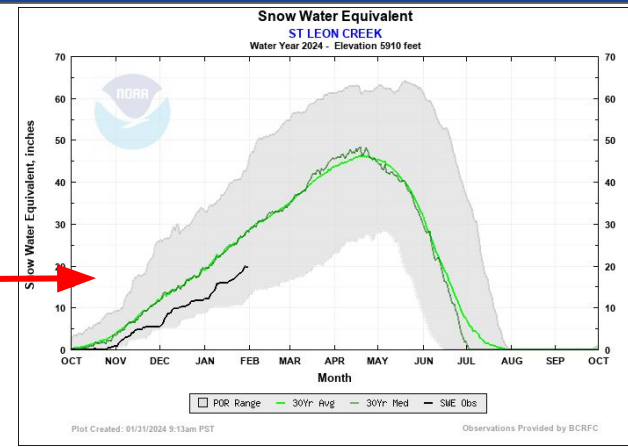
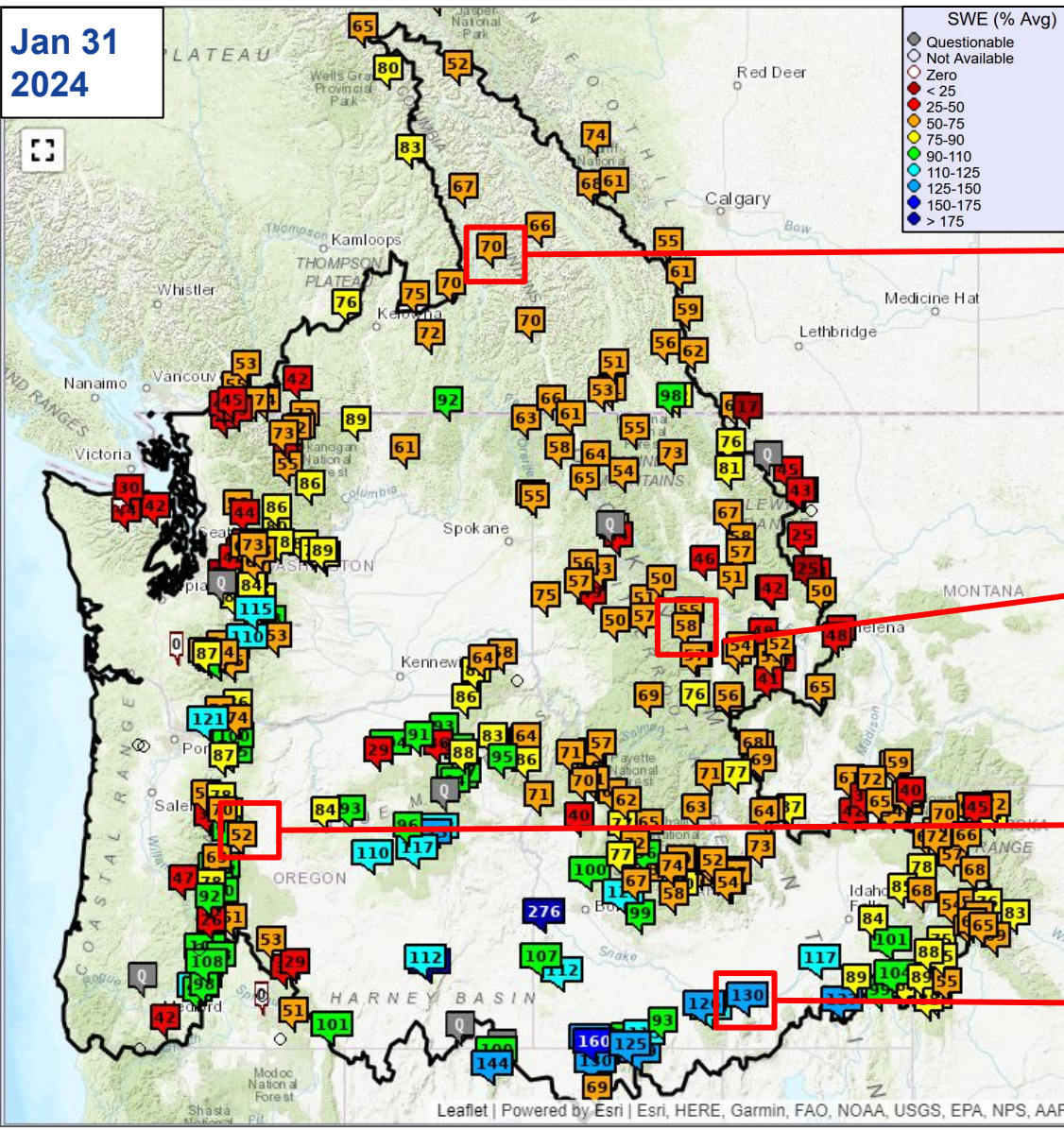
# Snowpack



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

# Snowpack

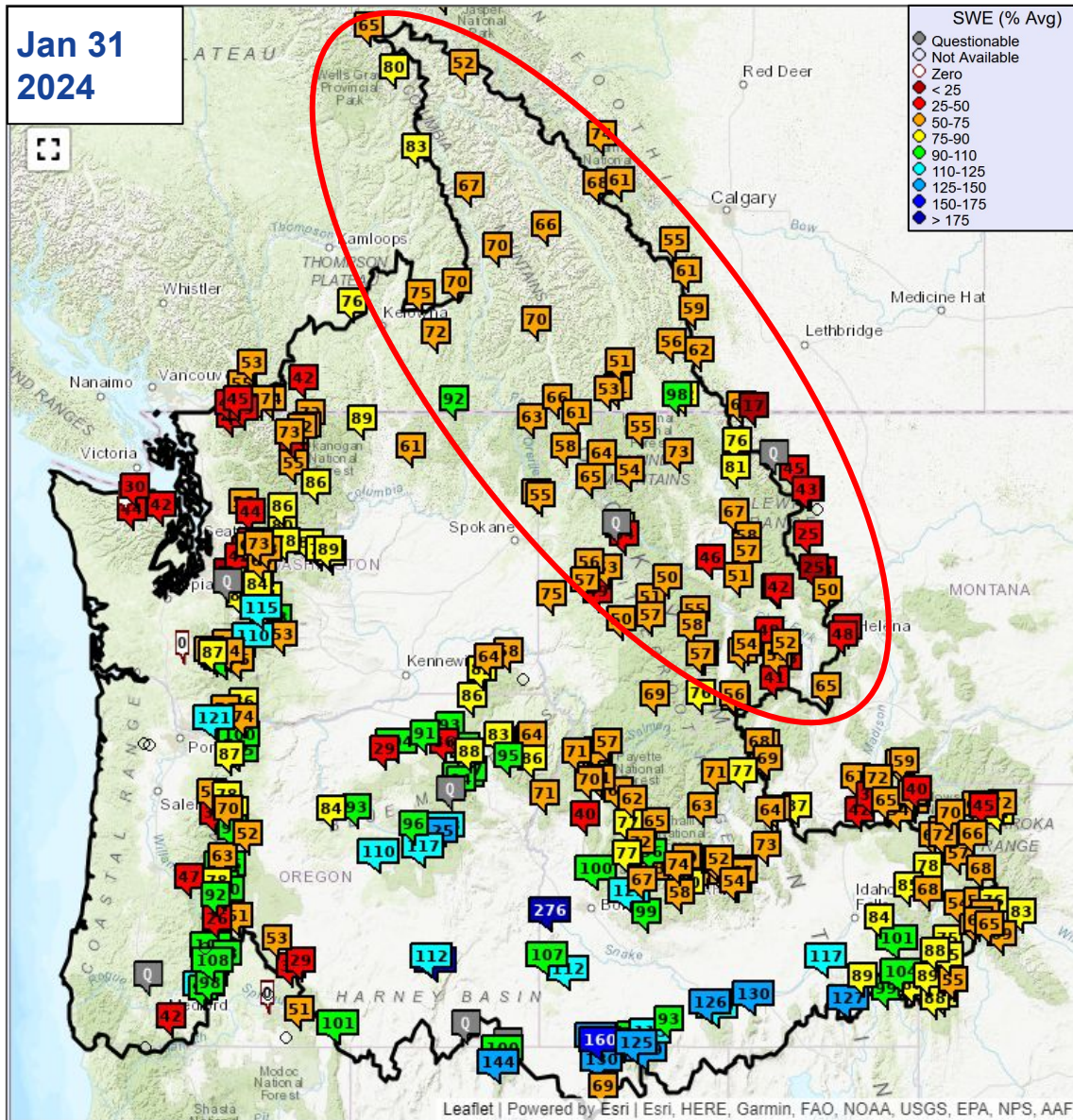
Jan 31  
2024



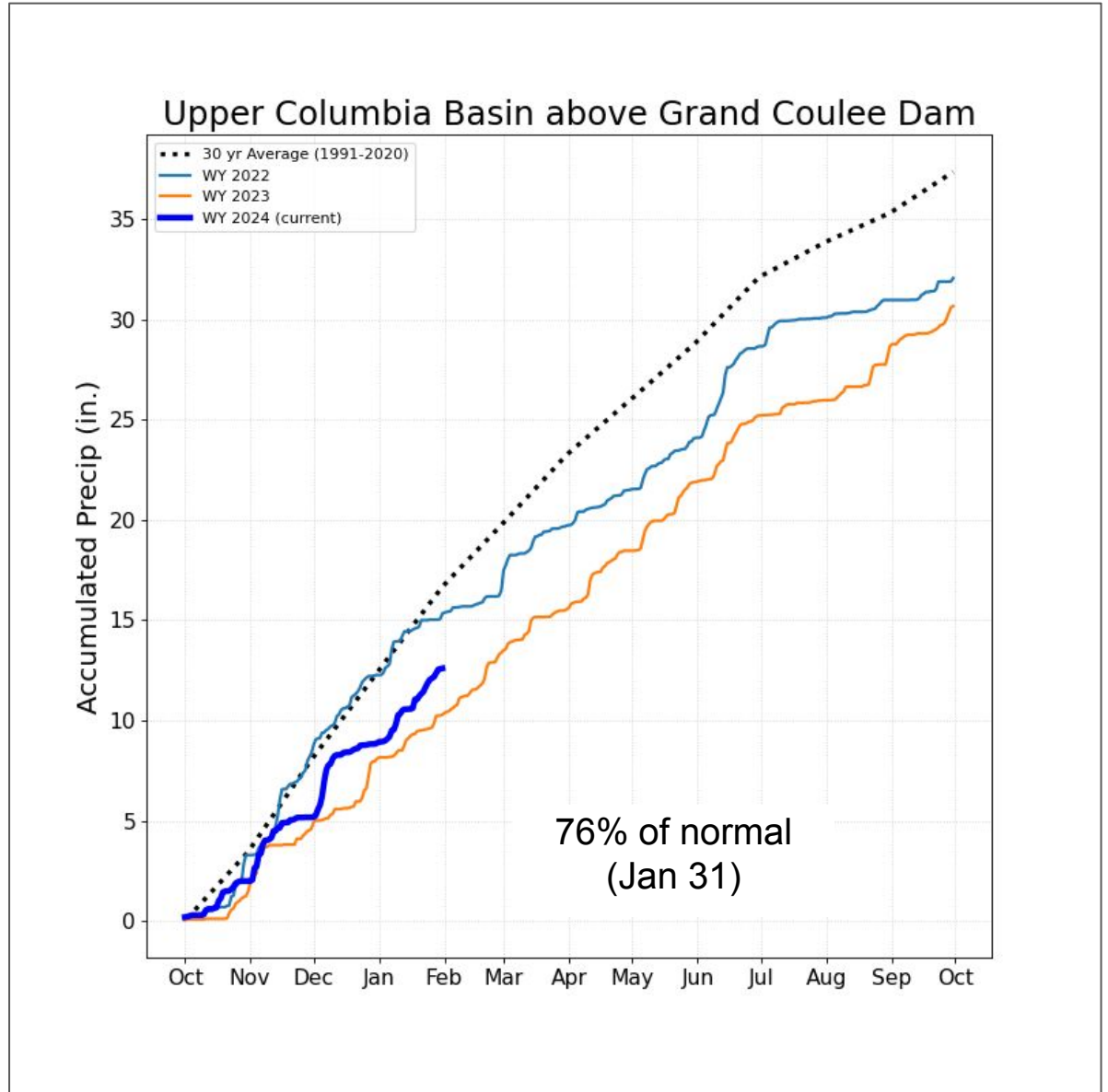
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# Snowpack and Precipitation

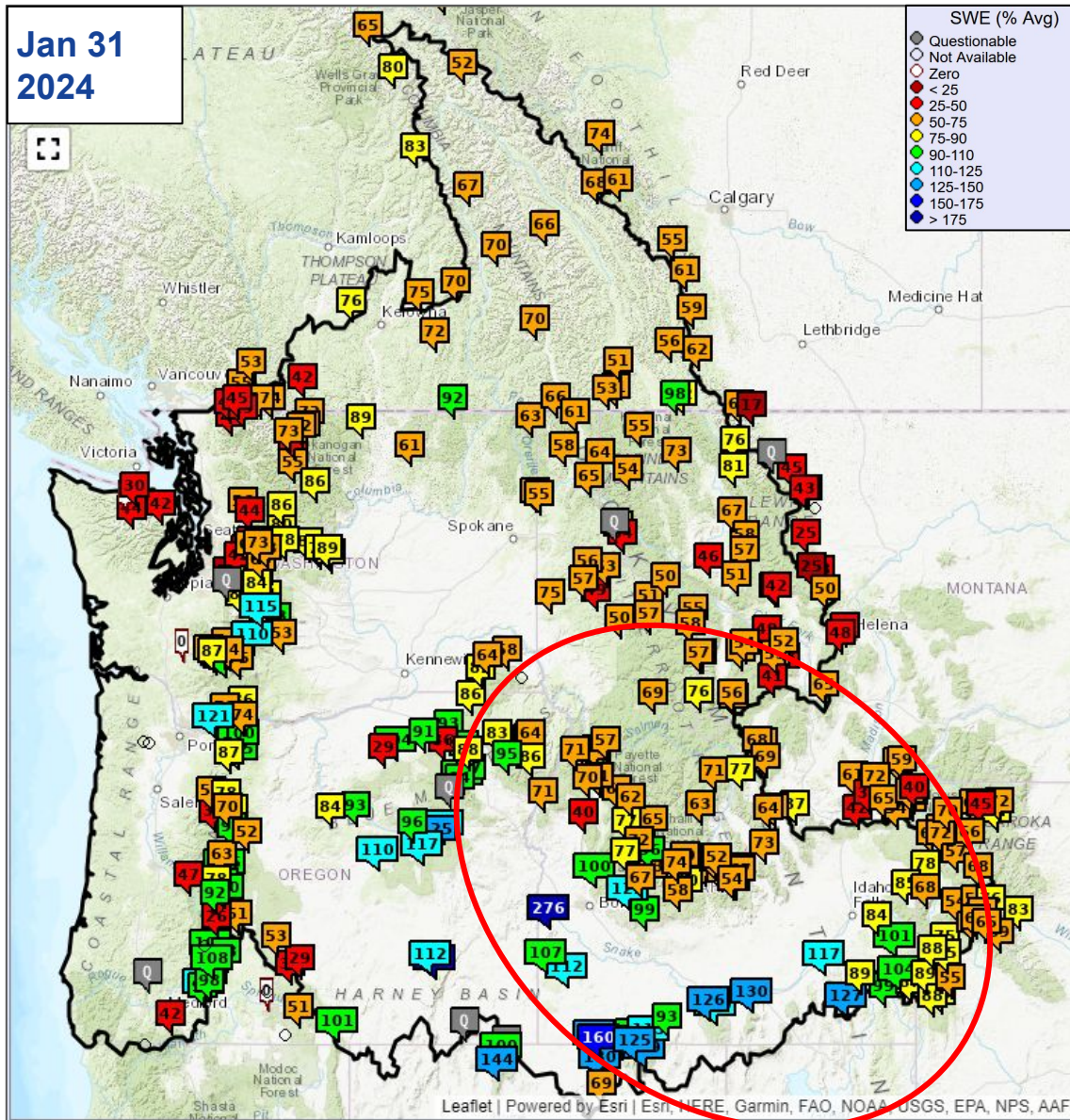


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

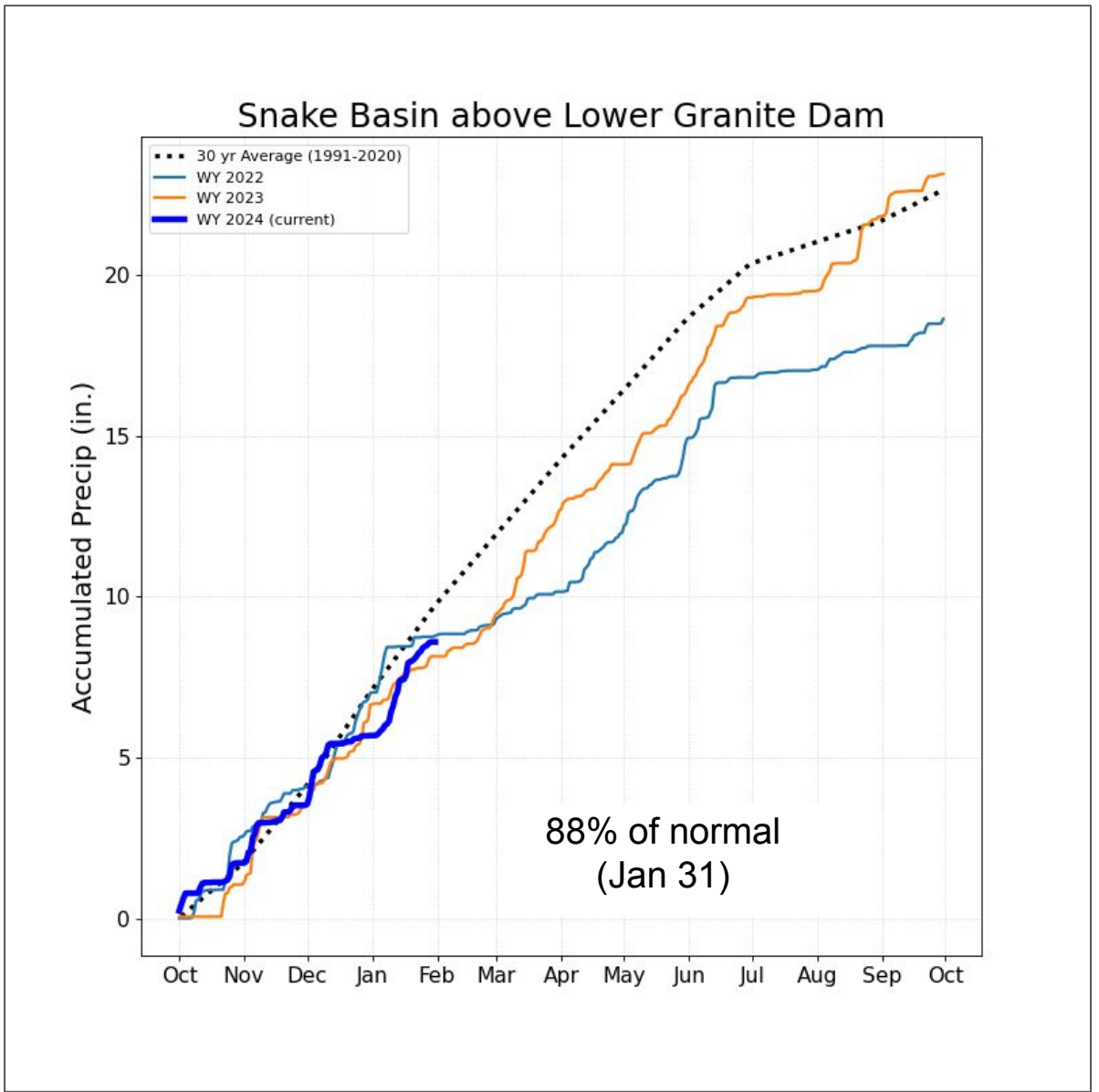


Precip averages from PRISM, OSU and PCIC.

# Snowpack and Precipitation

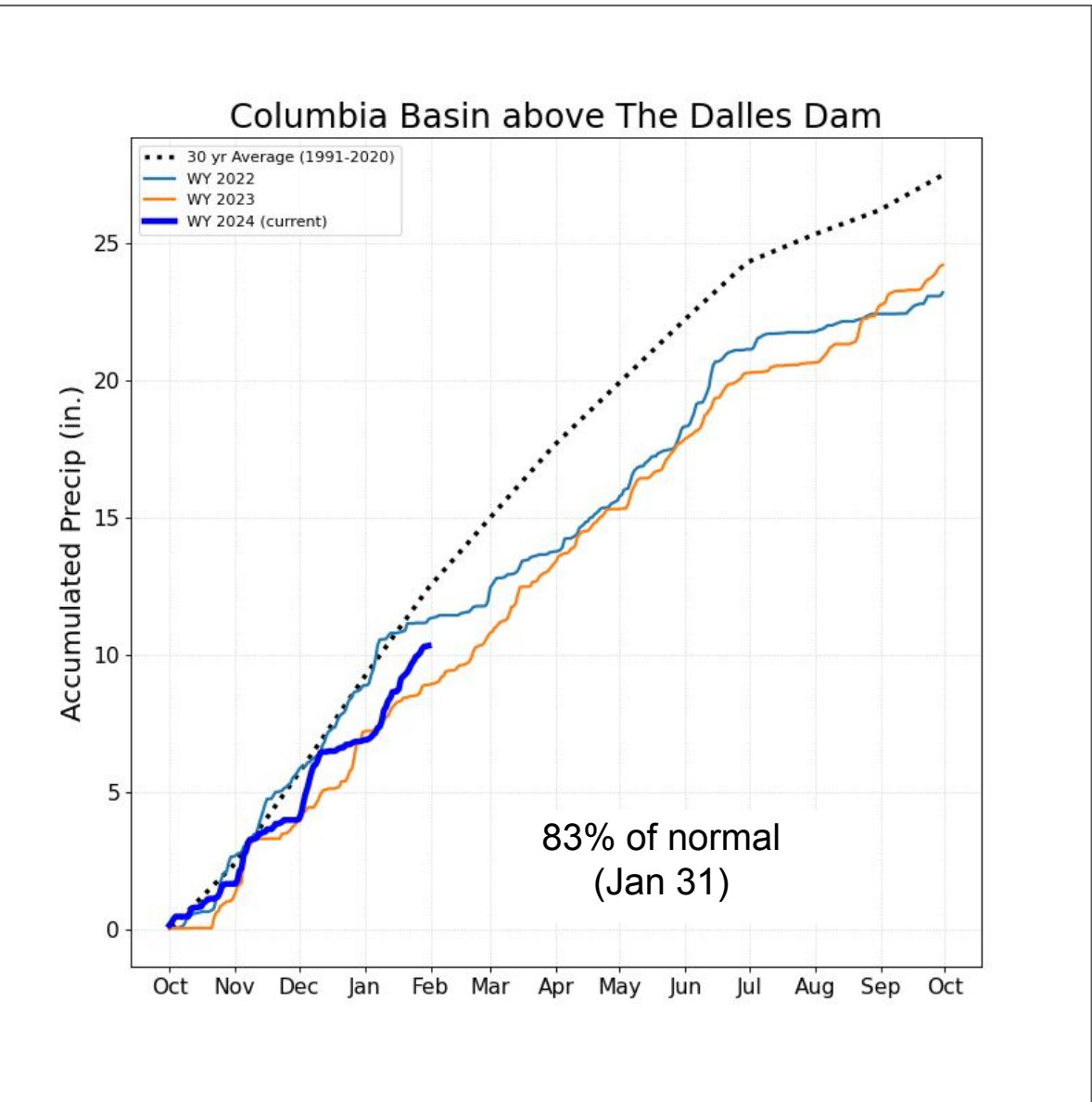
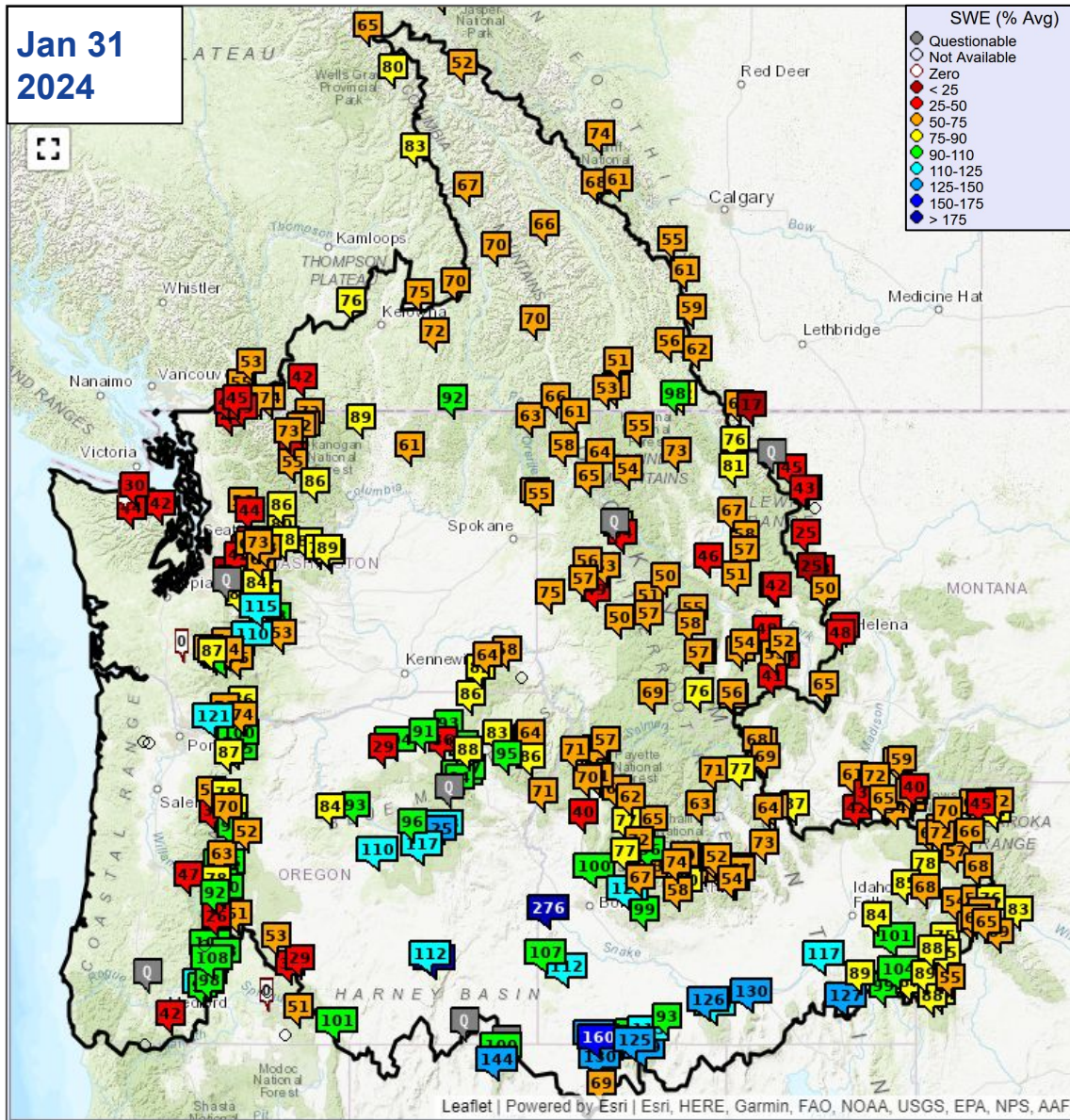


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.



Precip averages from PRISM, OSU and PCIC.

# Snowpack and Precipitation



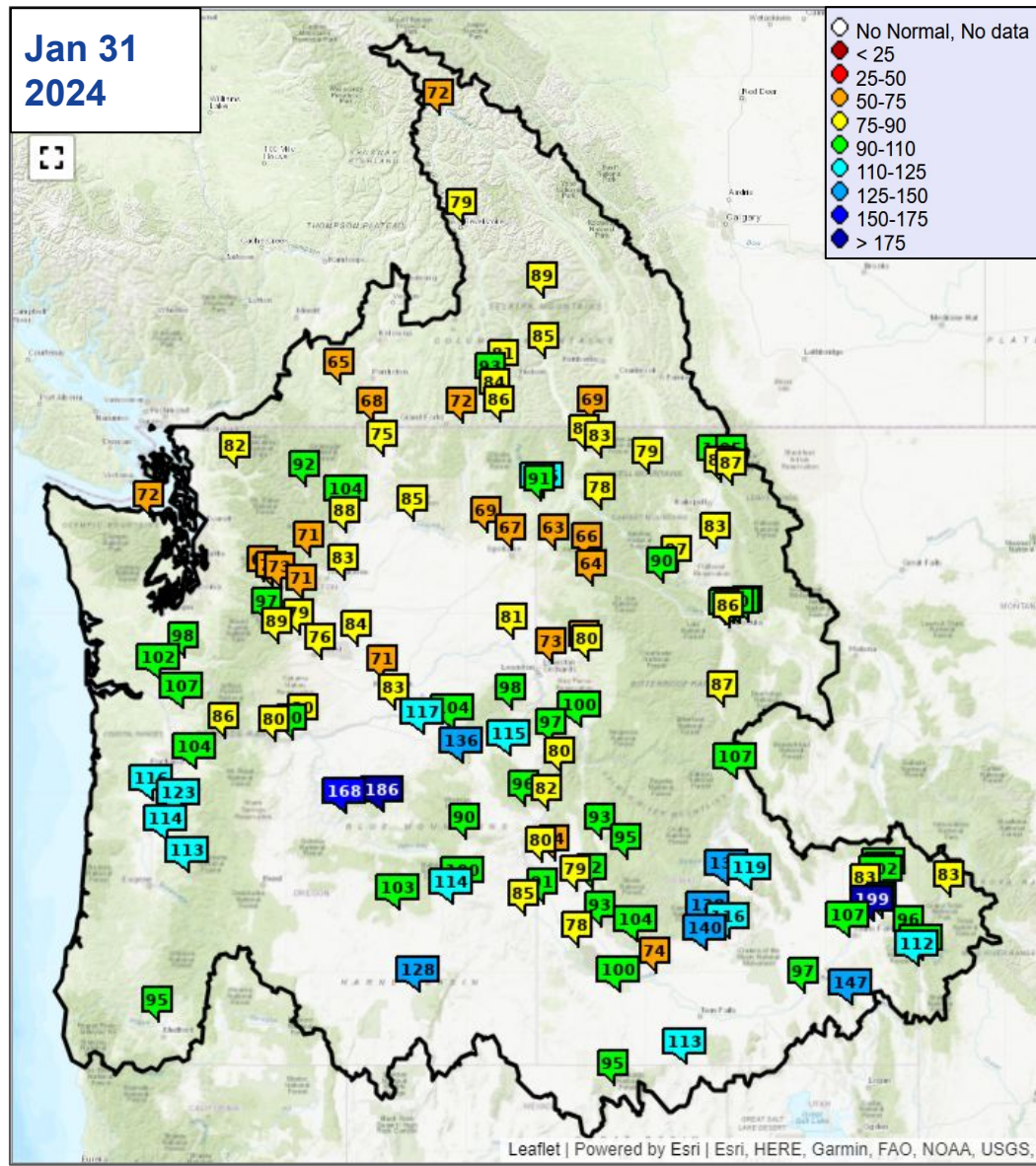
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Precip averages from PRISM, OSU and PCIC.



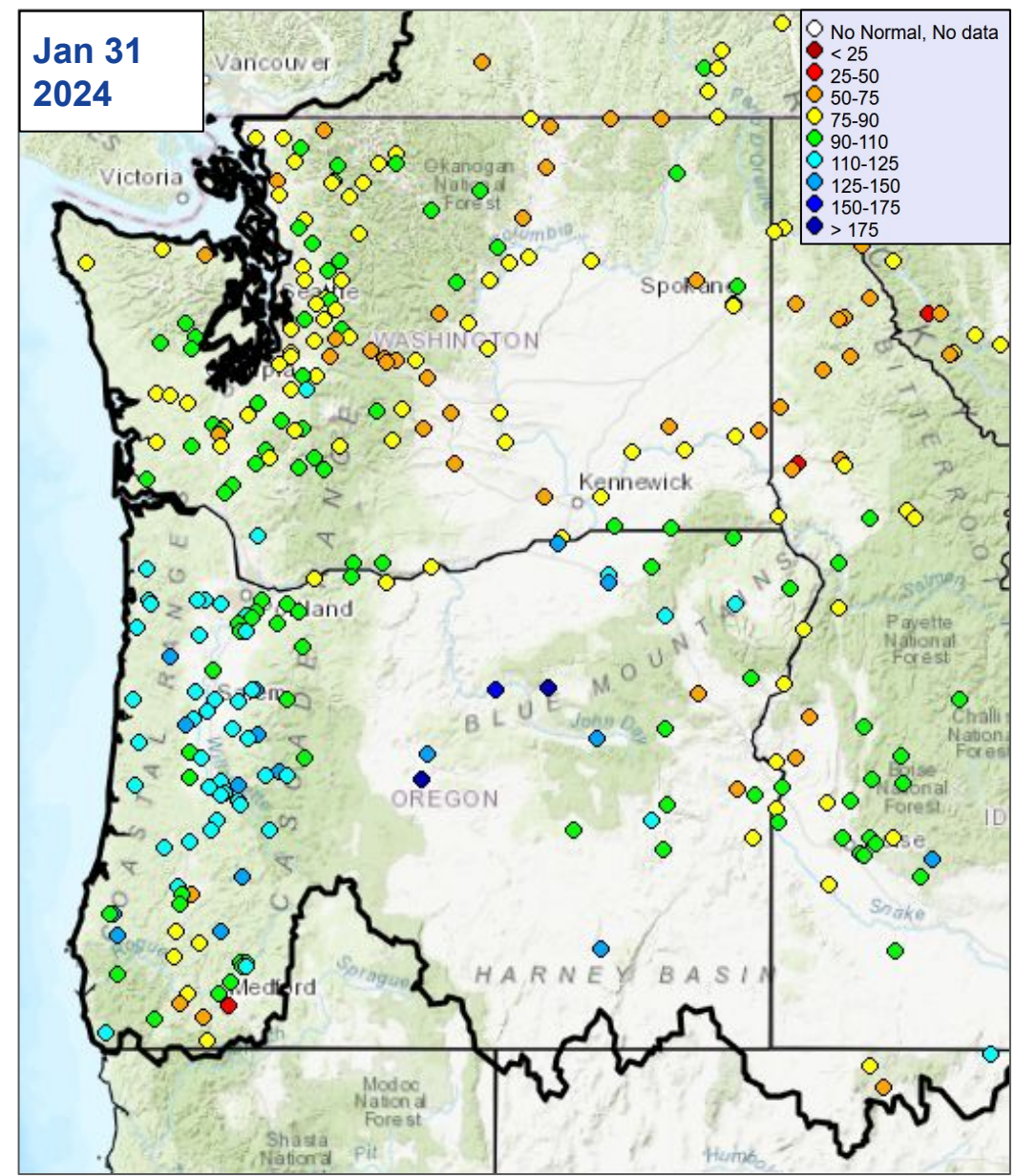
# Water Year to Date Adjusted Runoff

% Normal Runoff Oct 1 - Jan 31		
<u>Upper Columbia Basin</u>		
		<b>Δ since Jan 3</b>
Mica	72	-2
Duncan	89	-1
Queens Bay	85	-1
Libby	79	0
Hungry Horse	87	1
Grand Coulee	85	1
<u>Snake River Basin</u>		
American Falls	97	-1
Lucky Peak	93	-3
Dworshak	64	-1
Lower Granite	81	-3
<u>Lower Columbia Basin</u>		
The Dalles	80	0



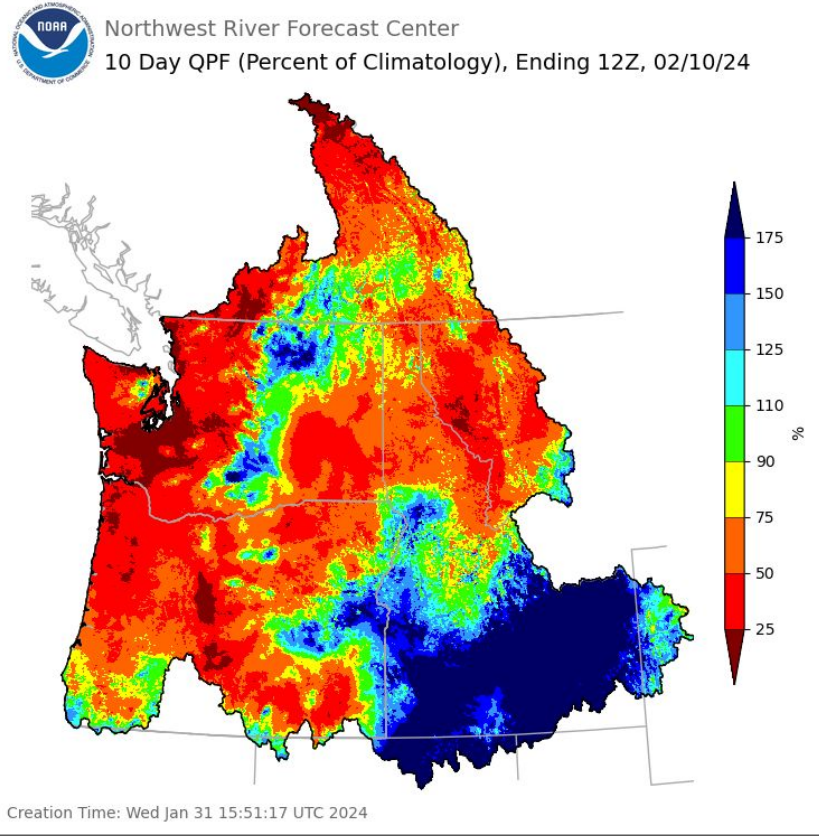
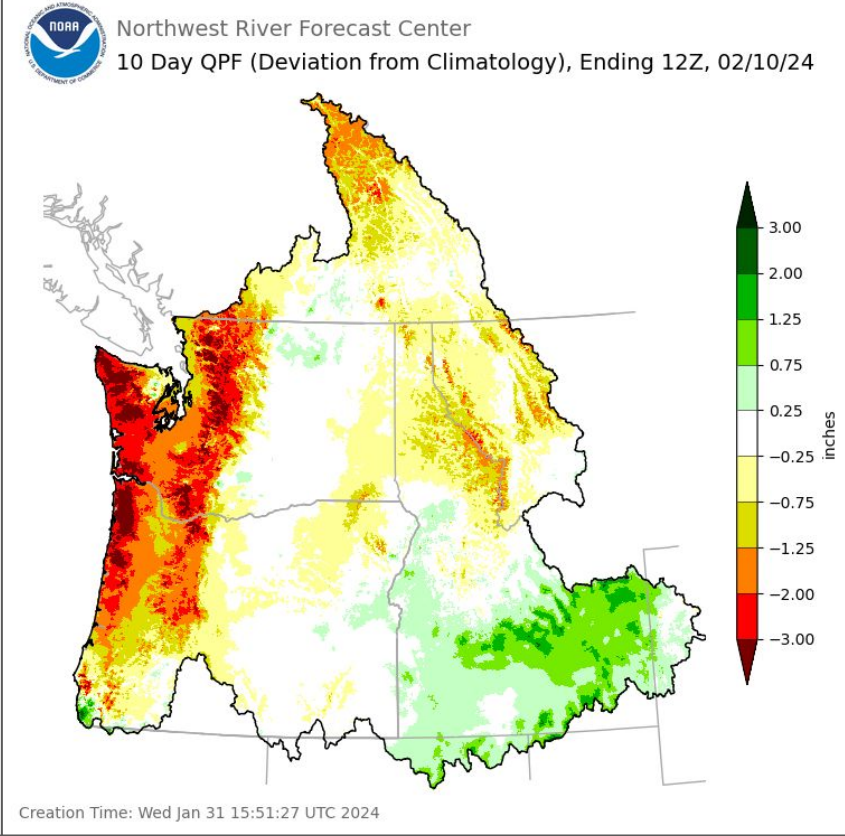
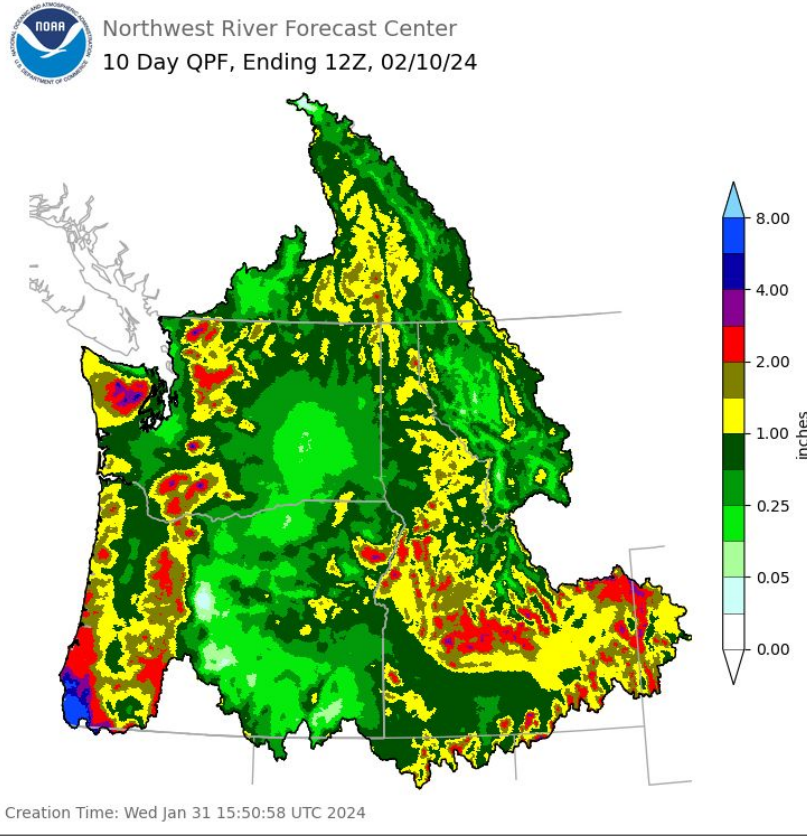
# Water Year to Date Natural Runoff

% Normal Runoff Oct 1 - Jan 31		
<u>Washington</u>		<u>Δ since Jan 3</u>
Skagit near Mt Vernon	77	6
Dungeness near Sequim	72	3
Chehalis at Porter	89	9
Okanogan at Malott	73	0
Methow near Pateros	104	2
Yakima at Parker	74	-4
Walla Walla near Touchet	96	2
<u>Oregon</u>		
Willamette at Salem	105	28
Rogue at Raygold	95	28
Umatilla at Pendleton	115	10
Grande Ronde at Troy	97	4
Crooked near Prineville	184	95
Owyhee Dam	84	3





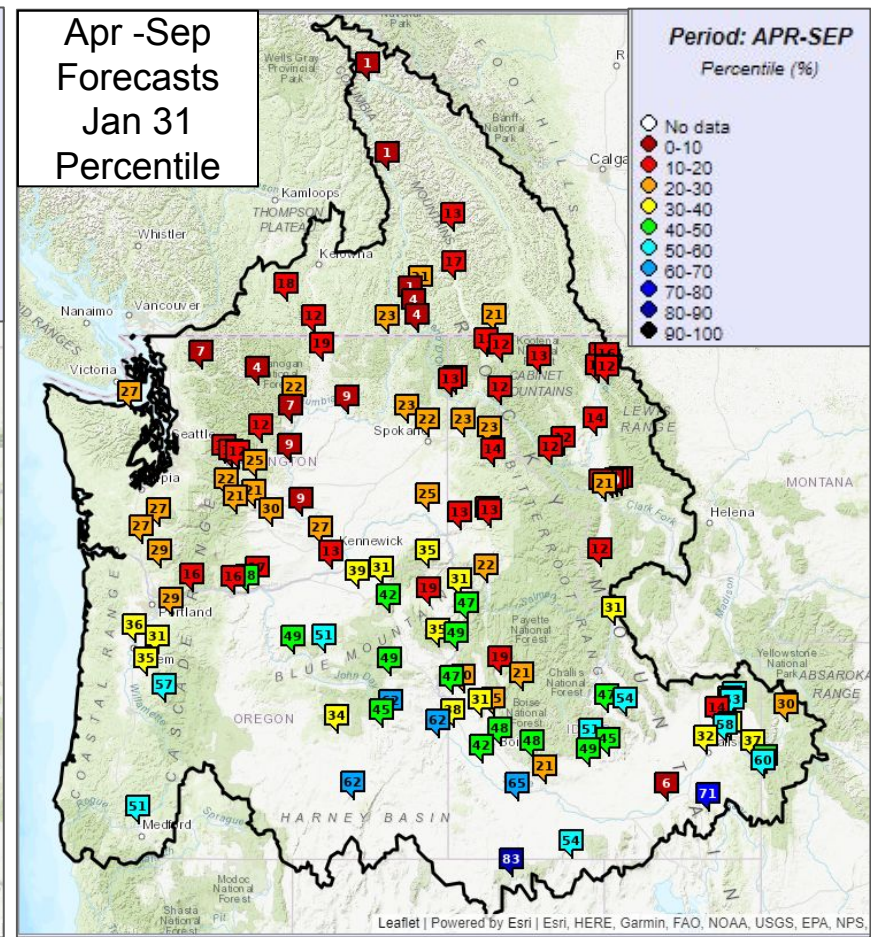
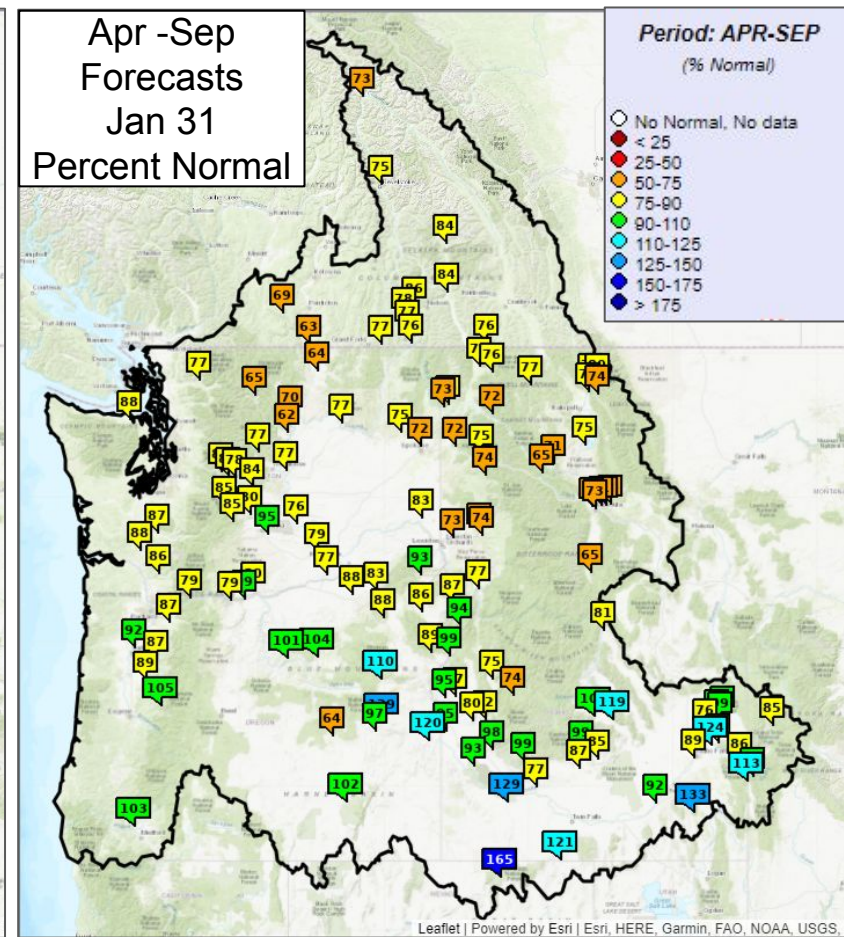
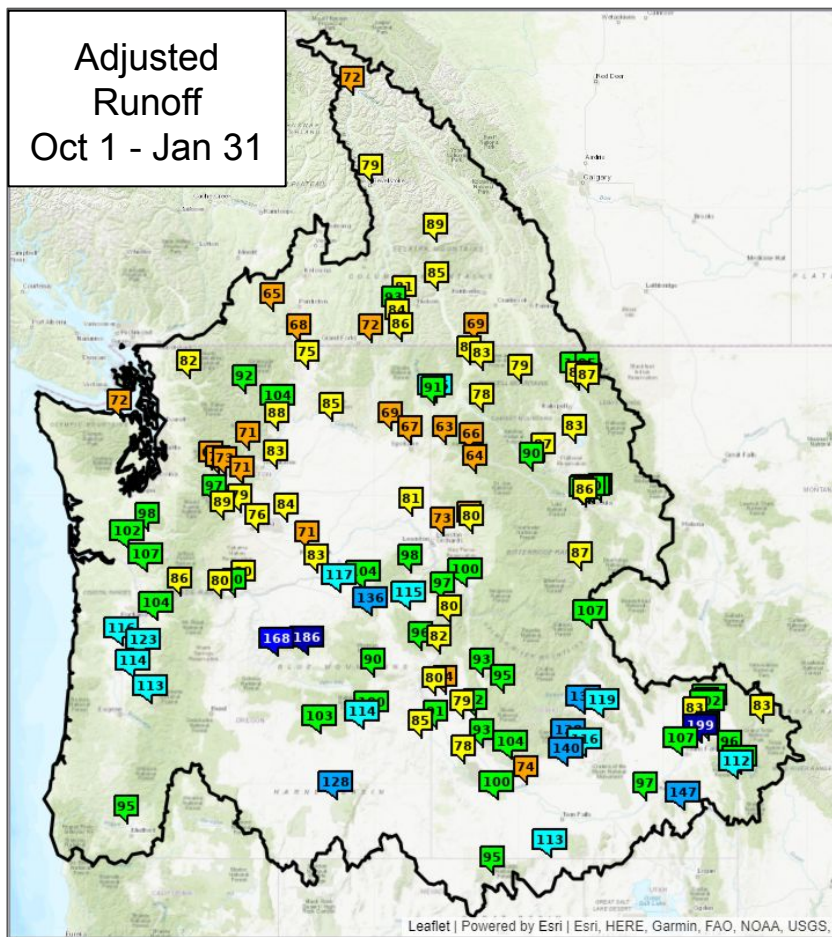
# 10 Day Precipitation Forecast used in ESP10



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).



# Adjusted Runoff and Water Supply Forecasts



[nwrfc.noaa.gov/ws/index.html?version=20190313v1](http://nwrfc.noaa.gov/ws/index.html?version=20190313v1)

# ESP10 Water Supply Forecasts

## % Normal Apr-Sep Volume

### Upper Columbia Basin

**Δ since Jan 3**

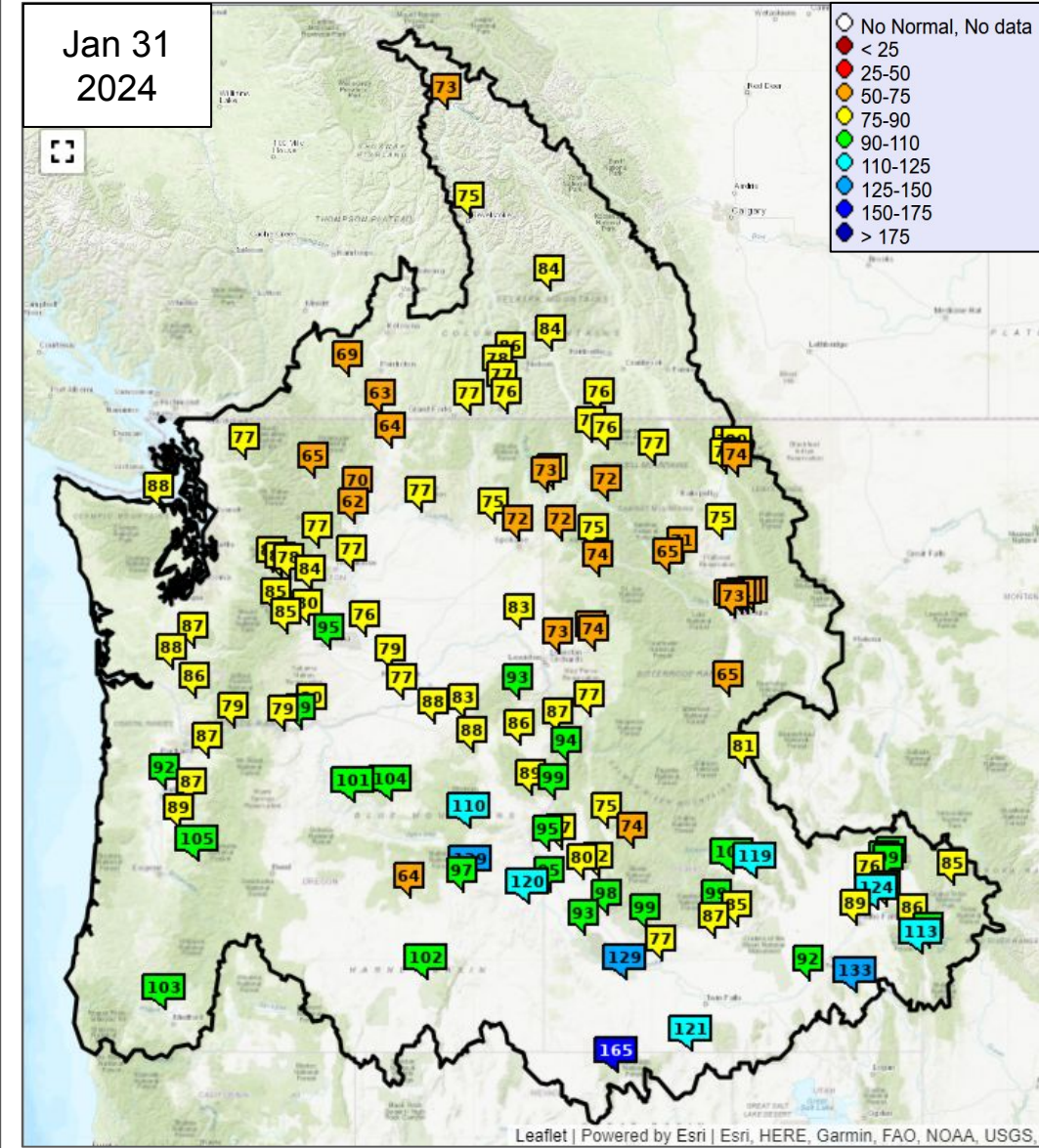
Mica	73	-2
Duncan	84	1
Queens Bay	84	4
Libby	77	-5
Hungry Horse	74	-3
Grand Coulee	77	0

### Snake River Basin

American Falls	92	18
Lucky Peak	98	19
Dworshak	72	-4
Lower Granite	83	1

### Lower Columbia Basin

The Dalles	79	0
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# Natural Water Supply Forecasts

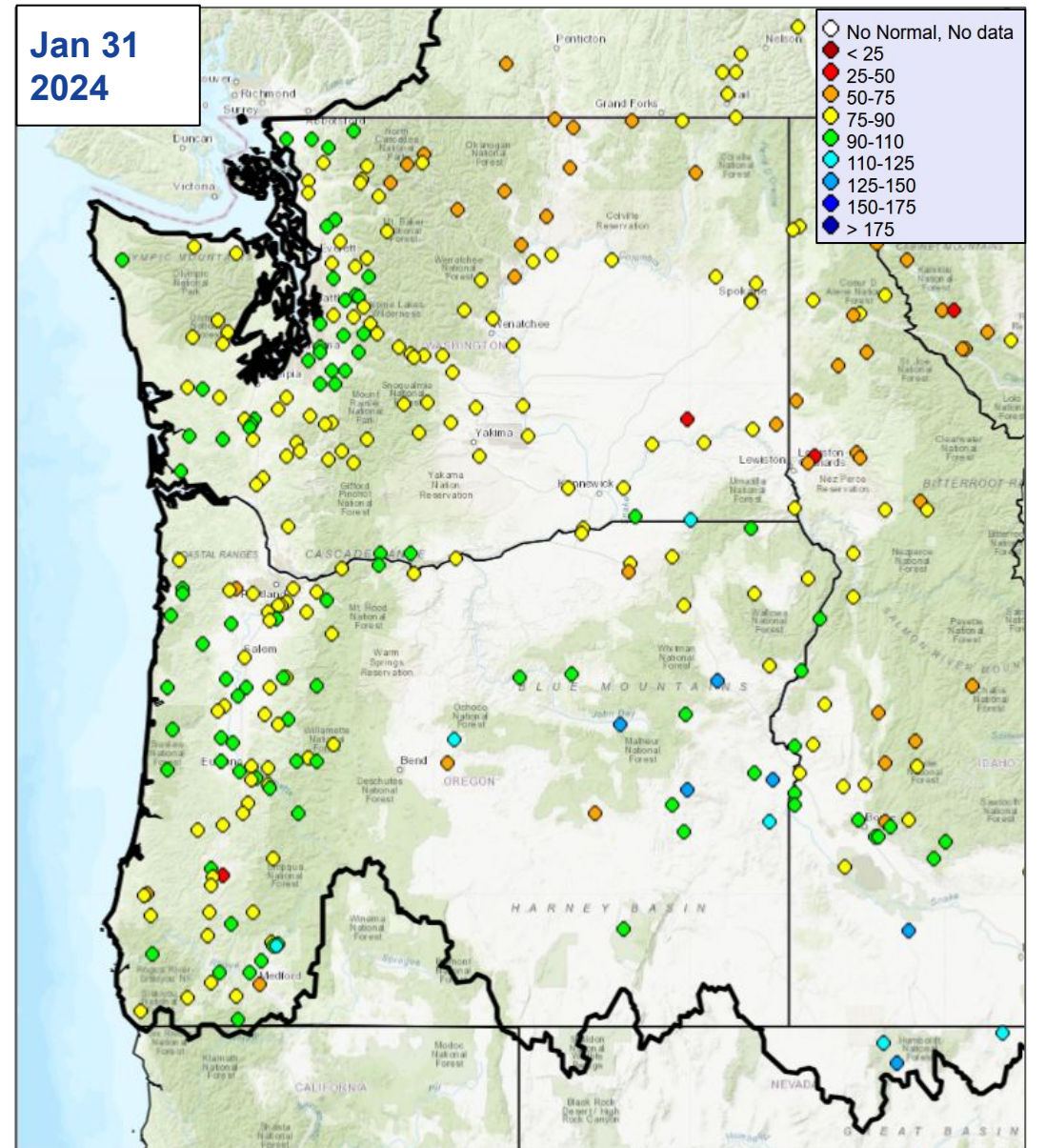
## % Normal Apr-Sep Volume

### Washington

		<b>Δ since Jan 3</b>
Skagit near Mt Vernon	79	-3
Dungeness near Sequim	87	-1
Chehalis at Porter	86	-2
Okanogan at Malott	63	3
Methow near Pateros	70	1
Yakima at Parker	87	0
Walla Walla near Touchet	98	11

### Oregon

Willamette at Salem	88	-1
Rogue at Raygold	105	11
Umatilla at Pendleton	89	-7
Grande Ronde at Troy	93	-3
Crooked near Prineville	63	-14
Owyhee Dam	119	40





# ESP10 Water Supply Forecast

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

**Official Water Supply**  
ESP with 10 Days QPF Ensemble: 2024-01-31 Issued: 2024-01-31

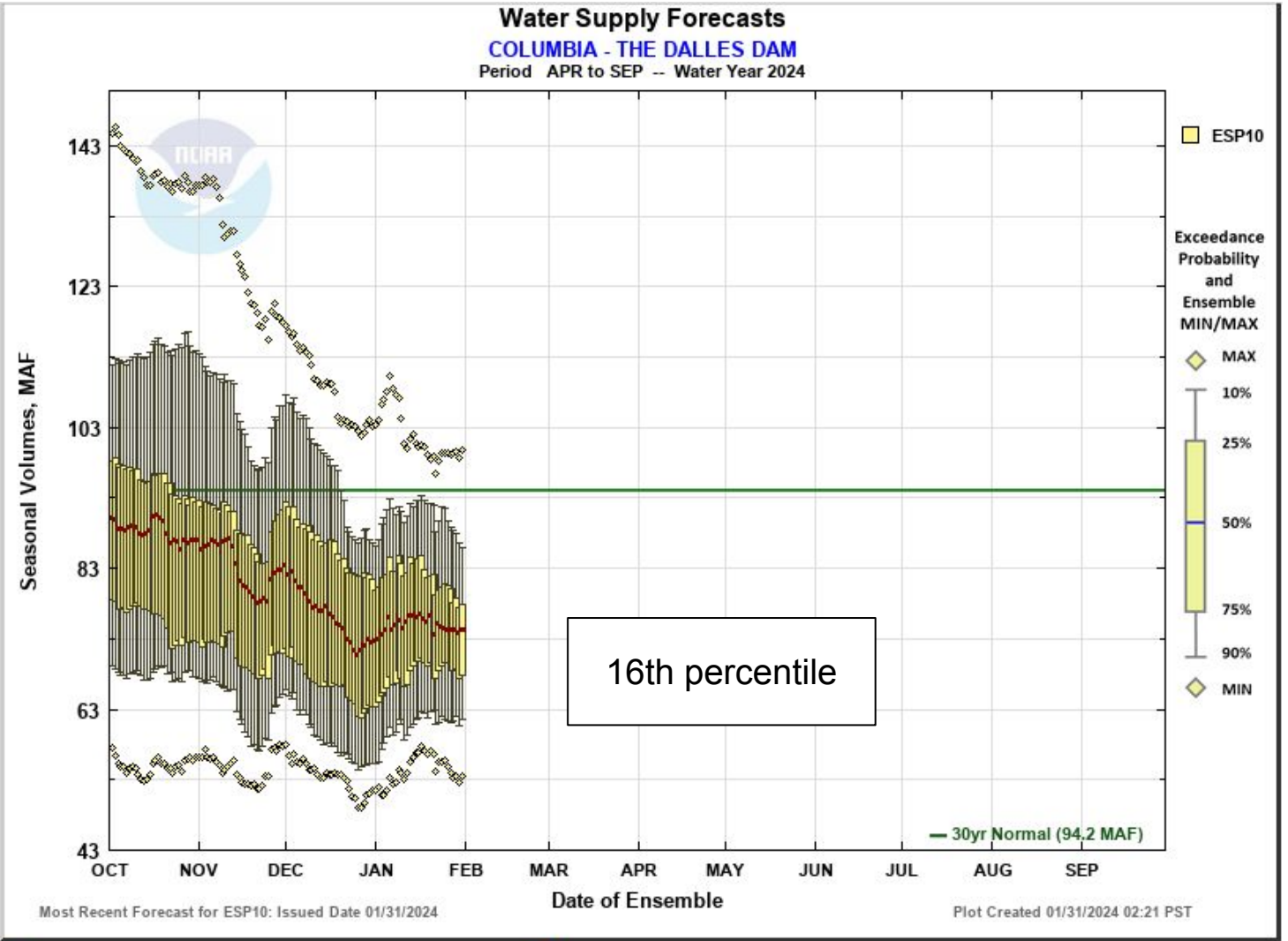
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	61666	74484	79	86108	94166
APR-JUL	51945	63432	77	73436	81933
APR-AUG	57330	70112	79	80271	89196
JAN-SEP	79916	92878	80	110935	115946
JAN-JUL	70717	82344	79	100022	103714
OCT-SEP	93170	106133	80	124189	132314

**Experimental Water Supply**  
HEFS with 15 days EQPF Ensemble: 2024-01-31 Issued: 2024-01-31

APR-SEP	60982	74151	79	88089	94166
APR-JUL	51324	62425	76	75000	81933
APR-AUG	56677	69535	78	82353	89196
JAN-SEP	82760	93844	81	112152	115946
JAN-JUL	72605	82566	80	100106	103714
OCT-SEP	96015	107098	81	125407	132314

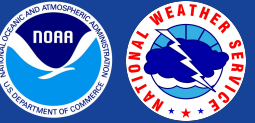
**Reference**  
ESP with 0 Days QPF Ensemble: 2024-01-31 Issued: 2024-01-31

APR-SEP	62373	75890	81	89533	94166
APR-JUL	52482	63436	77	75927	81933
APR-AUG	58013	70571	79	83538	89196
JAN-SEP	84212	94741	82	112610	115946
JAN-JUL	73708	84186	81	99920	103714
OCT-SEP	97467	107995	82	125865	132314

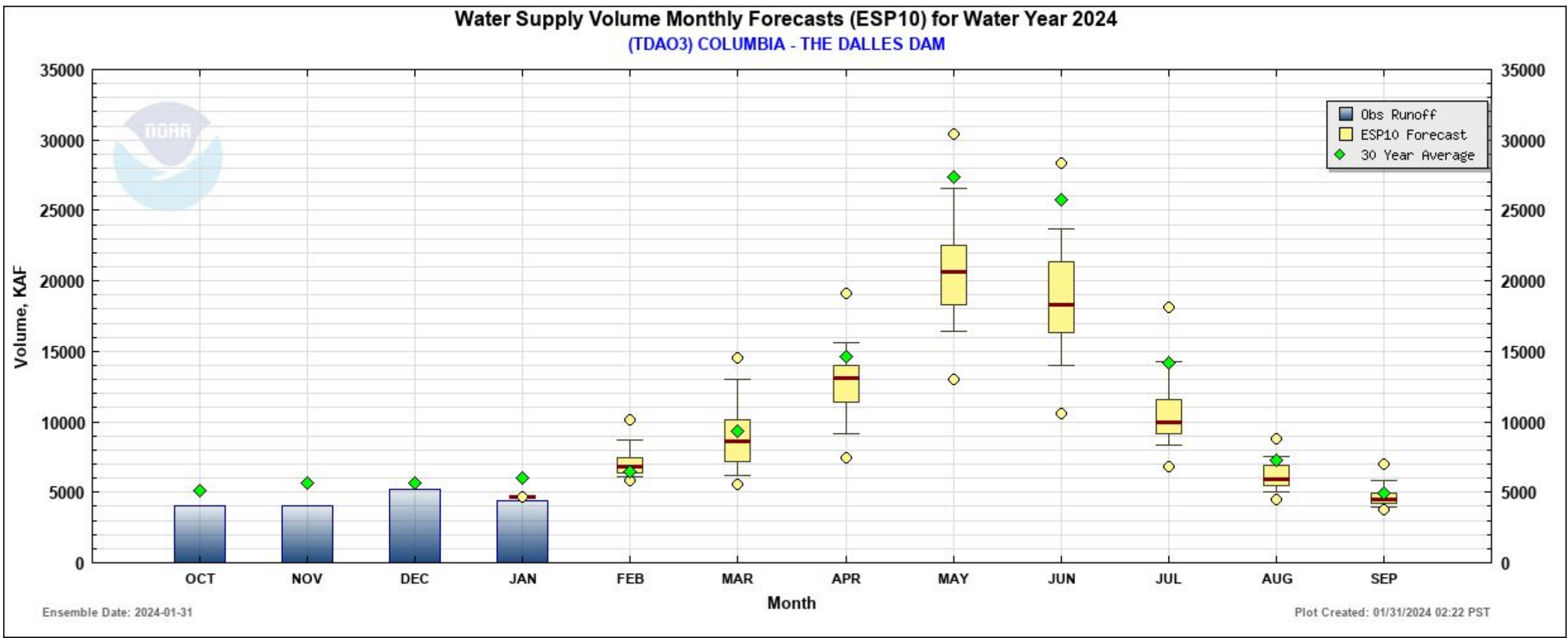


Max Scale 
  Scale To Data 
  Scale To Last 45 Days 
  Show Min/Max Ensemble Volume 
  Show Tooltips Help

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



# ESP10 Water Supply Forecast



[nwrfc.noaa.gov/water\\_supply/monthly/monthly\\_forecasts.php?id=TDA03](http://nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=TDA03)



# ESP10 Water Supply Forecast

## COLUMBIA - GRAND COULEE DAM (GCDW1) Forecasts for Water Year 2024

**Official Water Supply**  
ESP with 10 Days QPF Ensemble: 2024-01-31 Issued: 2024-01-31

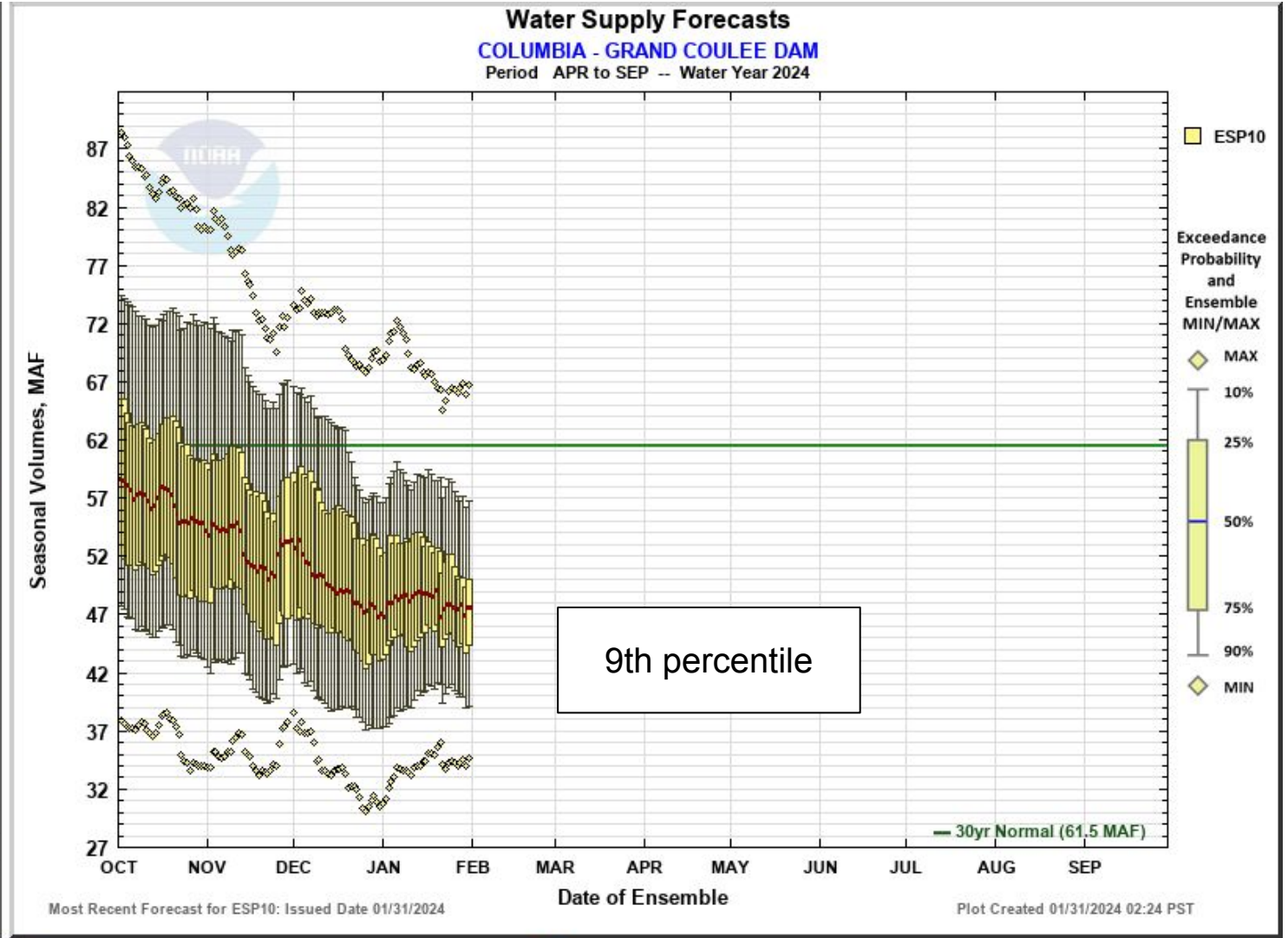
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	39196	47585	77	56768	61483
APR-JUL	32670	40182	76	47287	52774
APR-AUG	36511	44950	77	52522	58186
JAN-SEP	48932	56076	80	66416	70457
JAN-JUL	42180	48795	79	56975	61749
OCT-SEP	56017	63161	80	73501	78842

**Experimental Water Supply**  
HEFS with 15 days EQPF Ensemble: 2024-01-31 Issued: 2024-01-31

APR-SEP	39747	47346	77	57307	61483
APR-JUL	32768	40258	76	47555	52774
APR-AUG	36602	44785	77	53355	58186
JAN-SEP	49799	56930	81	65787	70457
JAN-JUL	43009	49628	80	56444	61749
OCT-SEP	56884	64015	81	72872	78842

**Reference**  
ESP with 0 Days QPF Ensemble: 2024-01-31 Issued: 2024-01-31

APR-SEP	40543	48625	79	58050	61483
APR-JUL	33744	40643	77	48240	52774
APR-AUG	38054	45468	78	54028	58186
JAN-SEP	49664	57658	82	66914	70457
JAN-JUL	42966	50523	82	56689	61749
OCT-SEP	56749	64742	82	73998	78842

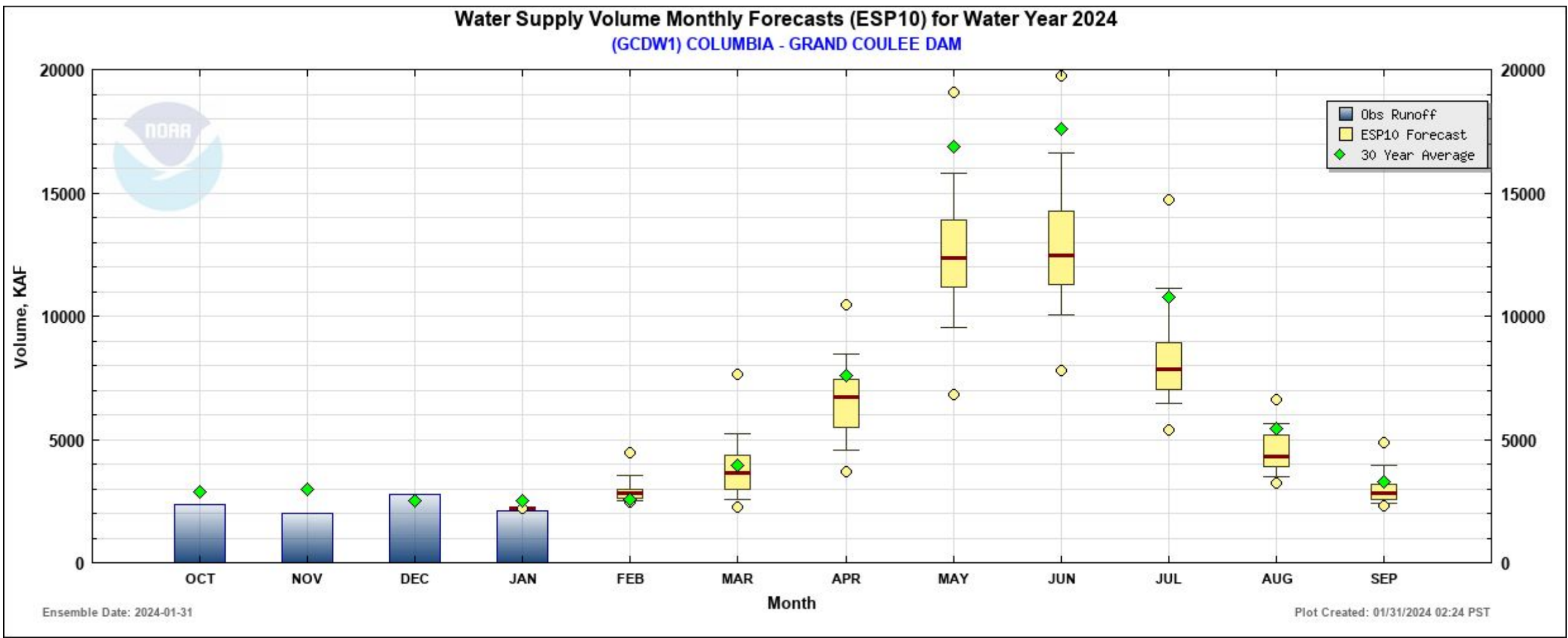


Max Scale 
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  Scale To Last 45 Days 
  Show Min/Max Ensemble Volume 
  Show Tooltips Help

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



# ESP10 Water Supply Forecast



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



# ESP10 Water Supply Forecast

## SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2024

**Official Water Supply**  
ESP with 10 Days QPF Ensemble: 2024-01-31 Issued: 2024-01-31

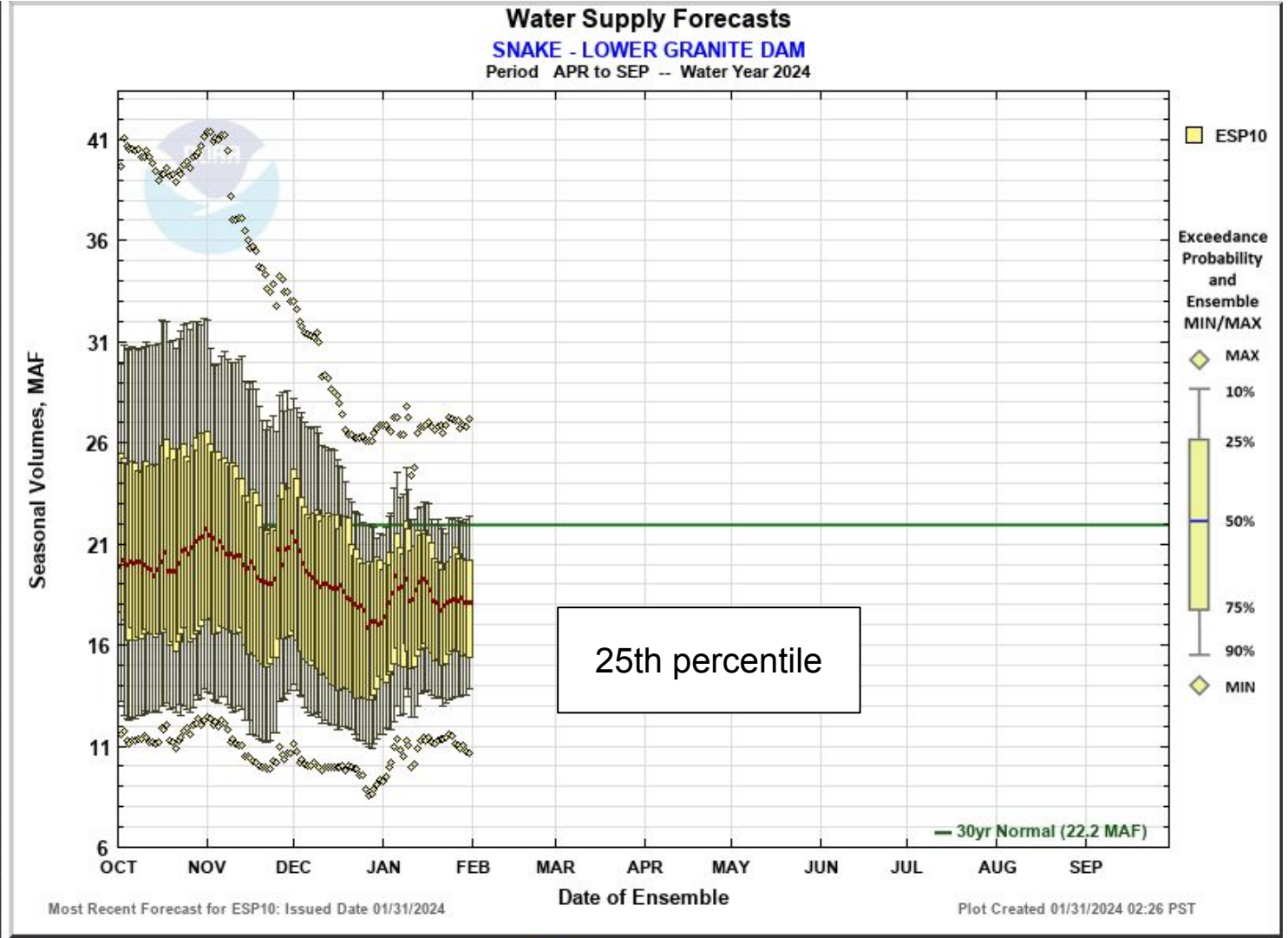
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	14130	18379	83	22676	22232
APR-JUL	12063	16142	81	20079	19946
APR-AUG	13067	17270	82	21405	21121
JAN-SEP	20208	25284	85	30343	29736
JAN-JUL	18206	23081	84	27956	27450
OCT-SEP	24053	29129	85	34187	34287

**Experimental Water Supply**  
HEFS with 15 days EQPF Ensemble: 2024-01-31 Issued: 2024-01-31

APR-SEP	13421	17798	80	22092	22232
APR-JUL	11394	15634	78	19666	19946
APR-AUG	12369	16716	79	20854	21121
JAN-SEP	19911	24524	82	29535	29736
JAN-JUL	17956	22163	81	26909	27450
OCT-SEP	23756	28368	83	33380	34287

**Reference**  
ESP with 0 Days QPF Ensemble: 2024-01-31 Issued: 2024-01-31

APR-SEP	13553	18319	82	22010	22232
APR-JUL	11595	16017	80	19491	19946
APR-AUG	12542	17134	81	20764	21121
JAN-SEP	19748	25092	84	29332	29736
JAN-JUL	17808	22852	83	26818	27450
OCT-SEP	23593	28937	84	33177	34287

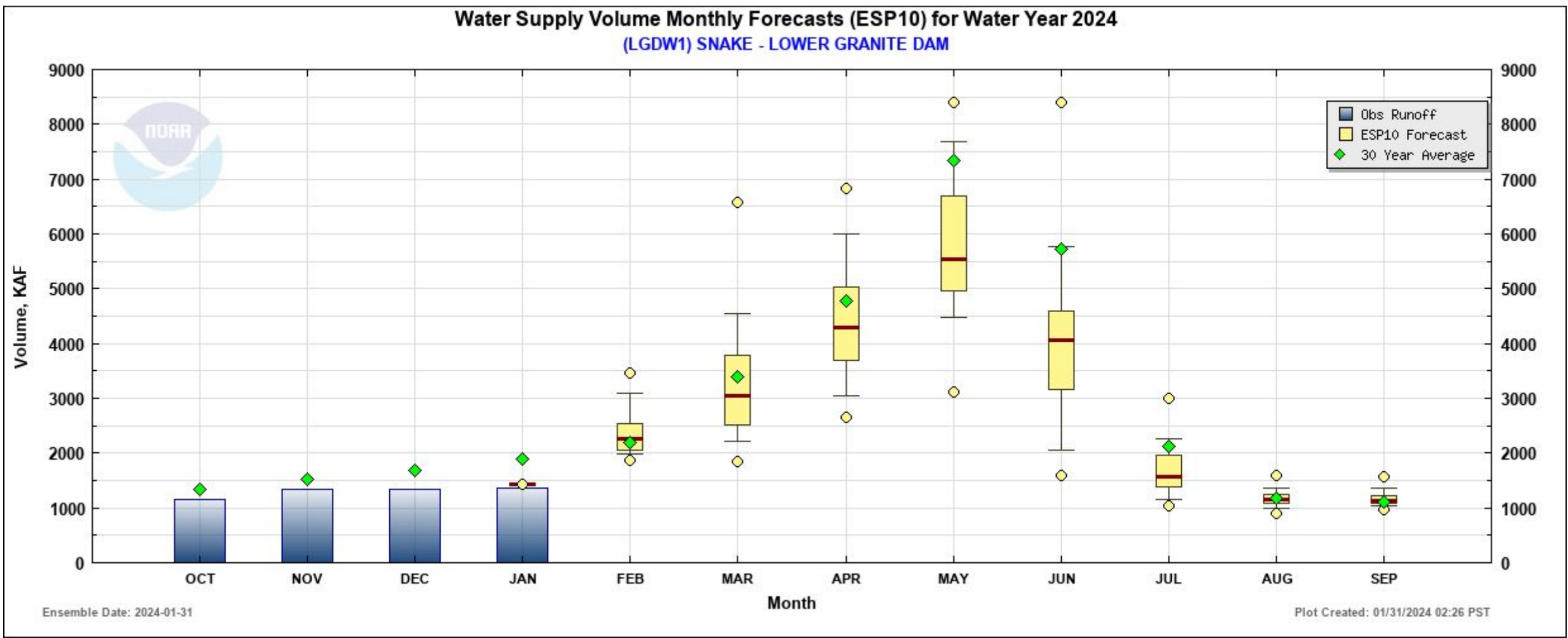


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[nwrfc.noaa.gov/water\\_supply/ws\\_forecasts.php?id=LGDW1](http://nwrfc.noaa.gov/water_supply/ws_forecasts.php?id=LGDW1)



# ESP10 Water Supply Forecast



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



## Takeaways

- Water year 2024 has been mostly drier and warmer than normal.
- Snowpacks are below normal, in some cases record low. An exception is southern Idaho/SE Oregon where snowpacks are above normal.
- Runoff volumes since October 1 are a mix of below and above normal. Runoff varies from above normal in parts of Oregon to below normal in the NE.
- The next 10 days are expected to bring lower than normal amounts of precipitation to the basin, again with the exception of southern Idaho. Temperature will cool.
- Apr-Sep volume forecasts are a mix of normal to below normal with higher forecasts in the SE.





# Schedule for Live Water Supply Briefings

Mar	Apr	May	Jun
7	4	2	TBD

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

[Click here for Registration](#)



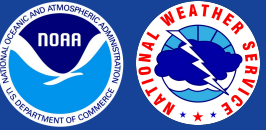
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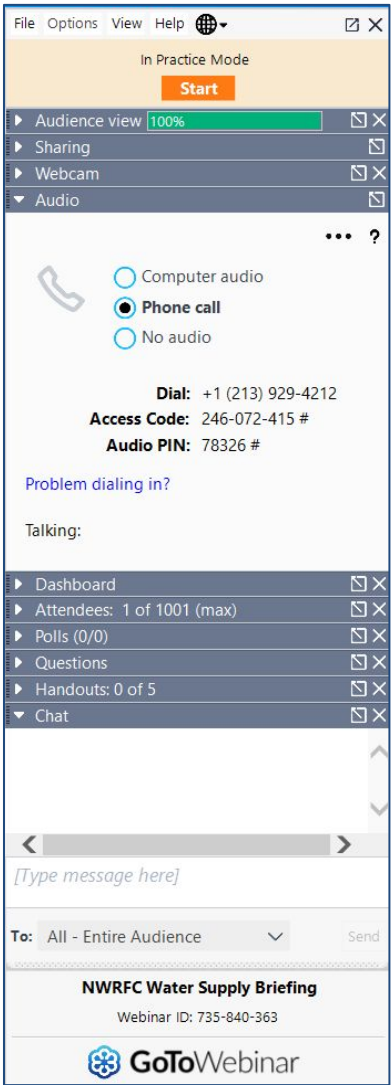
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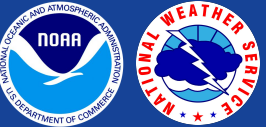
# Questions?



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.

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# Extra Slides



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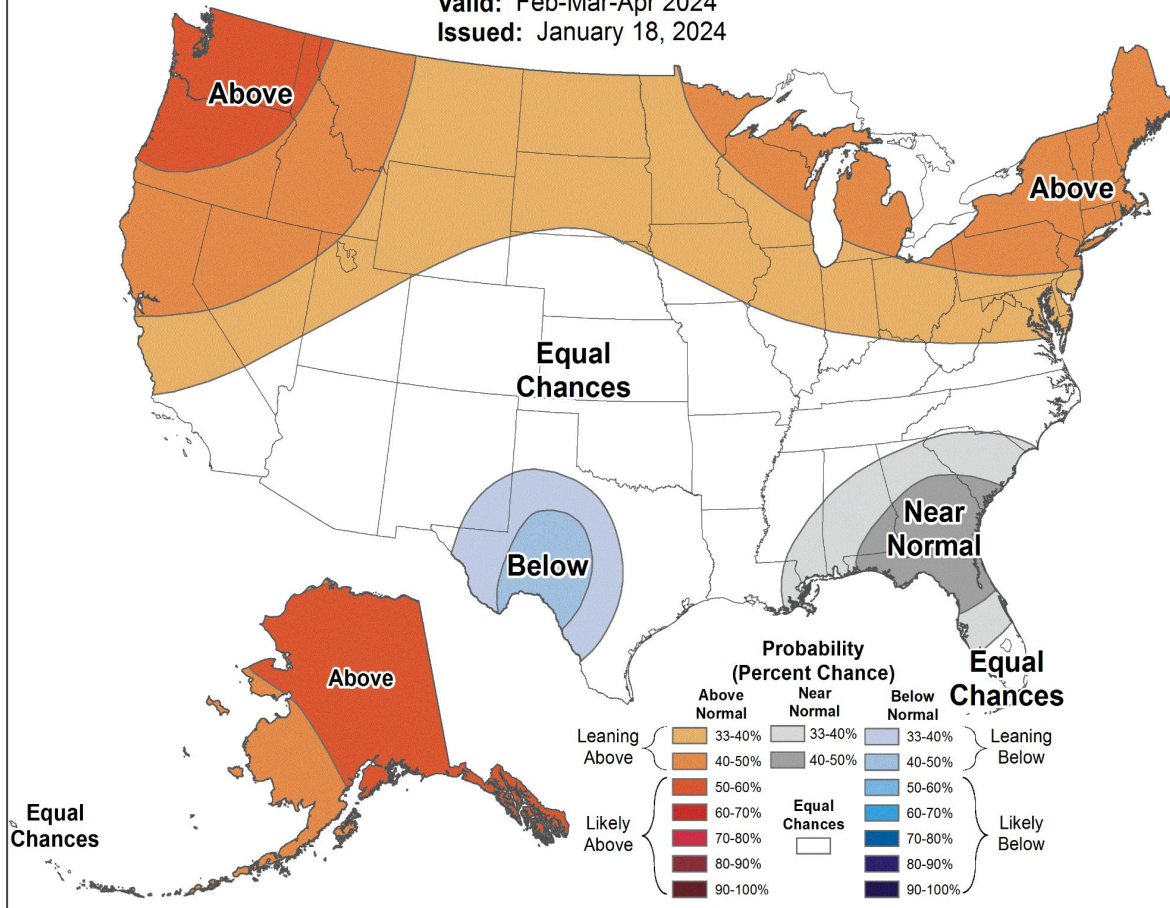
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# Climate Prediction Center Seasonal Outlook

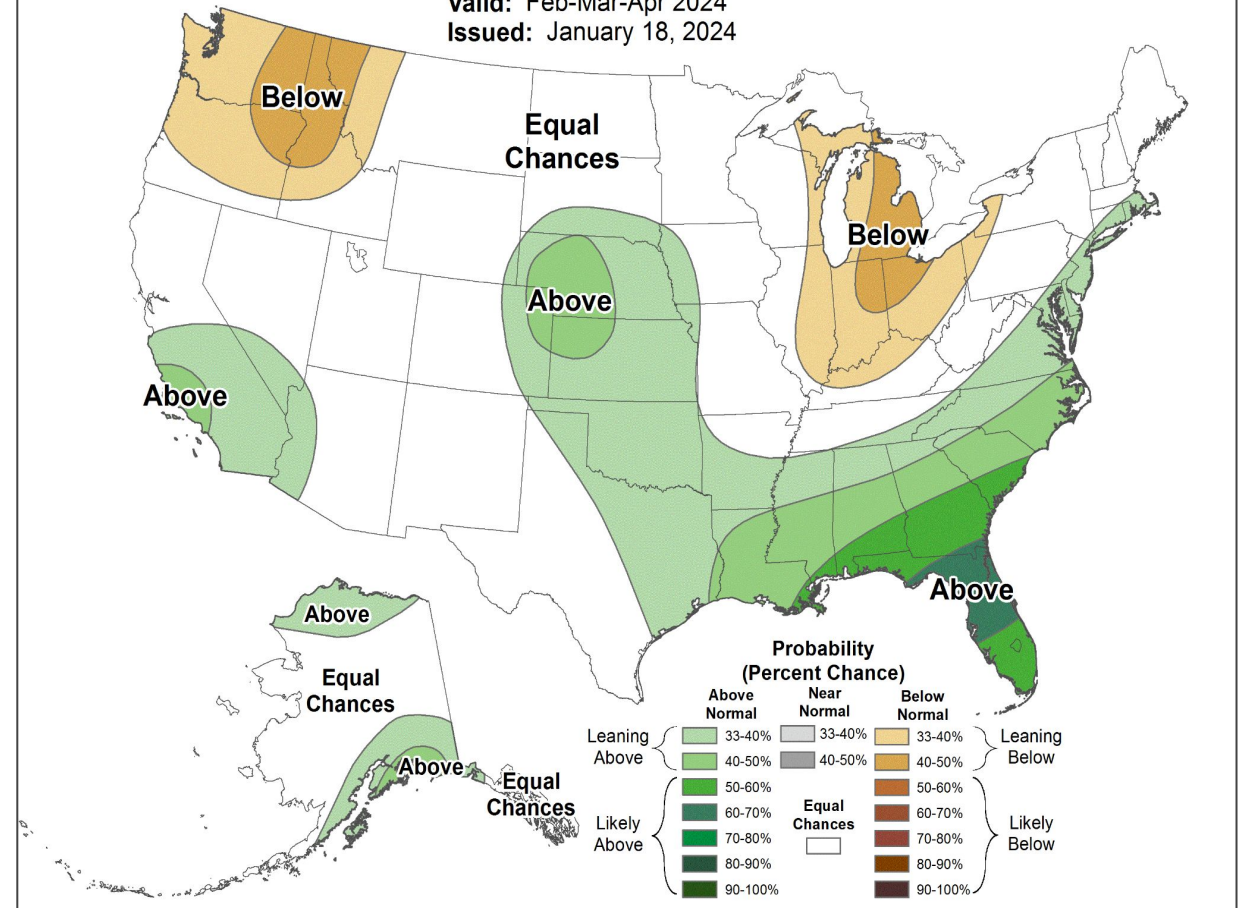
## Seasonal Temperature Outlook

Valid: Feb-Mar-Apr 2024  
Issued: January 18, 2024

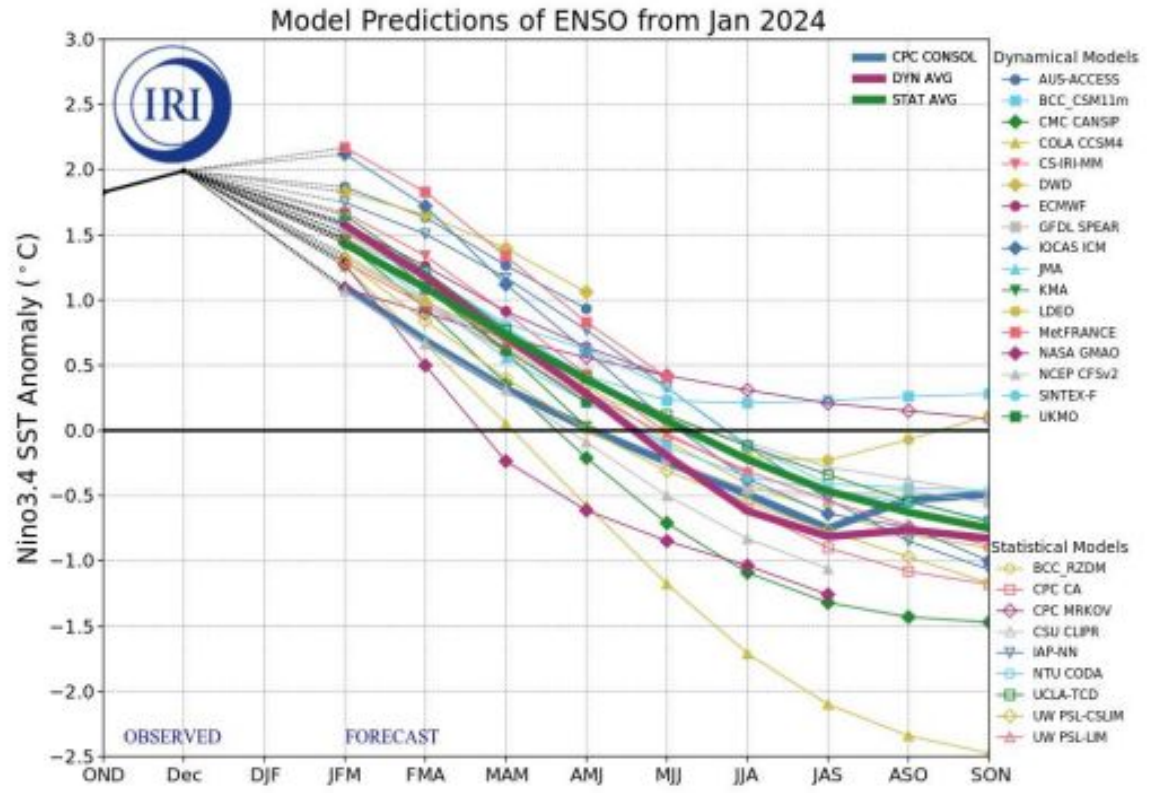


## Seasonal Precipitation Outlook

Valid: Feb-Mar-Apr 2024  
Issued: January 18, 2024



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The majority of models indicate El Niño will persist through March-May 2024 and then transition to ENSO-neutral during April-June 2024.

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



# Oceanic Niño Index vs. Apr - Sep Runoff Volumes

