

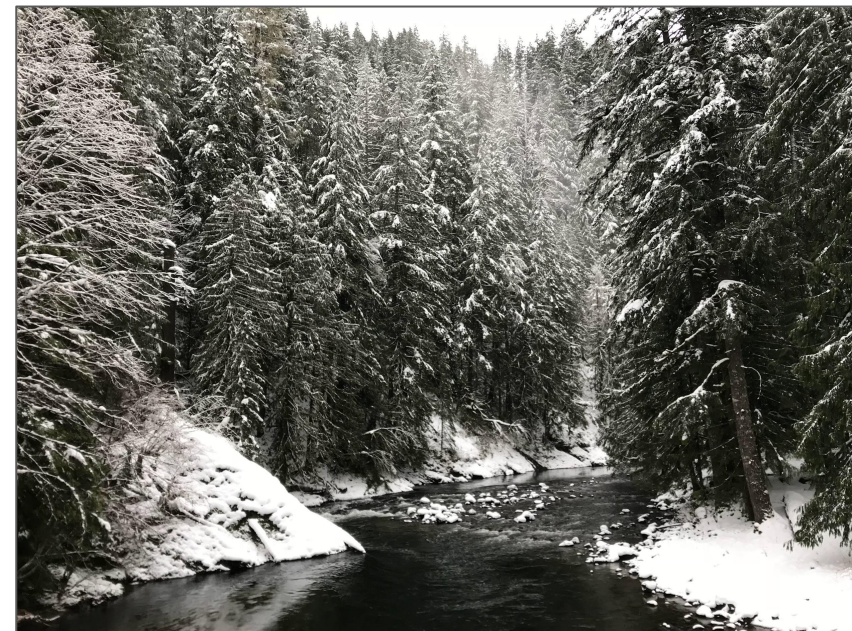


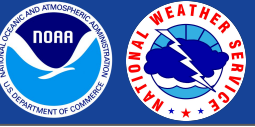
Northwest River Forecast Center

January 2025 Water Supply Briefing

Amy Burke, Senior Hydrologist
NWRFC.watersupply@noaa.gov

January 10, 2025

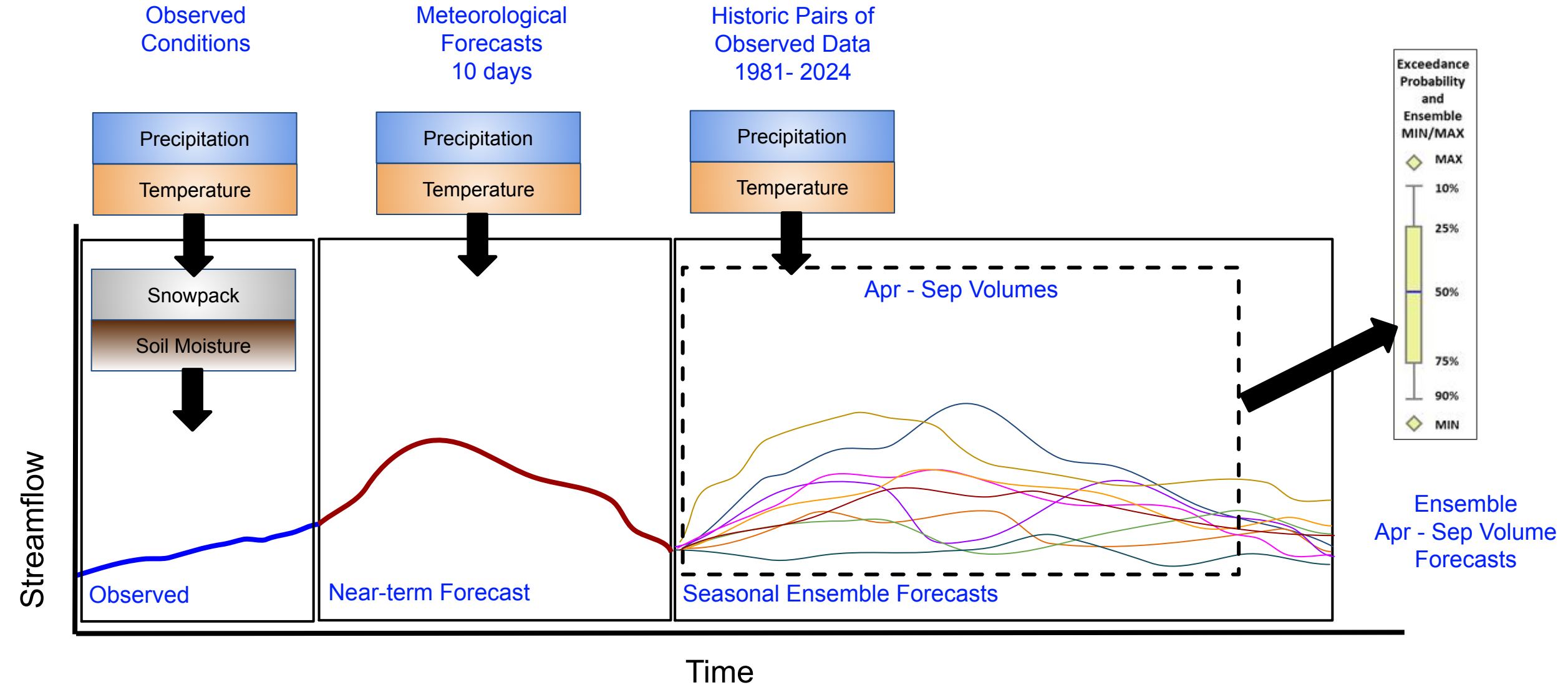




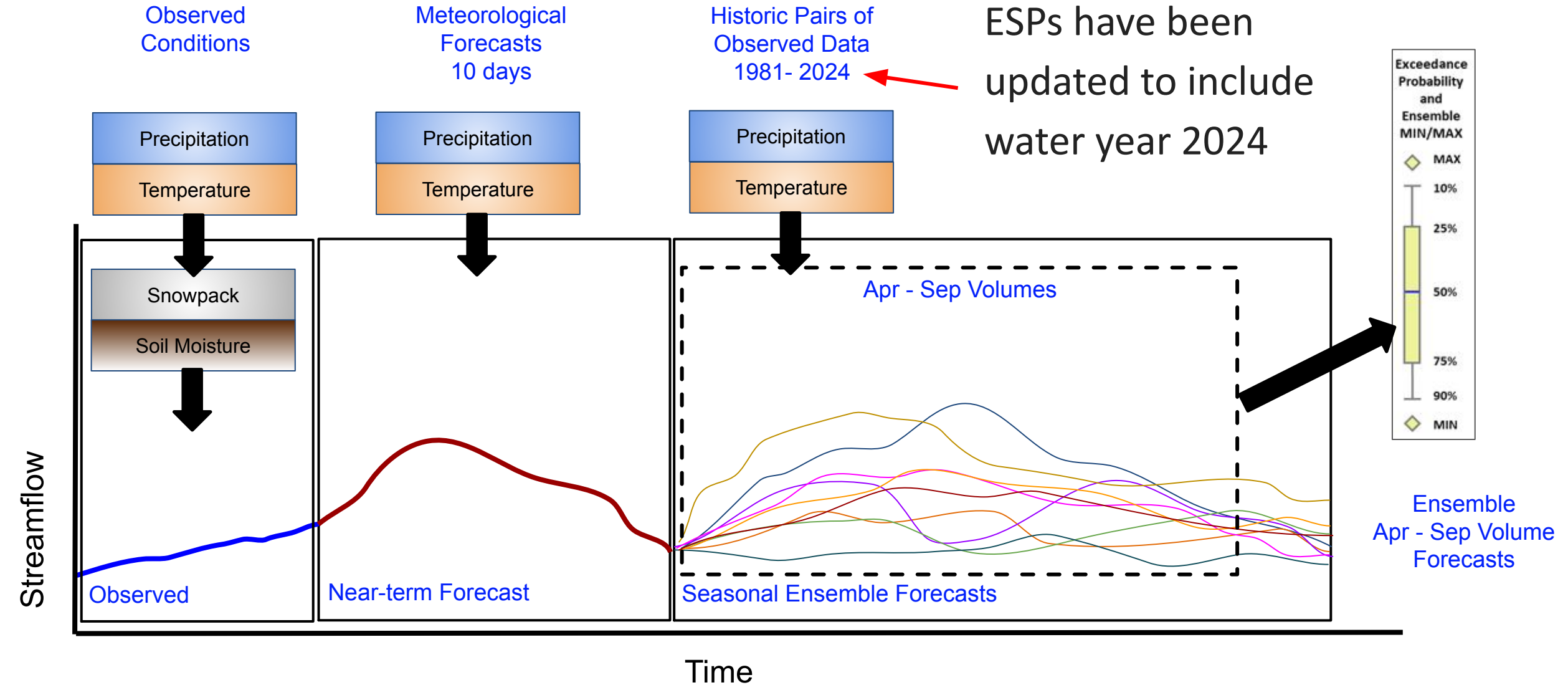
Key Takeaways

- Water year 2024 had much below normal Apr - Sep runoff in the northern portions of the Columbia basin.
- Water year to date precipitation has been largely above normal in the west and below normal in the east.
- Temperatures have been mostly above normal.
- Snowpack is a mix of above and below normal. Some areas with record high amounts and other with much below normal.
- Runoff and water supply forecasts are a mix of above and below normal.
- The 10 day forecast indicates lower than normal precipitation and cold temperatures.
- Climate Prediction Center is calling for increased chances of cold and wet conditions for Jan - Mar.

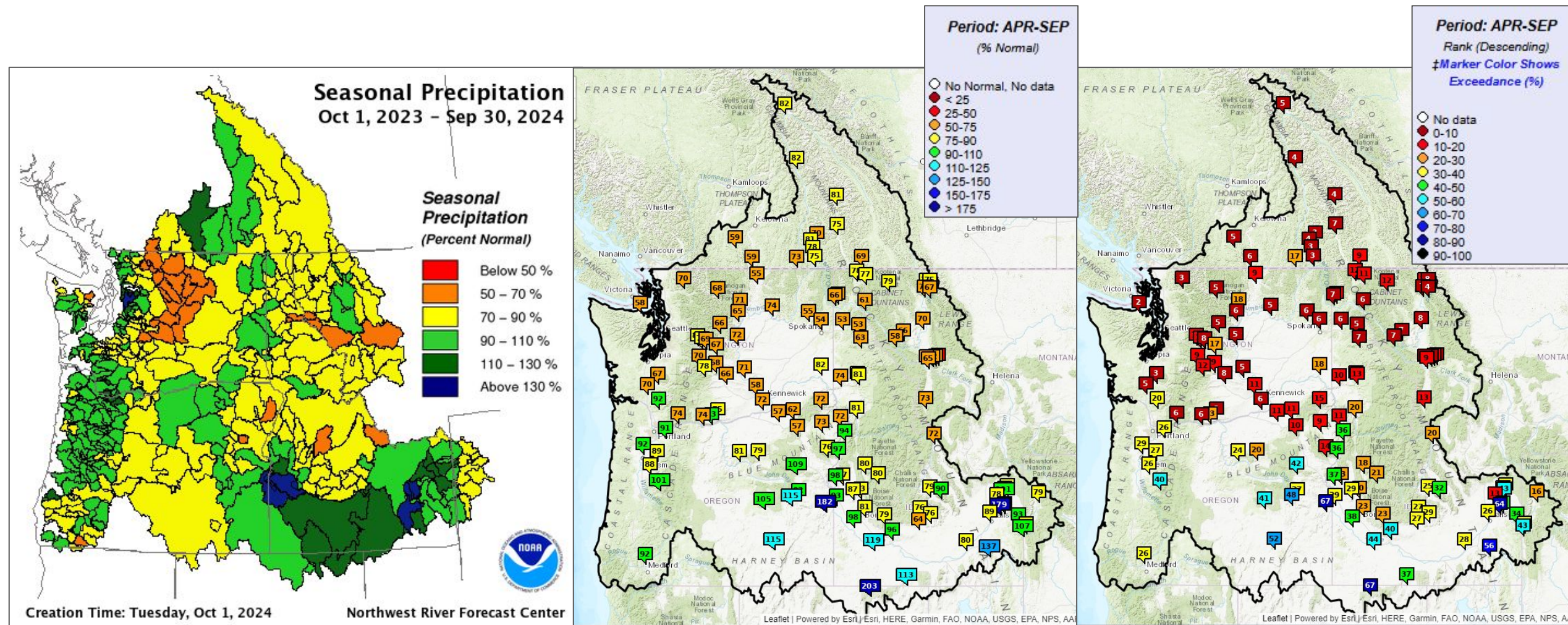
NWRFC Forecast Technique: Ensemble Streamflow Prediction



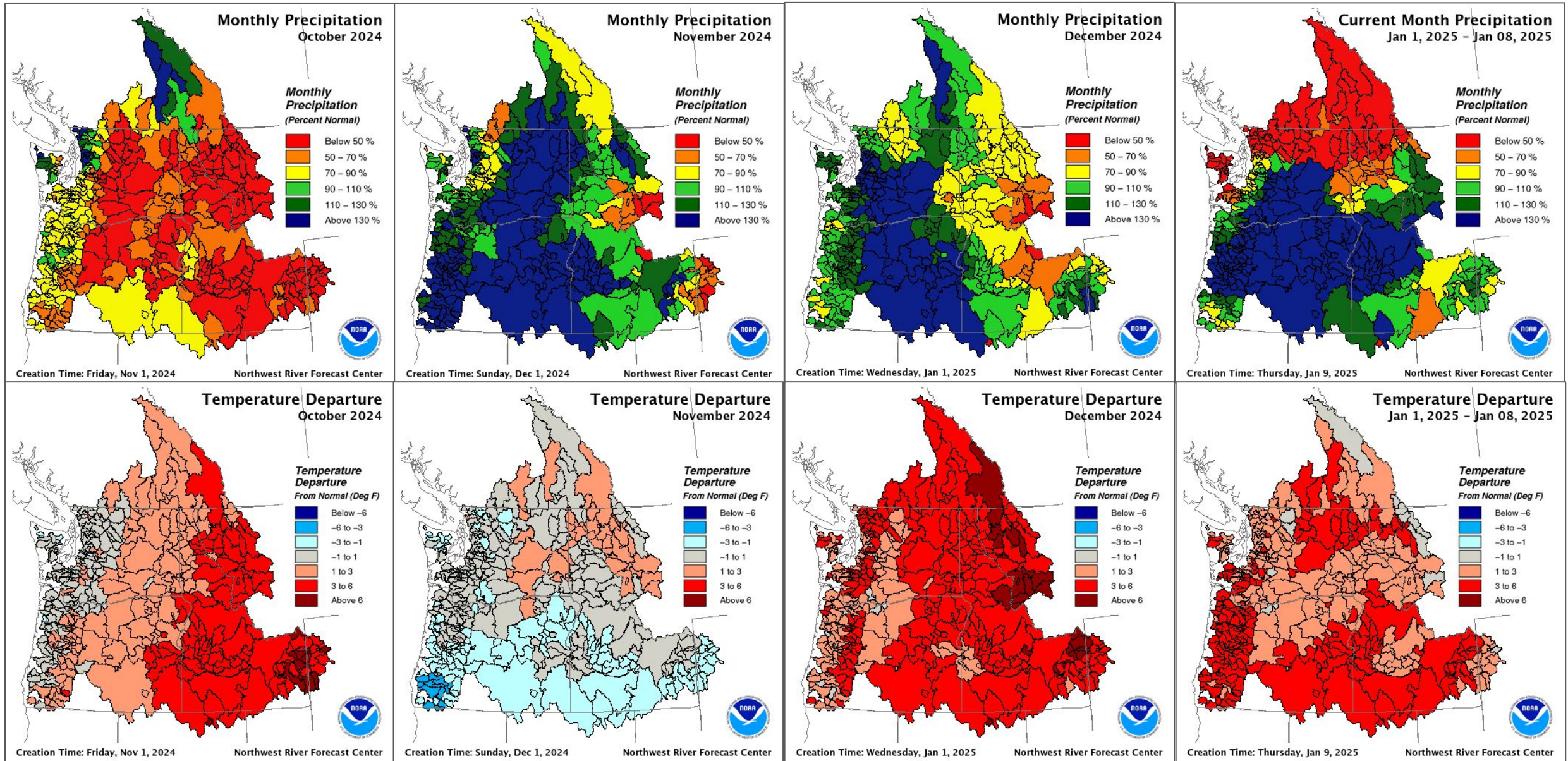
NWRFC Forecast Technique: Ensemble Streamflow Prediction



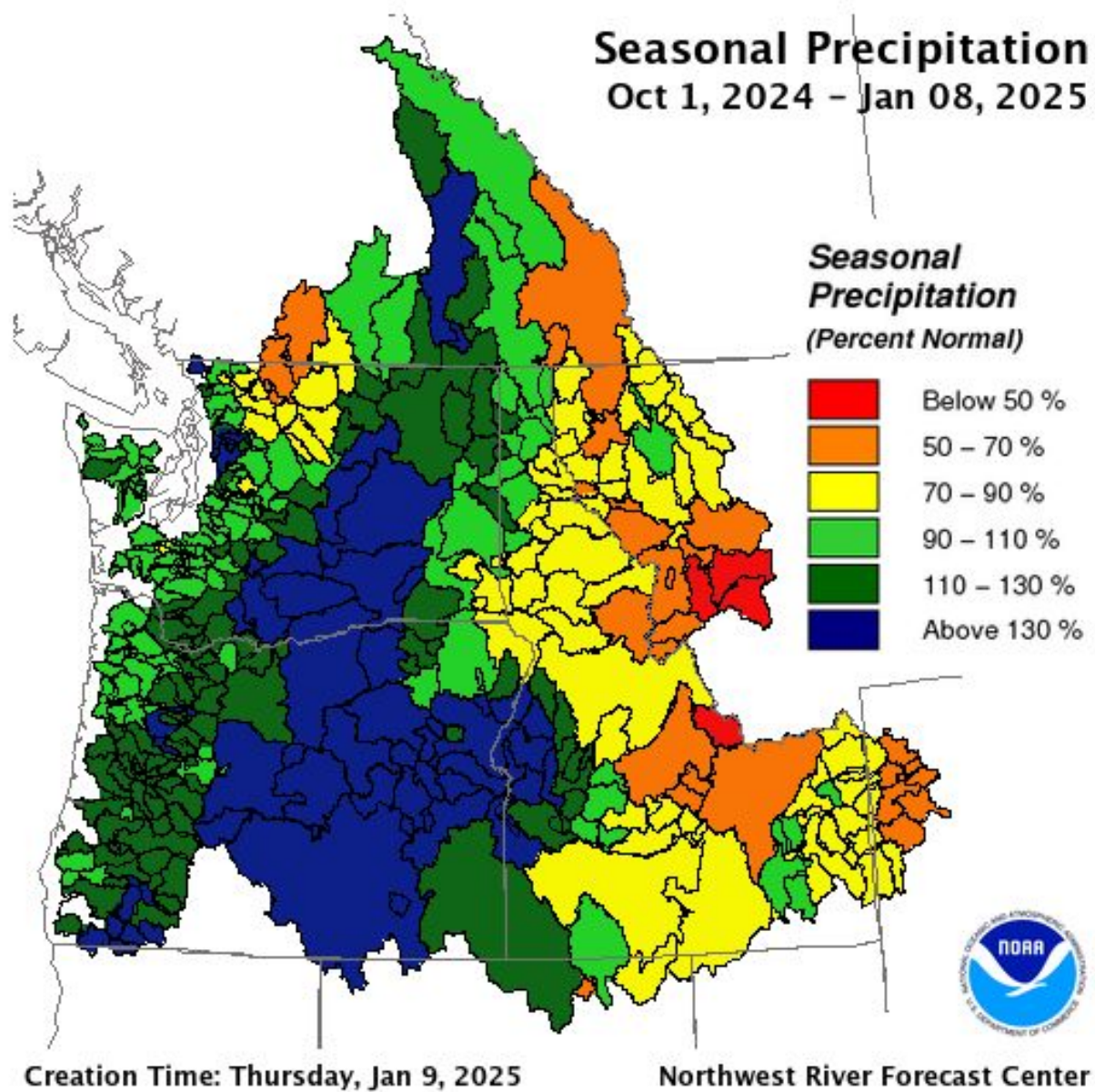
Water Year 2024 Precipitation and Apr -Sep Runoff



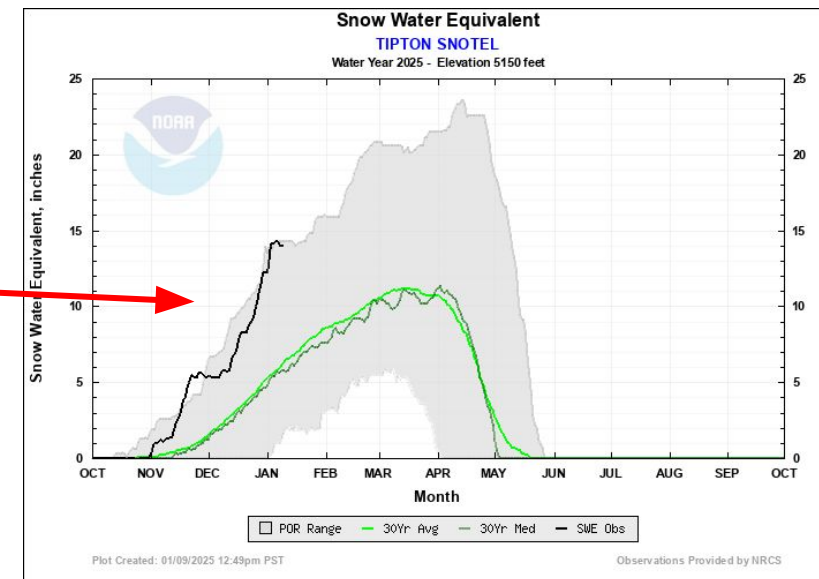
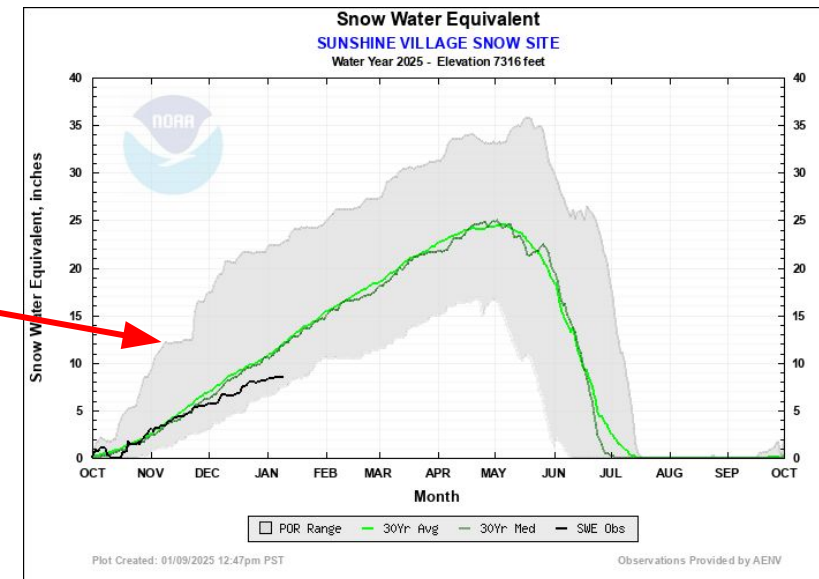
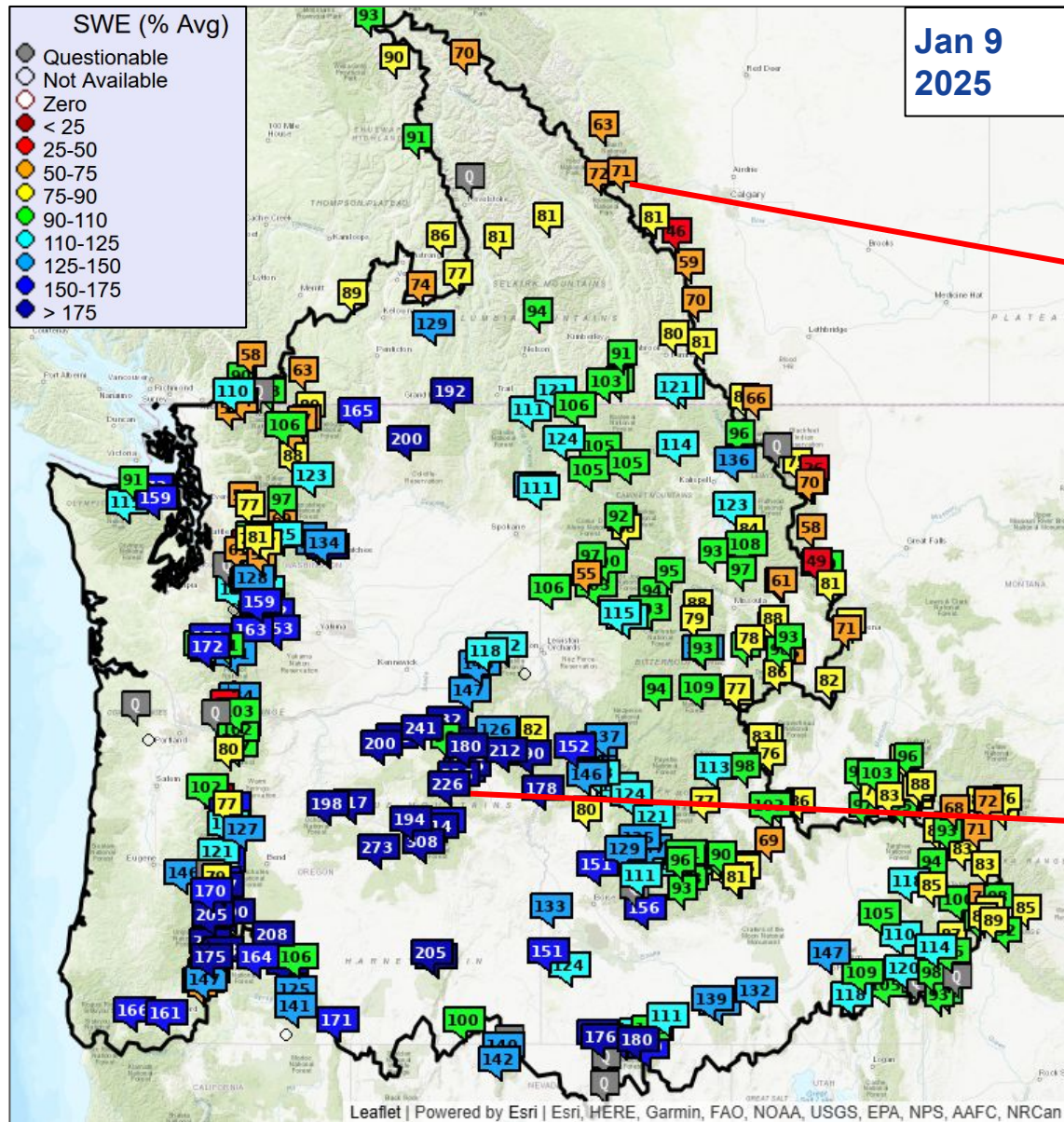
Observed Monthly Precipitation and Temperature



Water Year Precipitation

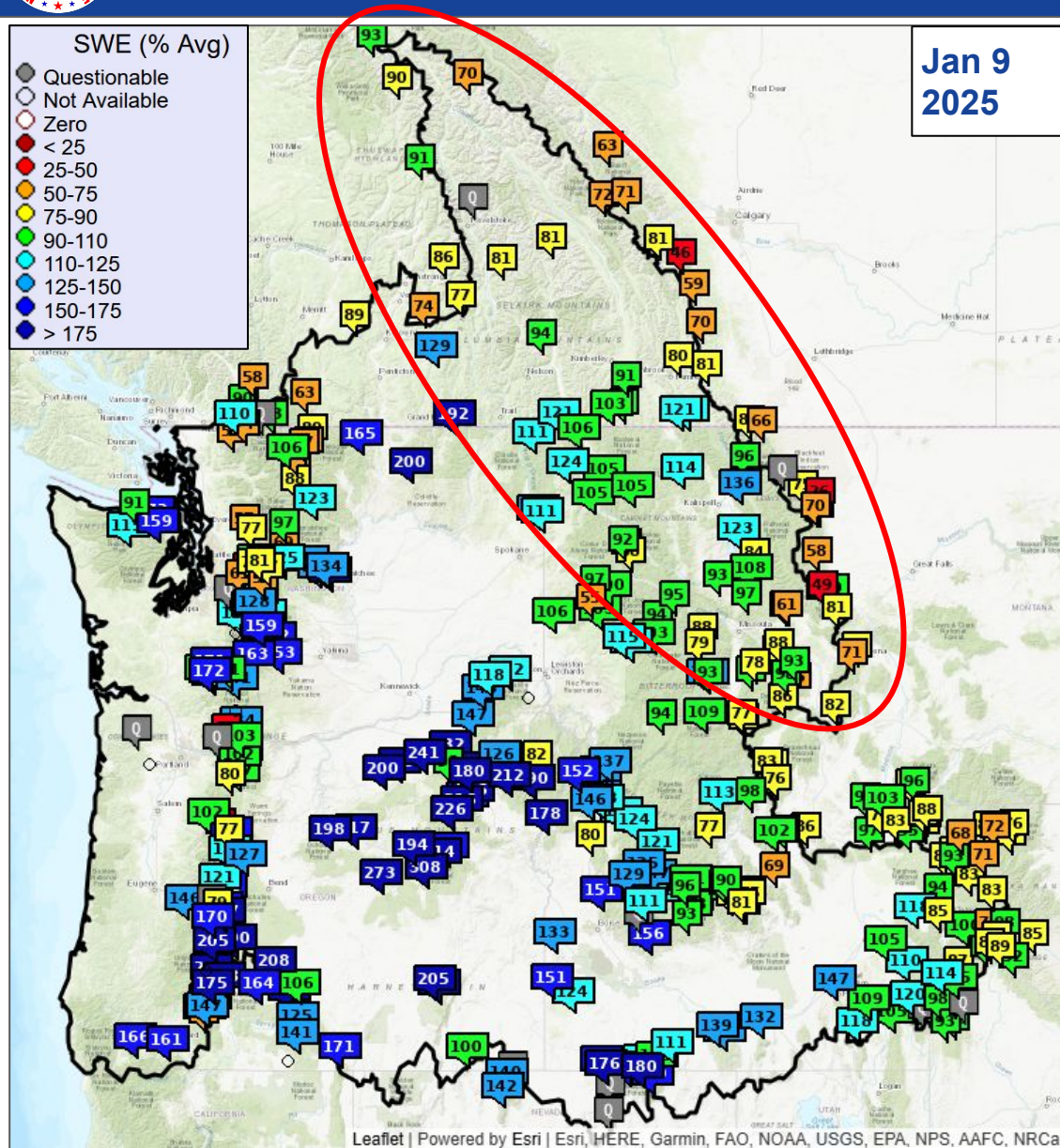


Snowpack

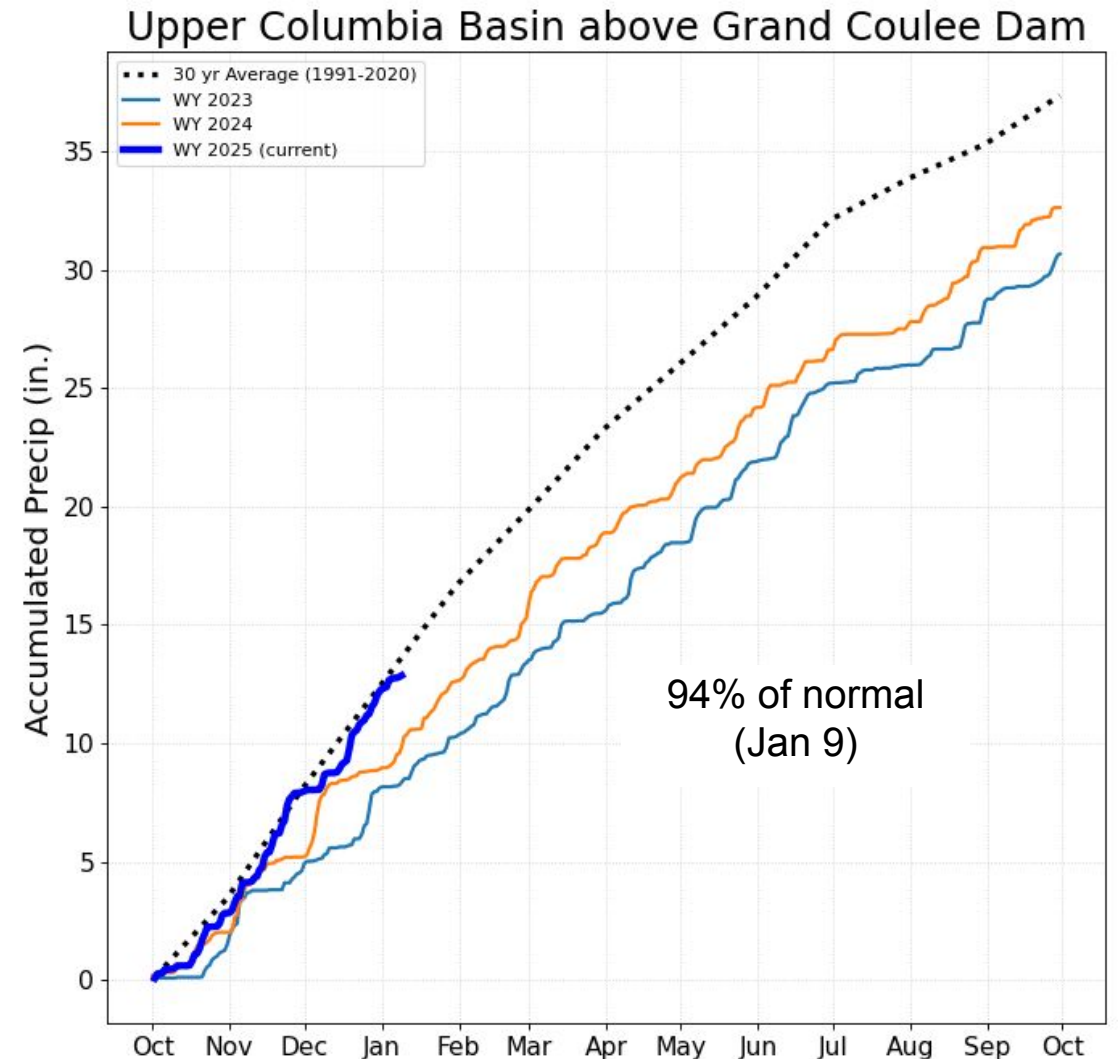


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

Snowpack and Precipitation

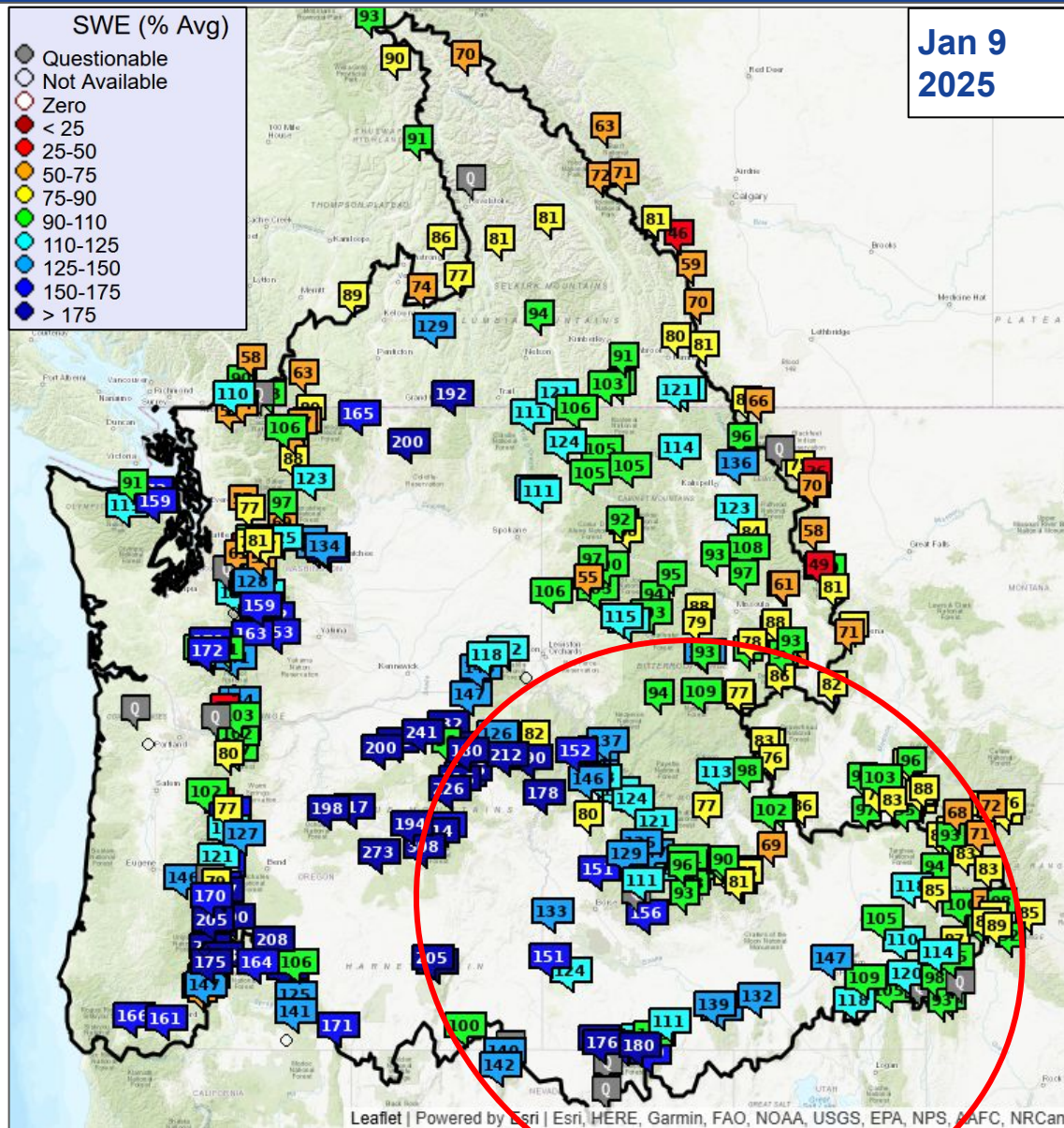


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.



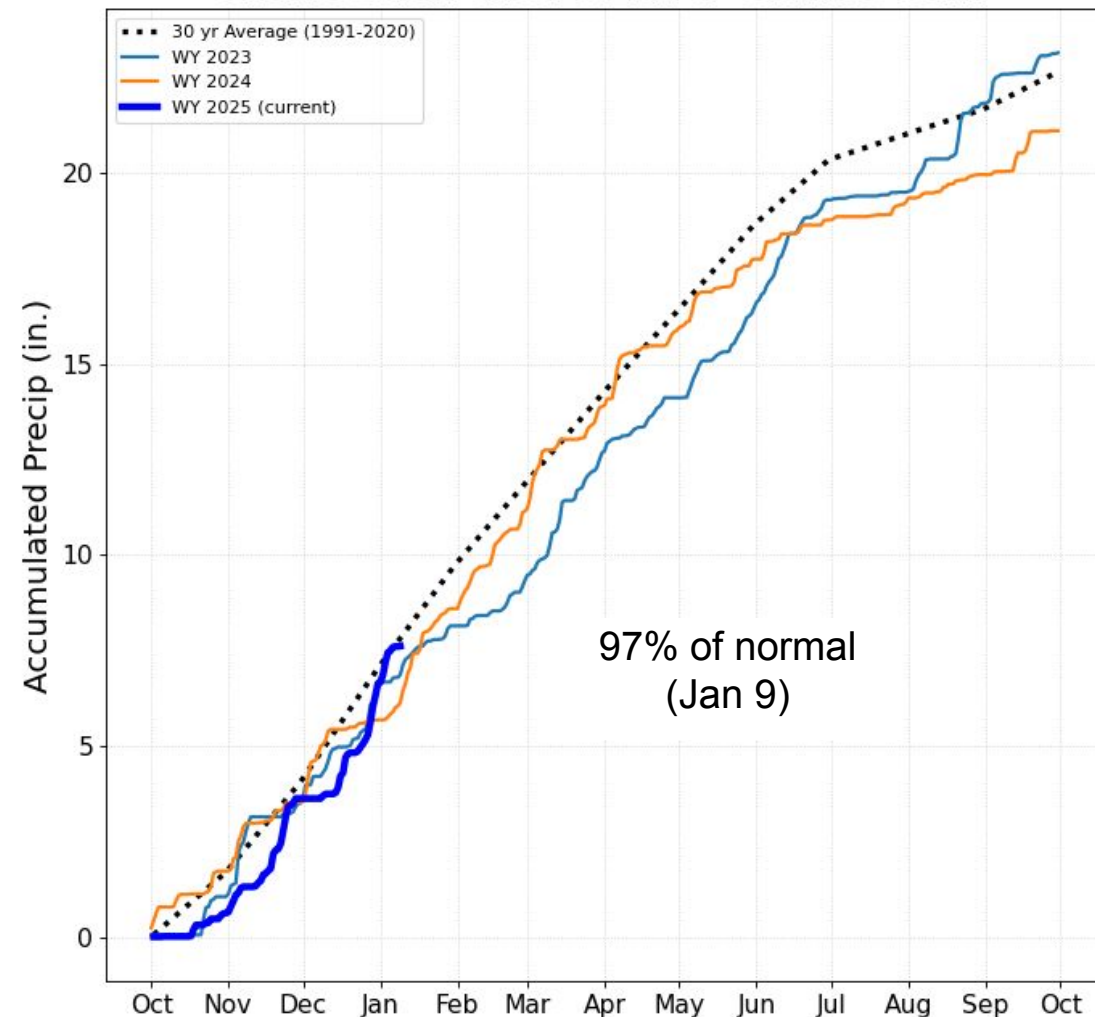
Precip averages from PRISM, OSU and PCIC.

Snowpack and Precipitation



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

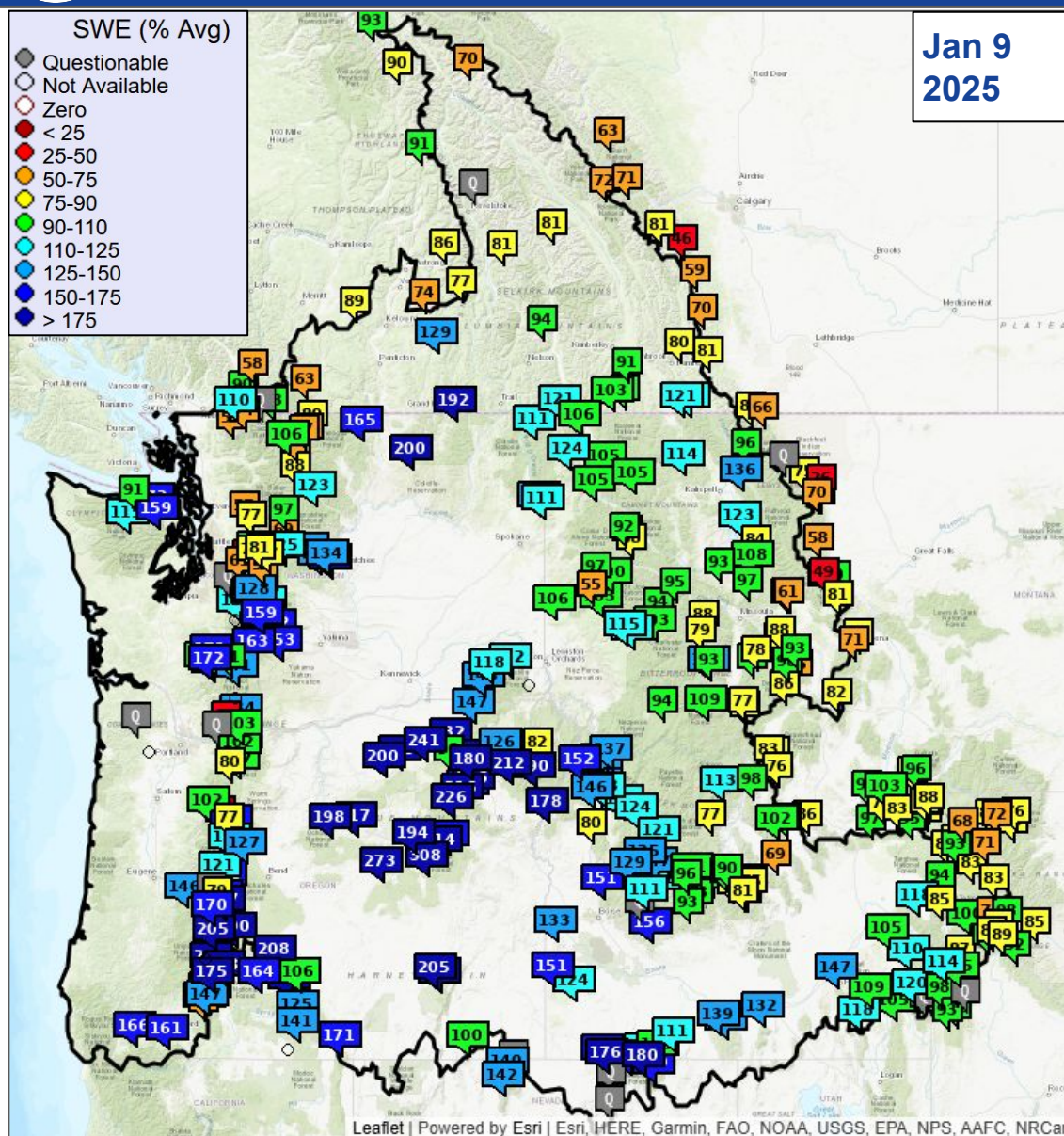
Snake Basin above Lower Granite Dam



Precip averages from PRISM, OSU and PCIC.

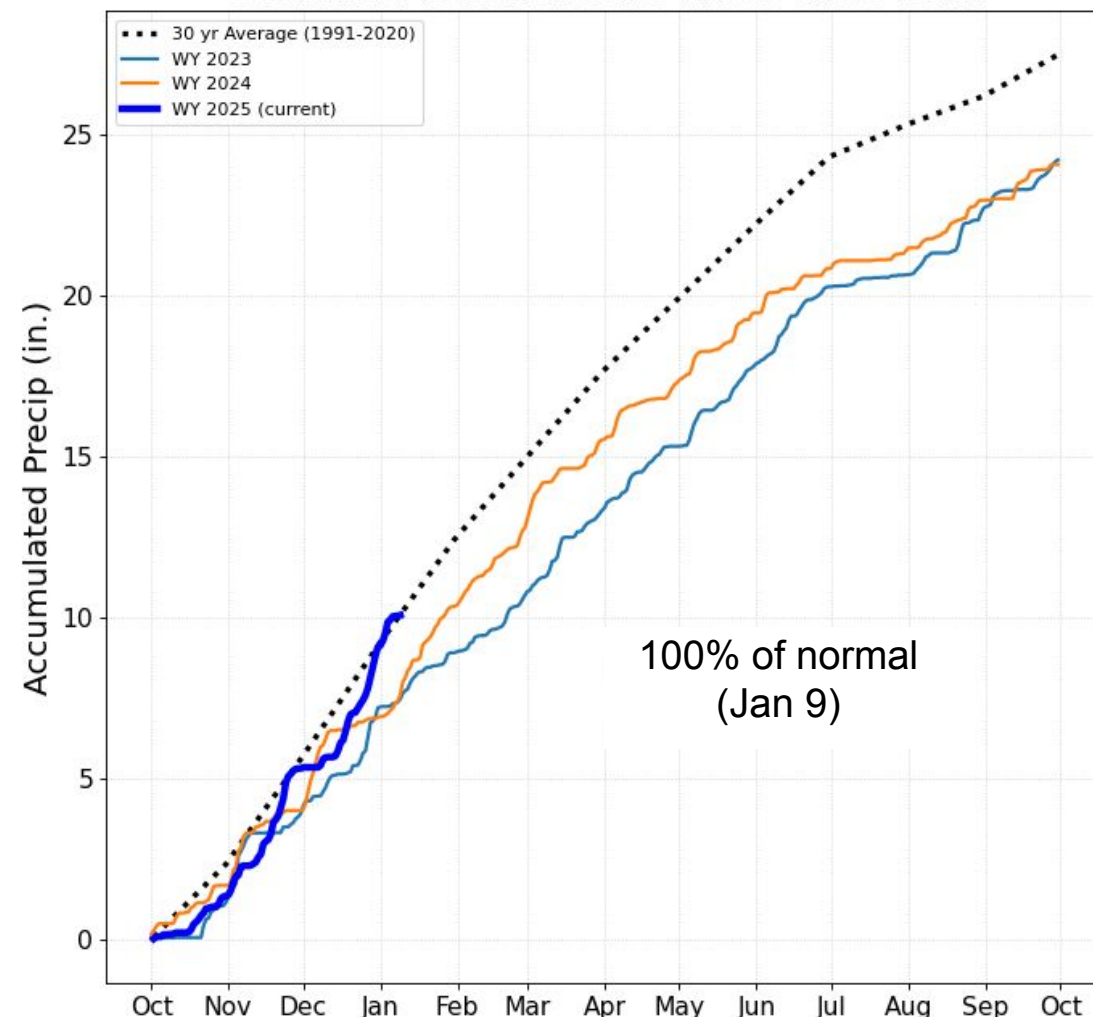
Snowpack and Precipitation

Jan 9
2025



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

Columbia Basin above The Dalles Dam



Precip averages from PRISM, OSU and PCIC.

Water Year to Date Adjusted Observed Runoff

% Normal Runoff Oct 1 - Jan 8

Upper Columbia Basin

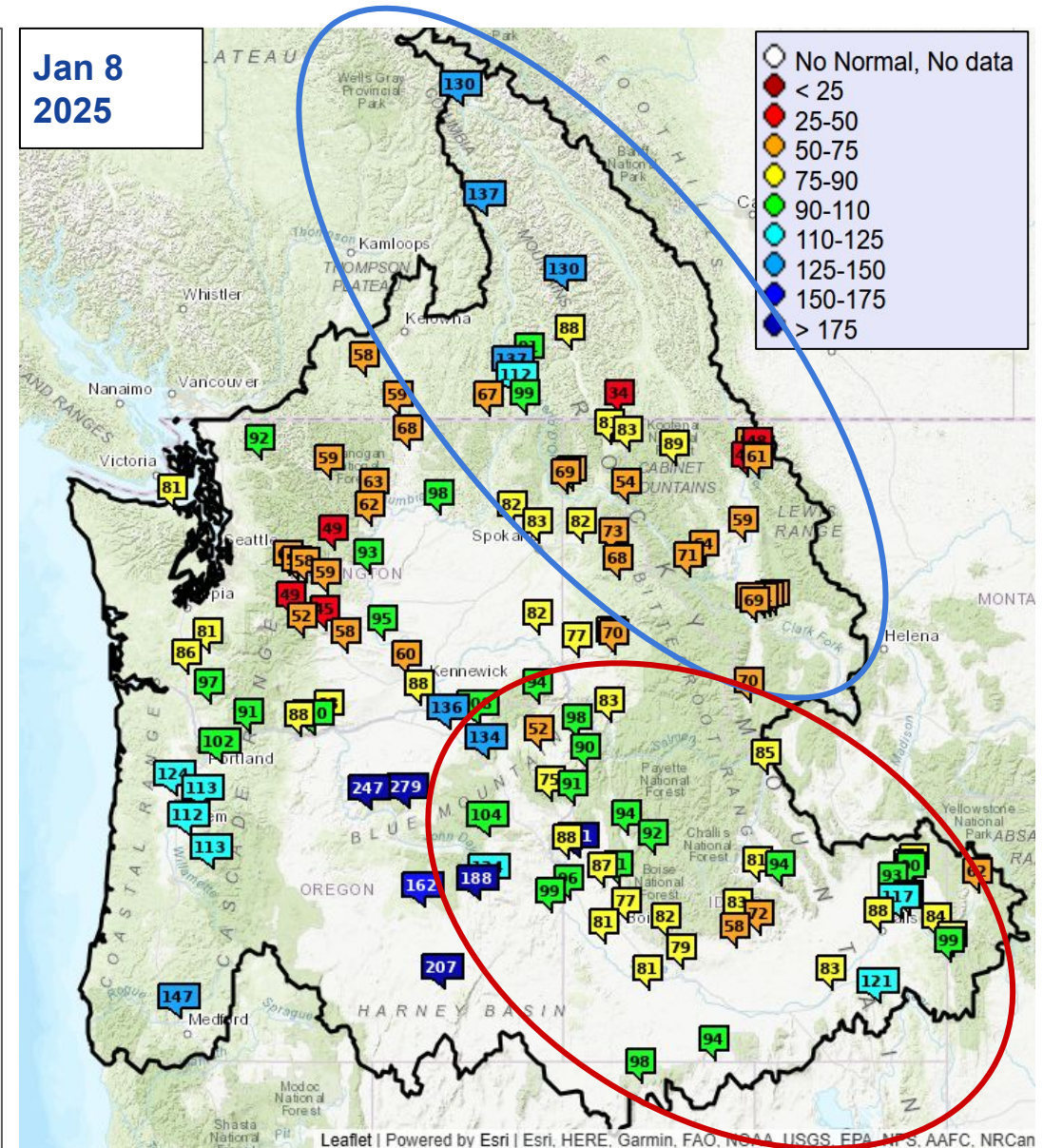
Mica	130
Duncan	130
Queens Bay	88
Libby	89
Hungry Horse	61
Grand Coulee	98

Snake River Basin

American Falls	83
Lucky Peak	77
Dworshak	80
Lower Granite	82

Lower Columbia Basin

The Dalles	88
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Water Year to Date Natural Observed Runoff

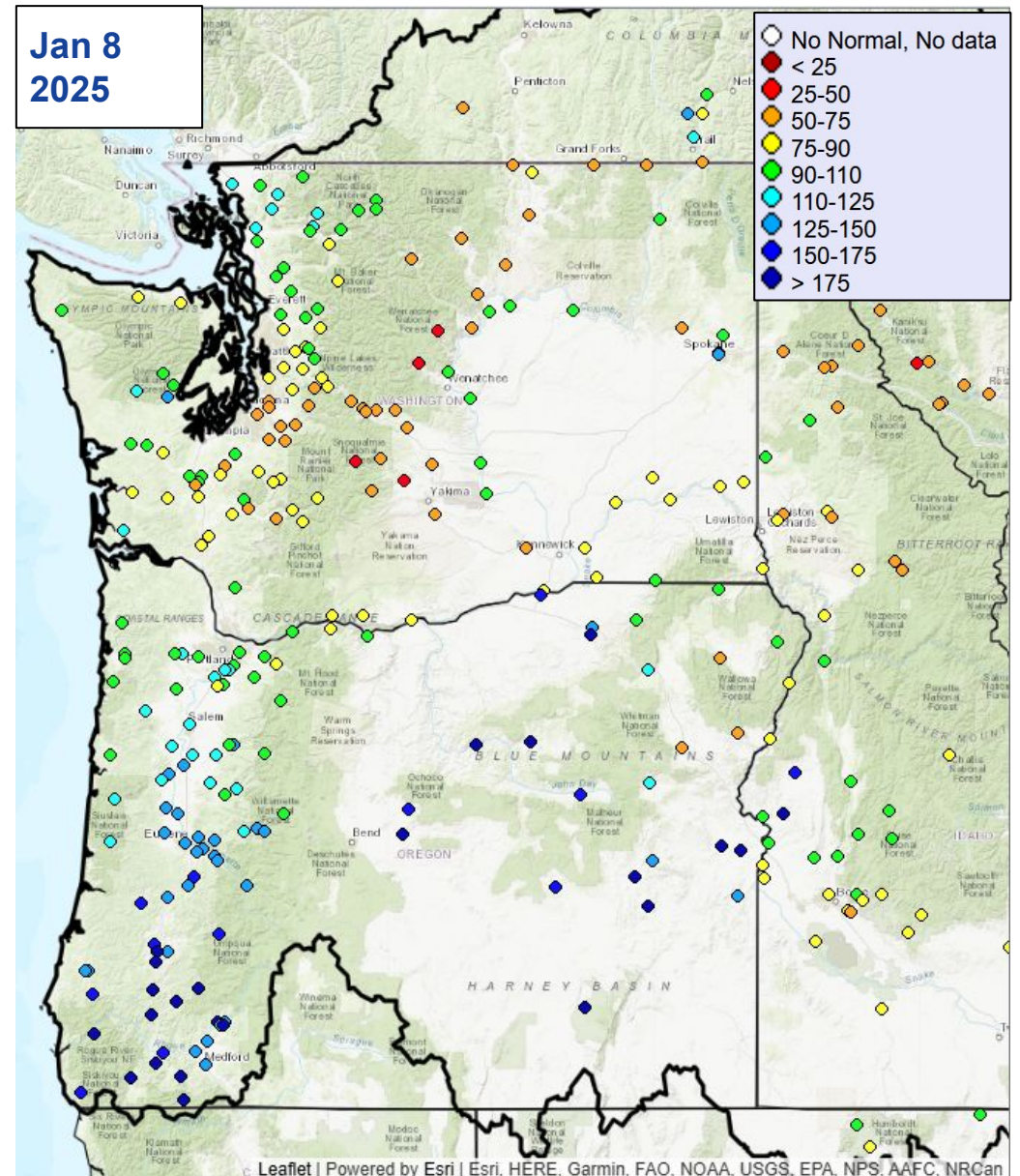
% Normal Runoff Oct 1 - Jan 8

Washington

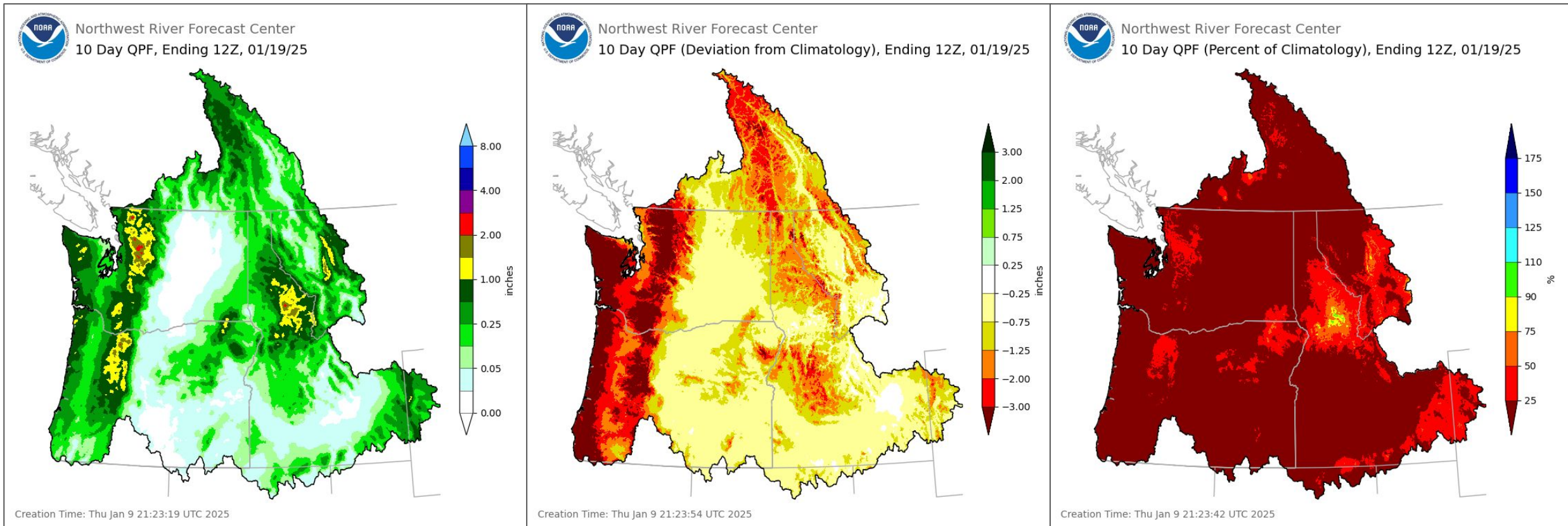
Skagit near Mt Vernon	95
Dungeness near Sequim	80
Chehalis at Porter	88
Okanogan at Malott	70
Methow near Pateros	63
Yakima at Parker	54
Walla Walla near Touchet	84

Oregon

Willamette at Salem	114
Rogue at Raygold	148
Umatilla at Pendleton	131
Grande Ronde at Troy	92
Crooked near Prineville	254
Owyhee Dam	125

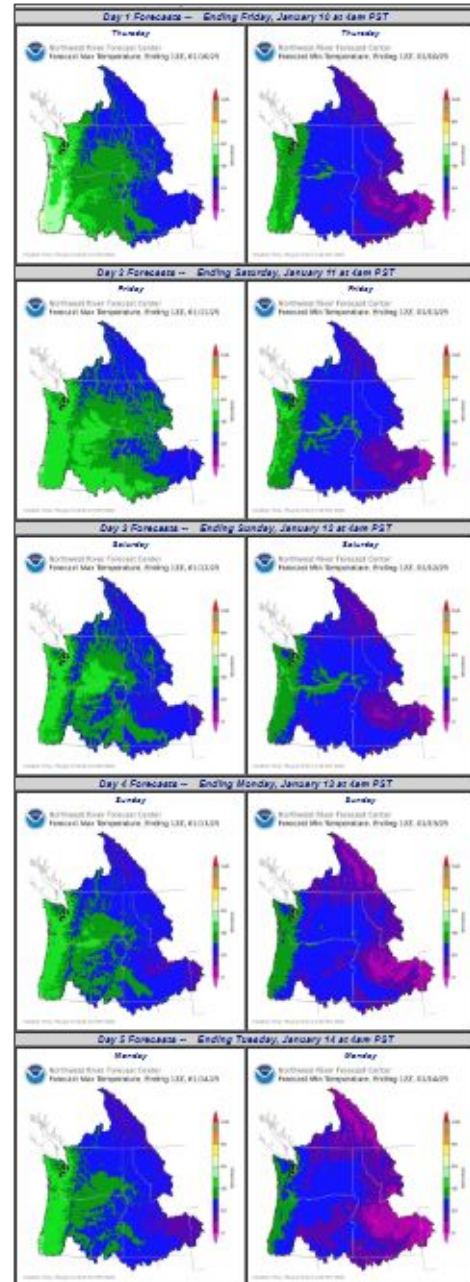
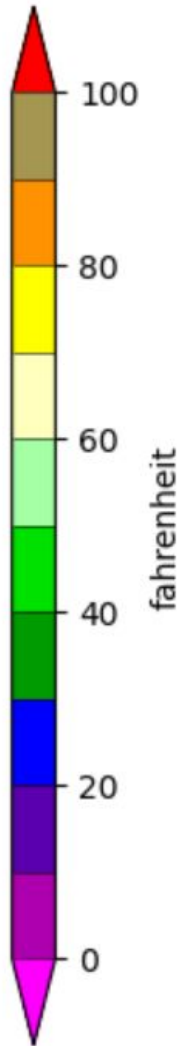


10 Day Precipitation Forecast used in ESP10



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).

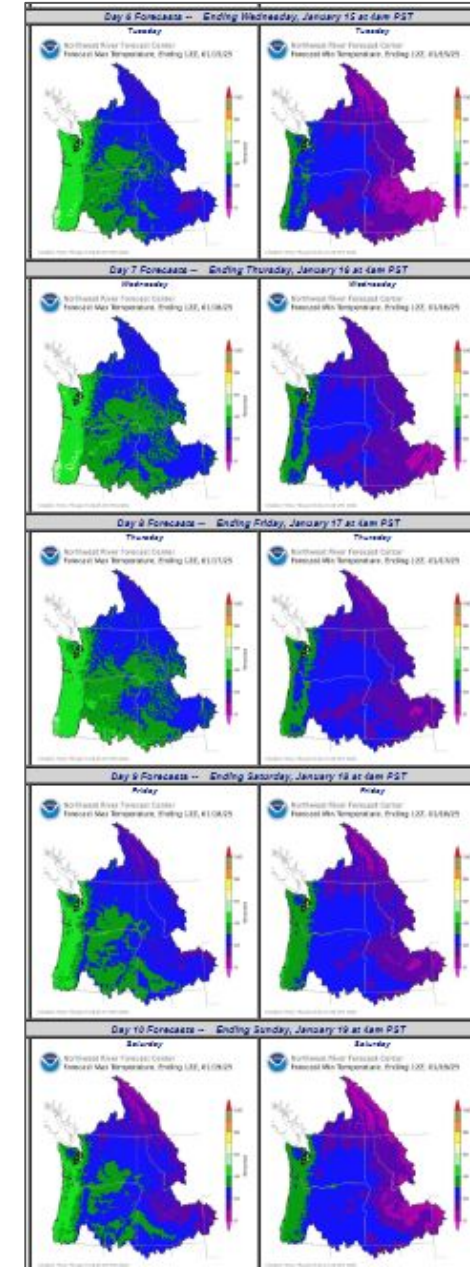
10 Day Temperature Forecast used in ESP10



Days 1 - 5



Days 6 -10



ESP10 Water Supply Forecasts

% Normal Apr-Sep Volume

Upper Columbia Basin

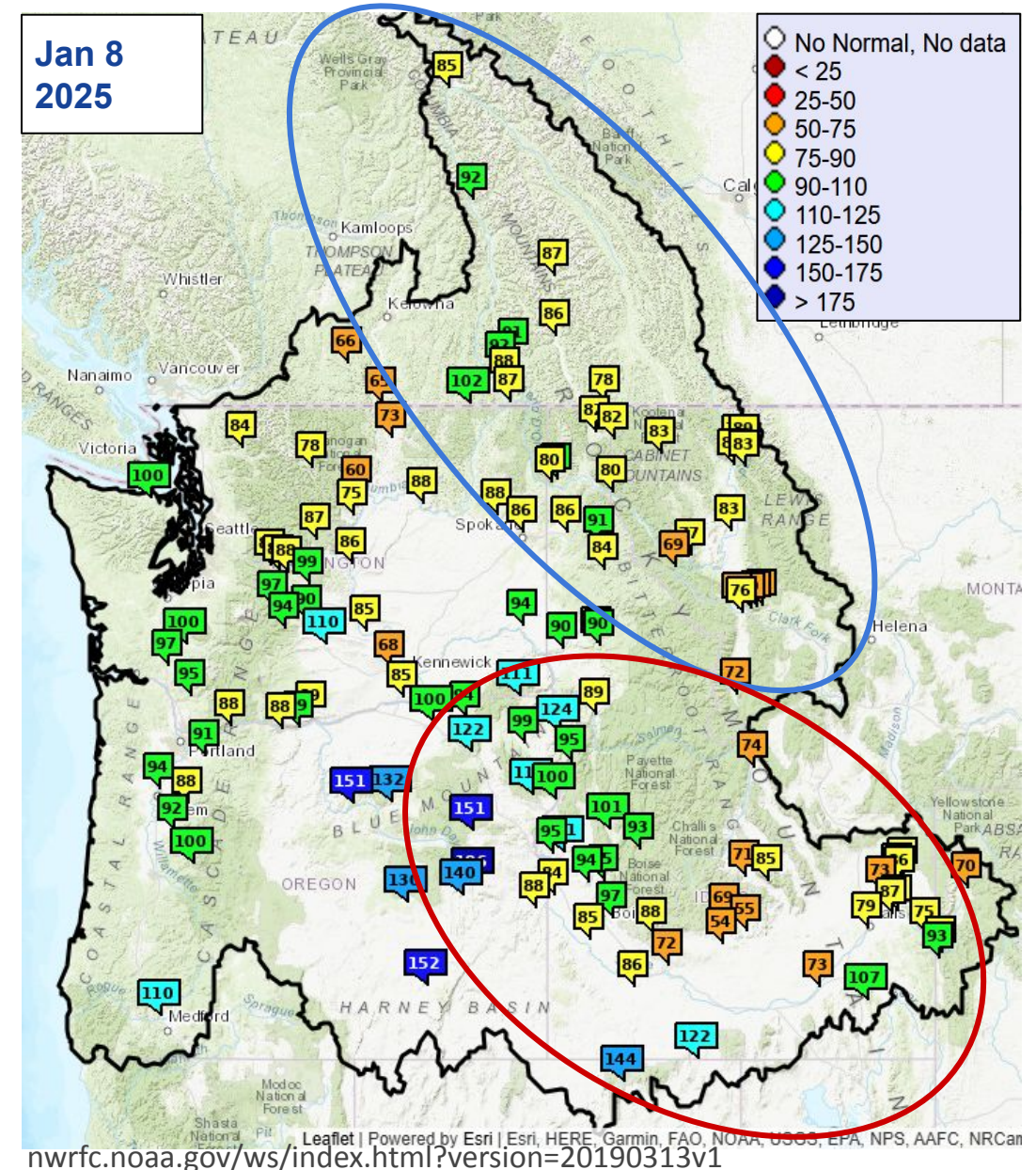
Mica	85
Duncan	87
Queens Bay	86
Libby	83
Hungry Horse	83
Grand Coulee	88

Snake River Basin

American Falls	73
Lucky Peak	97
Dworshak	89
Lower Granite	94

Lower Columbia Basin

The Dalles	88
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Natural Water Supply Forecasts

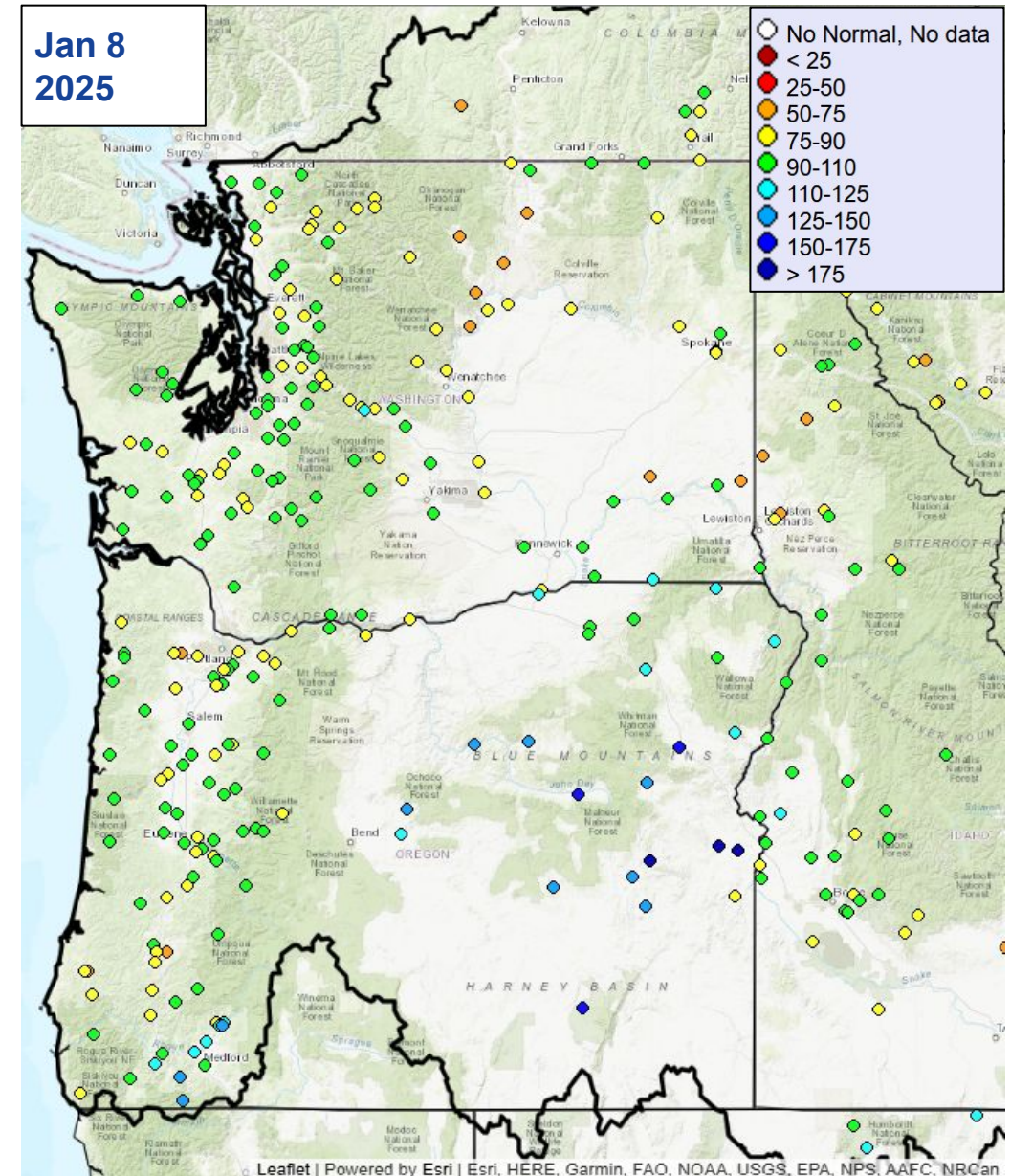
% Normal Apr-Sep Volume

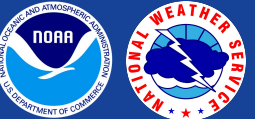
Washington

Skagit near Mt Vernon	84
Dungeness near Sequim	99
Chehalis at Porter	89
Okanogan at Malott	71
Methow near Pateros	60
Yakima at Parker	101
Walla Walla near Touchet	90

Oregon

Willamette at Salem	90
Rogue at Raygold	111
Umatilla at Pendleton	100
Grande Ronde at Troy	111
Crooked near Prineville	119
Owyhee Dam	87





ESP10 Water Supply Forecast

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

Official Water Supply

ESP with 10 Days QPF Ensemble: 2025-01-09 Issued: 2025-01-09

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	15206	20830	94	25516	22232
APR-JUL	13123	18244	91	22671	19946
APR-AUG	14159	19588	93	24162	21121
JAN-SEP	21885	27764	93	35236	29736
JAN-JUL	19854	25264	92	32368	27450
OCT-SEP	25464	31343	91	38815	34287

Experimental Water Supply

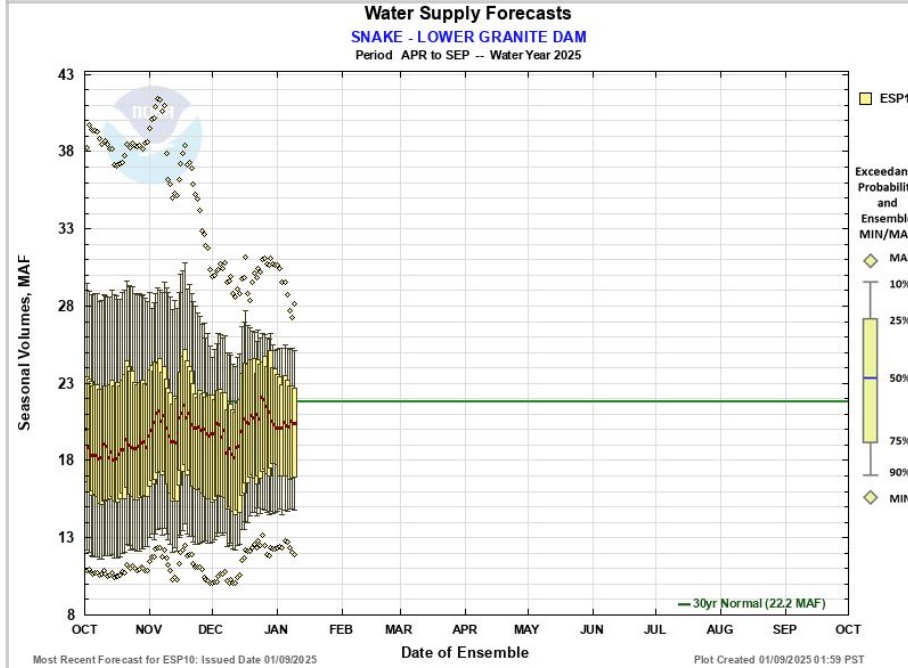
HEFS with 15 days EQPF Ensemble: 2025-01-09 Issued: 2025-01-09

APR-SEP	15122	20677	93	25492	22232
APR-JUL	13051	18103	91	22640	19946
APR-AUG	14079	19423	92	24138	21121
JAN-SEP	21766	27318	92	35795	29736
JAN-JUL	19766	24885	91	32960	27450
OCT-SEP	25345	30896	90	39374	34287

Reference

ESP with 0 Days QPF Ensemble: 2025-01-09 Issued: 2025-01-09

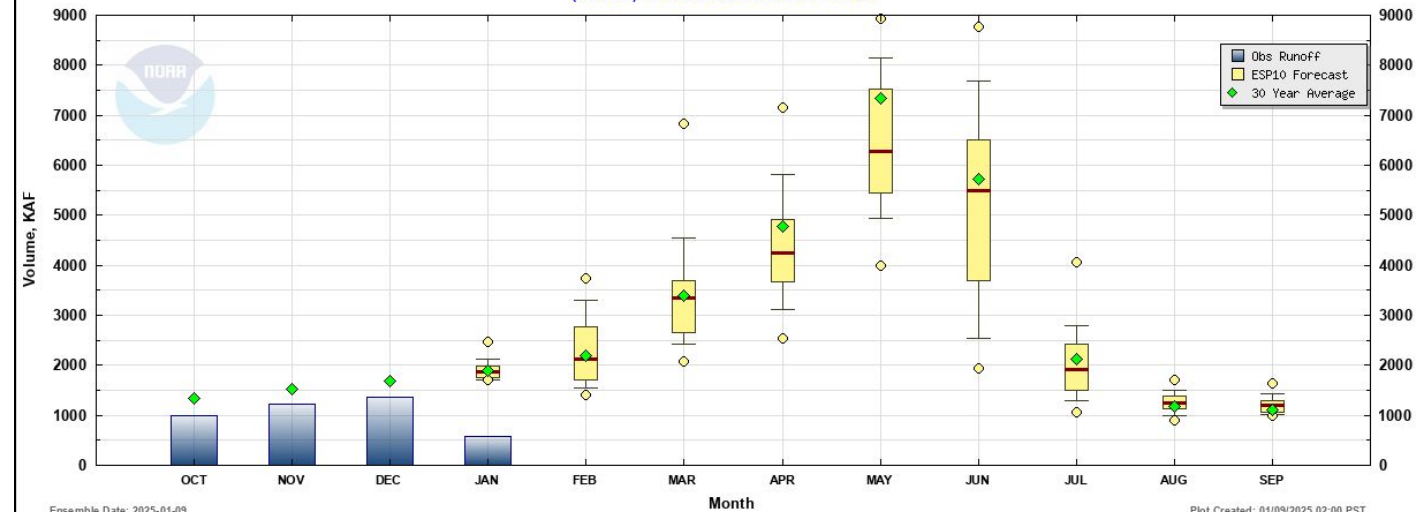
APR-SEP	15302	21670	97	26685	22232
APR-JUL	13210	19188	96	24013	19946
APR-AUG	14252	20469	97	25422	21121
JAN-SEP	22129	28777	97	36652	29736
JAN-JUL	20111	26359	96	33909	27450
OCT-SEP	25708	32356	94	40231	34287



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

nwrffc.noaa.gov/water_supply/ws_forecasts.php?id=LGDW1

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





ESP10 Water Supply Forecast

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

Official Water Supply

ESP with 10 Days QPF Ensemble: 2025-01-09 Issued: 2025-01-09

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	43894	54084	88	63296	61483
APR-JUL	36519	44617	85	53638	52774
APR-AUG	40962	50355	87	59341	58186
JAN-SEP	51298	61565	87	71317	70457
JAN-JUL	43770	53064	86	61054	61749
OCT-SEP	59596	69863	89	79615	78842

Experimental Water Supply

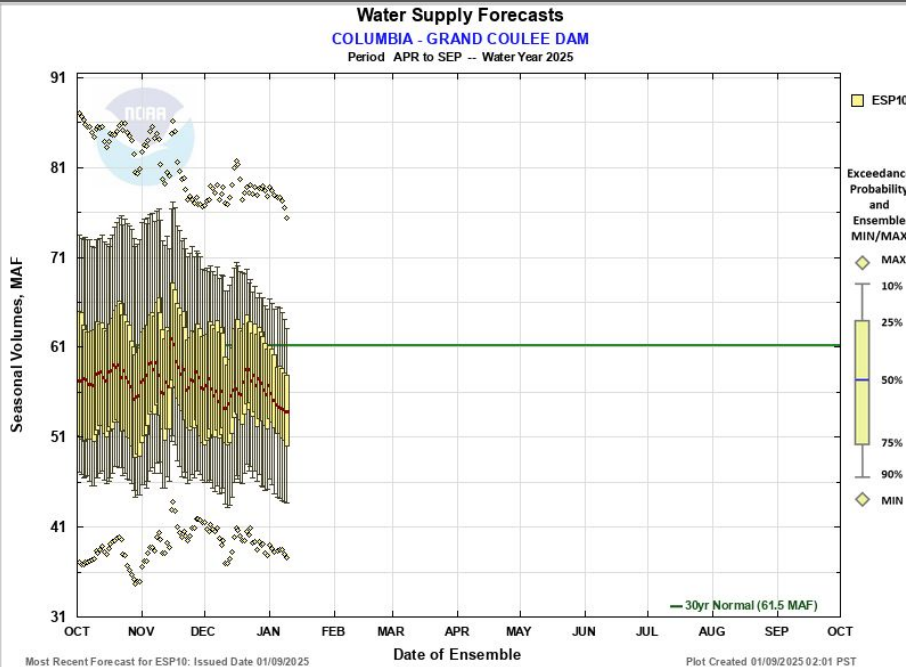
HEFS with 15 days EQPF Ensemble: 2025-01-09 Issued: 2025-01-09

APR-SEP	44664	54564	89	64986	61483
APR-JUL	37159	45909	87	55550	52774
APR-AUG	41659	51146	88	61152	58186
JAN-SEP	51843	62050	88	73713	70457
JAN-JUL	44217	53660	87	63161	61749
OCT-SEP	60141	70348	89	82011	78842

Reference

ESP with 0 Days QPF Ensemble: 2025-01-09 Issued: 2025-01-09

APR-SEP	45356	56556	92	65917	61483
APR-JUL	37526	47151	89	57015	52774
APR-AUG	42199	53221	91	62104	58186
JAN-SEP	53037	65102	92	75021	70457
JAN-JUL	45244	55870	90	66380	61749
OCT-SEP	61335	73400	93	83319	78842

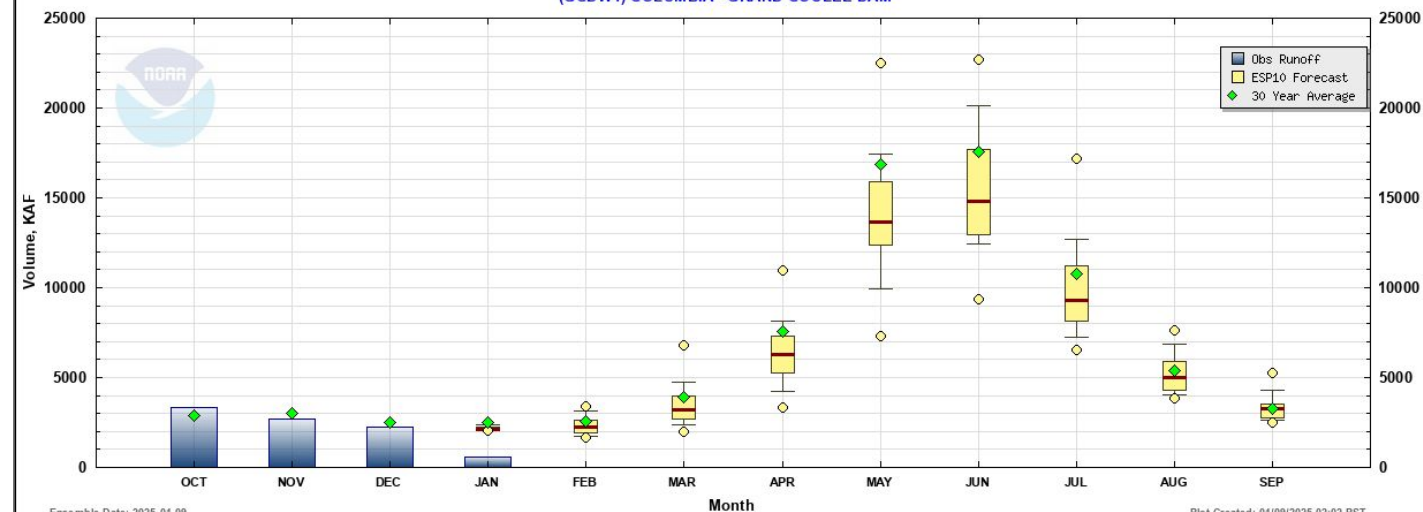


☒ Max Scale ☐ Scale To Data ☐ Scale To Last 45 Days ☒ Show Min/Max Ensemble Volume ☐ Show Tooltips Help

nwrfc.noaa.gov/water_supply/ws_forecasts.php?id=GCDW1

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

(GCDW1) COLUMBIA - GRAND COULEE DAM





ESP10 Monthly Water Supply Forecast

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2025

Official Water Supply

ESP with 10 Days QPF Ensemble: 2025-01-09 Issued: 2025-01-09

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	67343	82591	88	98326	94166
APR-JUL	57347	69834	85	83919	81933
APR-AUG	63259	77641	87	92439	89196
JAN-SEP	87985	103852	90	121827	115946
JAN-JUL	77429	91094	88	106651	103714
OCT-SEP	102053	117920	89	135895	132314

Experimental Water Supply

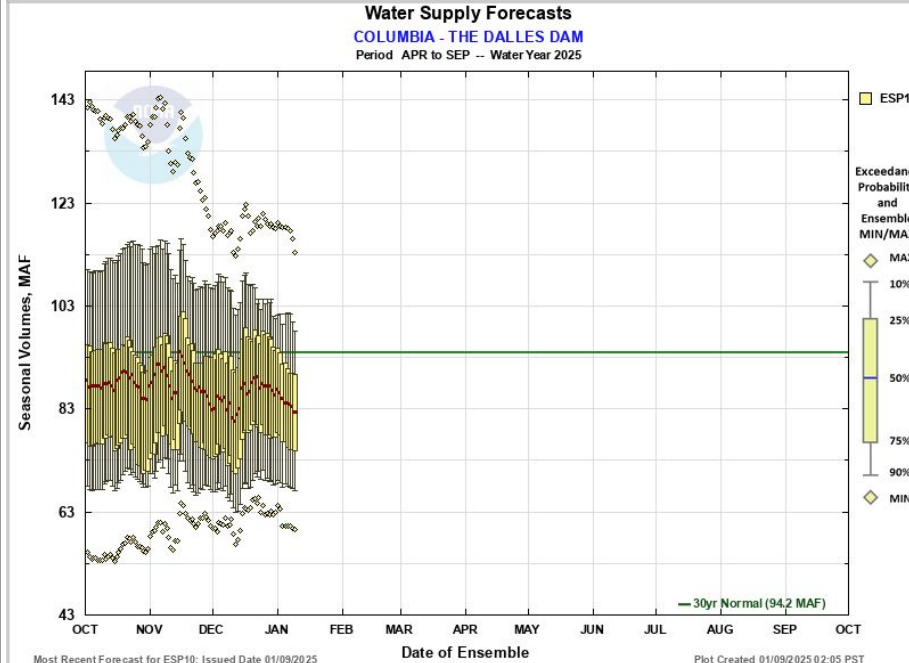
HEFS with 15 days EQPF Ensemble: 2025-01-09 Issued: 2025-01-09

APR-SEP	68090	84285	90	99879	94166
APR-JUL	57692	71410	87	87022	81933
APR-AUG	63840	79441	89	94594	89196
JAN-SEP	88345	105595	91	124467	115946
JAN-JUL	77792	92967	90	110390	103714
OCT-SEP	102413	119663	90	138534	132314

Reference

ESP with 0 Days QPF Ensemble: 2025-01-09 Issued: 2025-01-09

APR-SEP	69199	87433	93	103060	94166
APR-JUL	58539	74666	91	90506	81933
APR-AUG	64442	82192	92	97724	89196
JAN-SEP	89902	108785	94	128723	115946
JAN-JUL	79318	95592	92	114676	103714
OCT-SEP	103970	122853	93	142791	132314



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

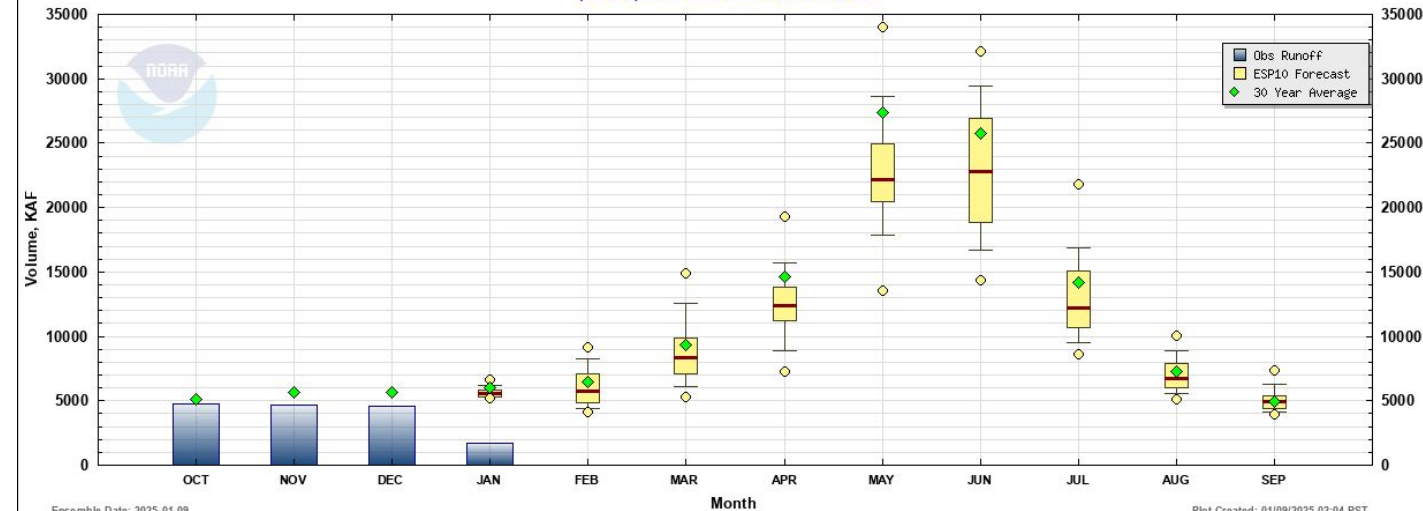
Most Recent Forecast for ESP10: Issued Date 01/09/2025

Plot Created 01/09/2025 02:05 PST

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

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

(TDAO3) COLUMBIA - THE DALLES DAM

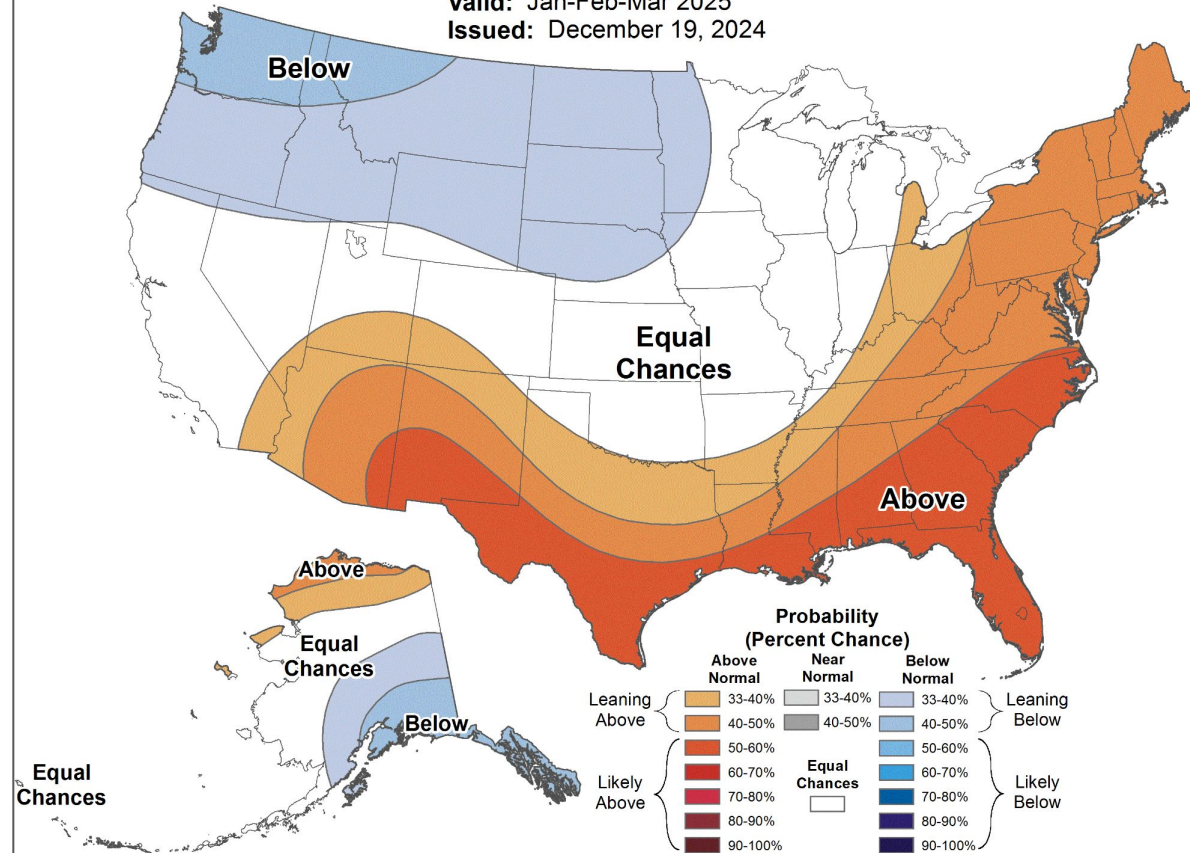


Ensemble Date: 2025-01-09

Plot Created: 01/09/2025 02:04 PST

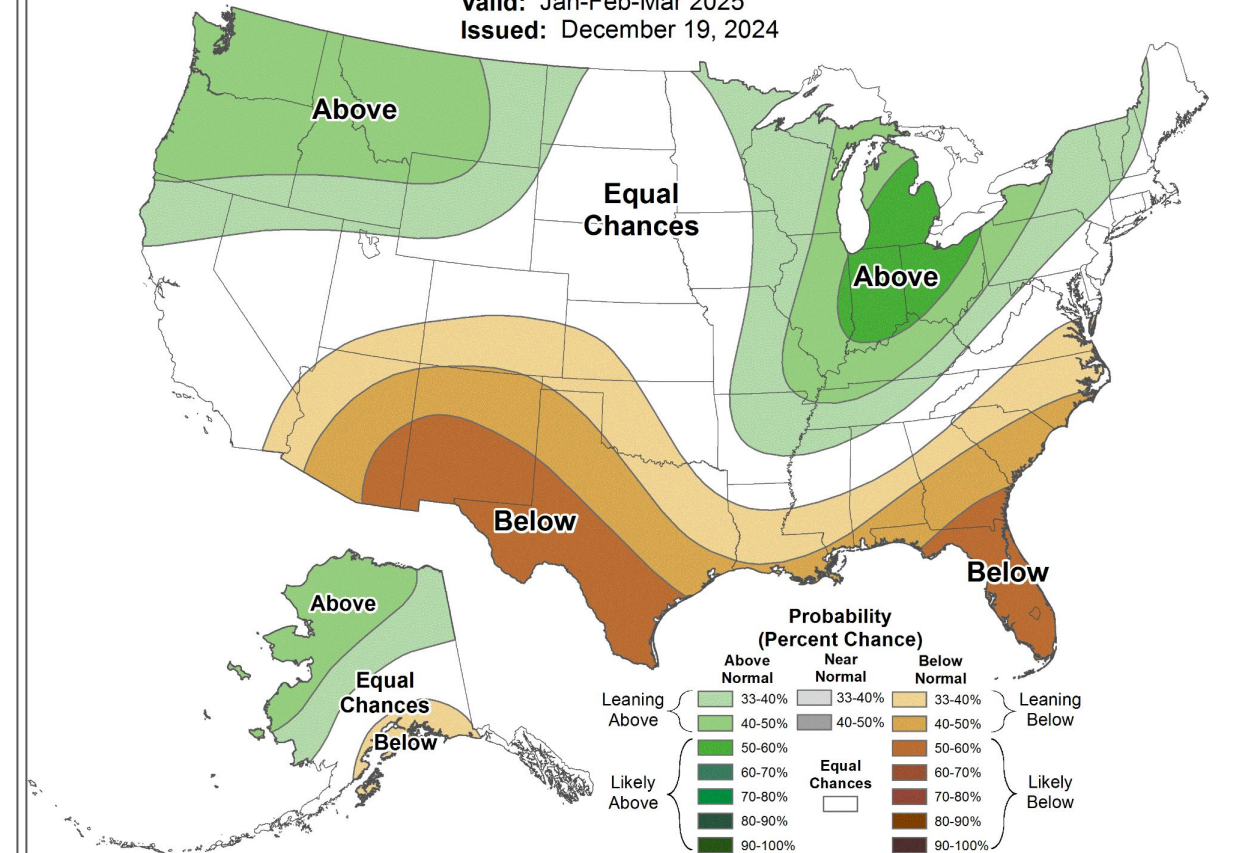
Seasonal Temperature Outlook

Valid: Jan-Feb-Mar 2025
Issued: December 19, 2024



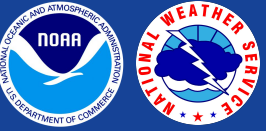
Seasonal Precipitation Outlook

Valid: Jan-Feb-Mar 2025
Issued: December 19, 2024



Key Takeaways

- Water year 2024 had much below normal Apr - Sep runoff in the northern portions of the Columbia basin.
- Water year to date precipitation has been largely above normal in the west and below normal in the east.
- Temperatures have been mostly above normal.
- Snowpack is a mix of above and below normal. Some areas with record high amounts and other with much below normal.
- Runoff and water supply forecasts are a mix of above and below normal.
- The 10 day forecast indicates lower than normal precipitation and cold temperatures.
- Climate Prediction Center is calling for increased chances of cold and wet conditions for Jan - Mar.



Northwest River Forecast Center News

- Staffing updates:
 - Joe Intermill, NWRFC Hydrologist in Charge retired; Steve King is our new HIC.
 - Look for NWRFC Hydrologist job announcements (x2) in coming weeks.
- ESP forcings for water year 2024 are online

Monthly Water Supply Briefings First Thursday of Each Month

nwrfc.noaa.gov/water_supply/ws_schd.cgi

Feb	Mar	Apr	May	Jun
6	6	3	1	TBD

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



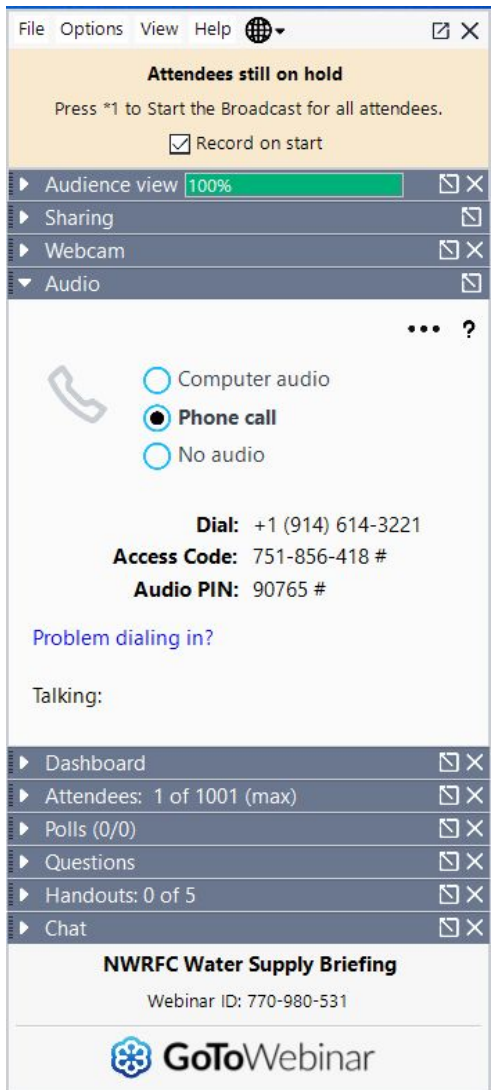
nwrfc.watersupply@noaa.gov



(503) 326-7291



nwrfc.noaa.gov

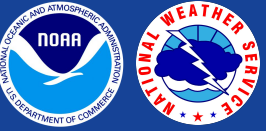


Type questions in the webinar chat or use the 'Raise Hand' function.

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



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ENSO predictions

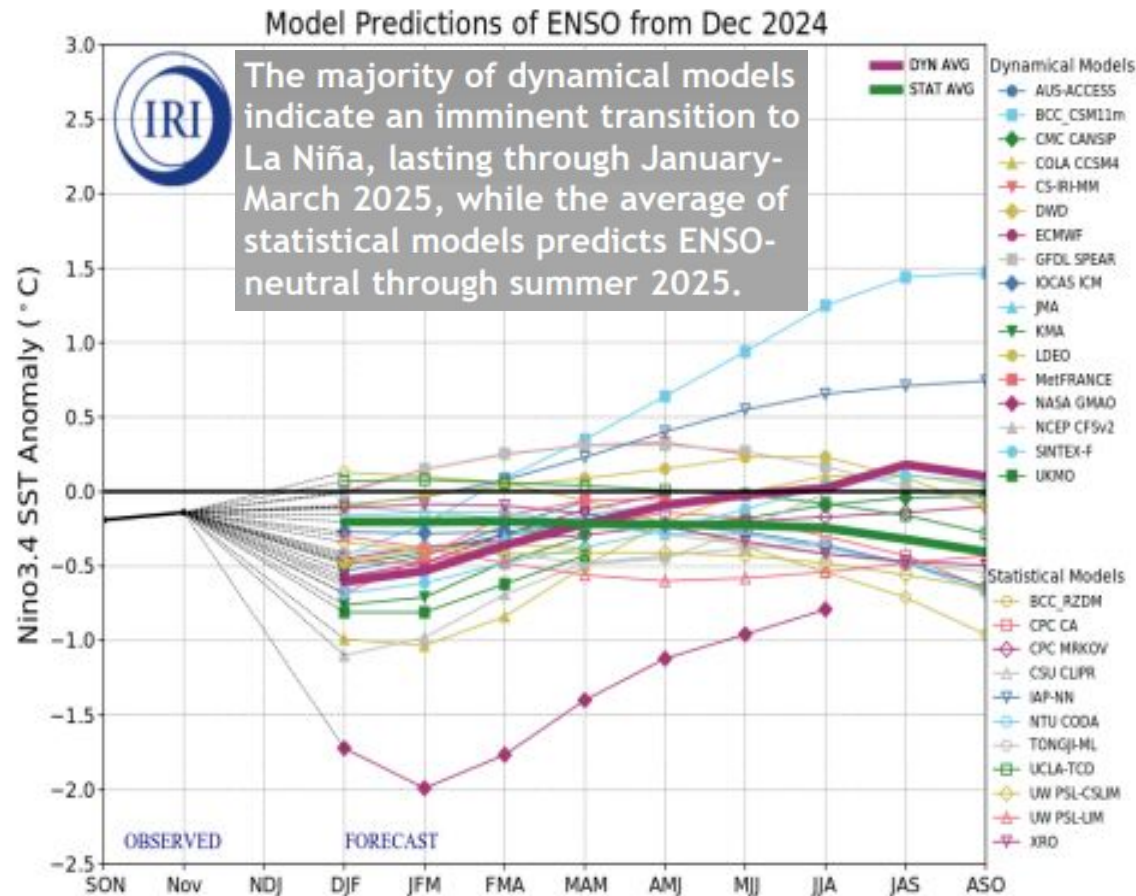
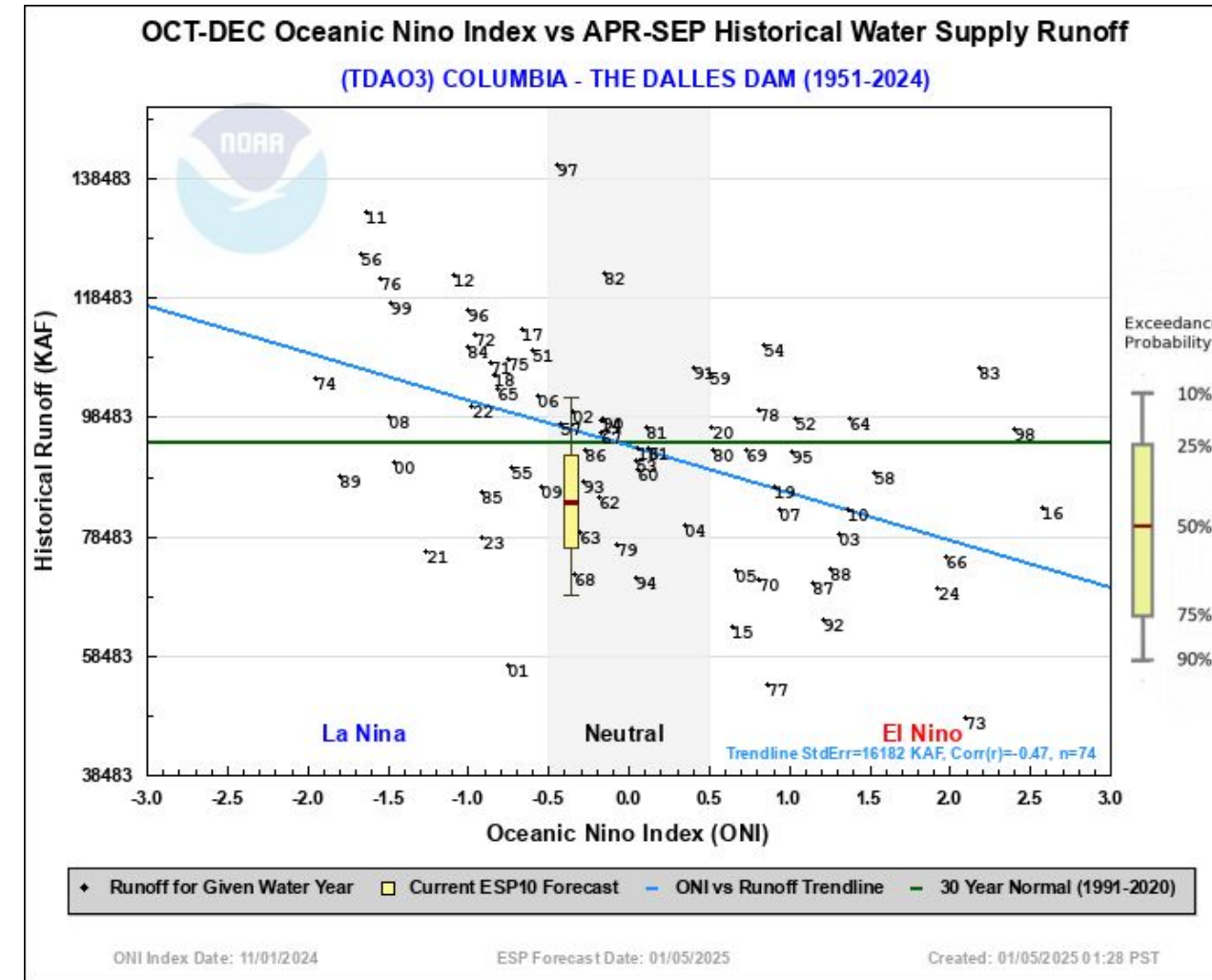


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 19 December 2024).



Precipitation, Snow Pack, Runoff and Water Supply Forecasts

