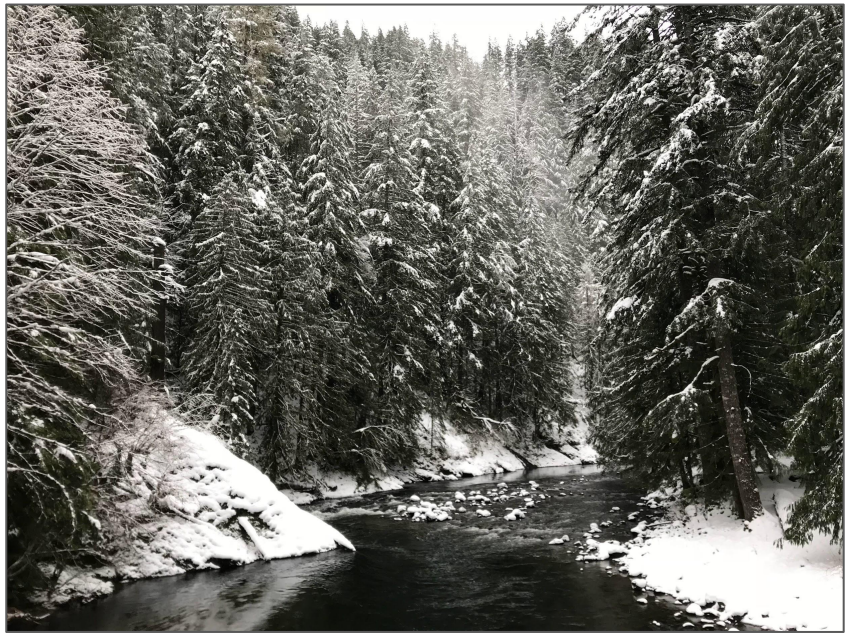
Northwest River Forecast Center

February 2025 Water Supply Briefing

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

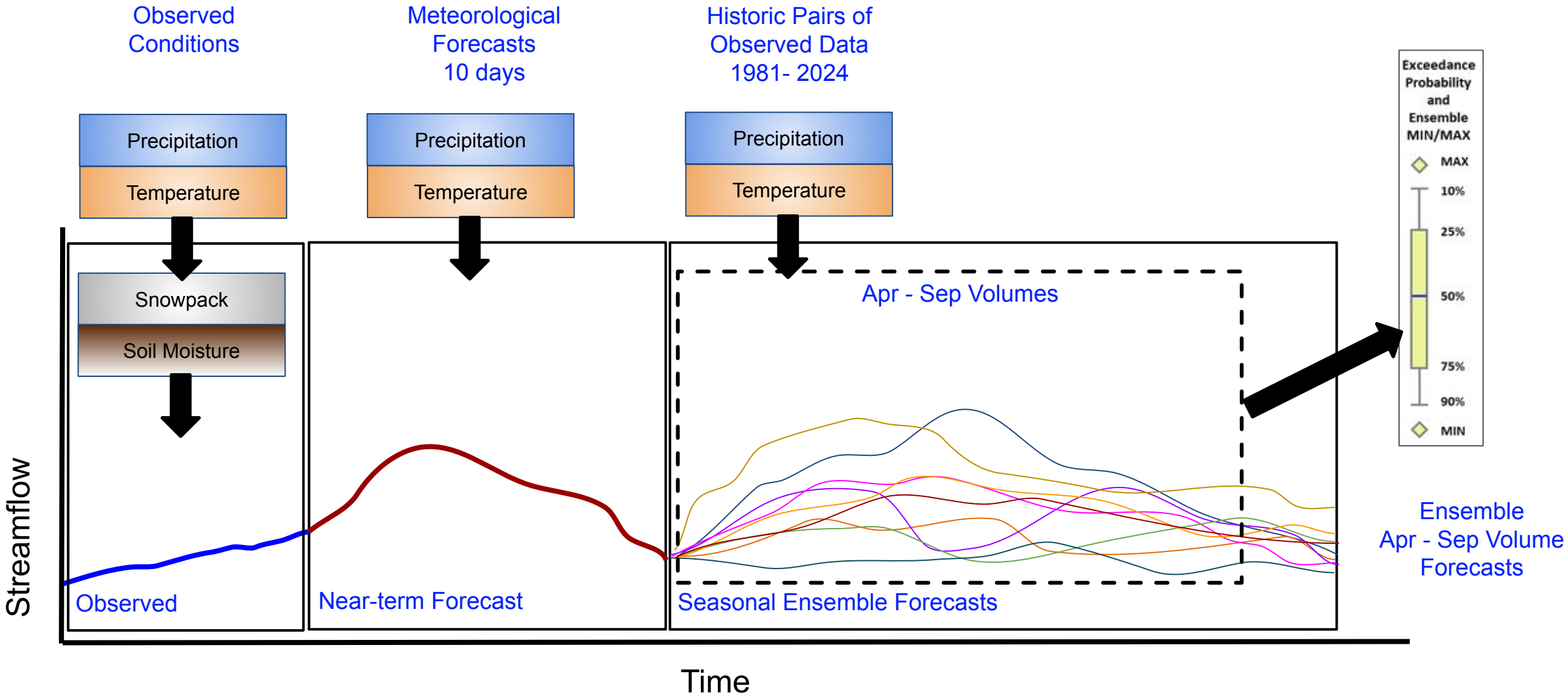
February 6, 2025



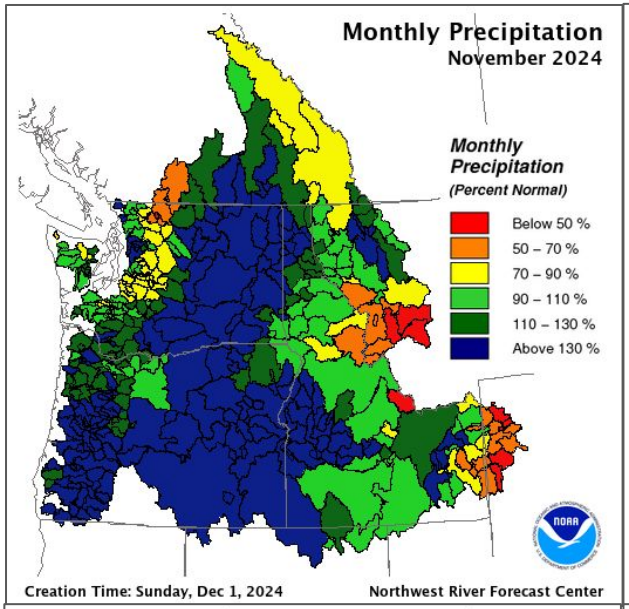
Key Takeaways

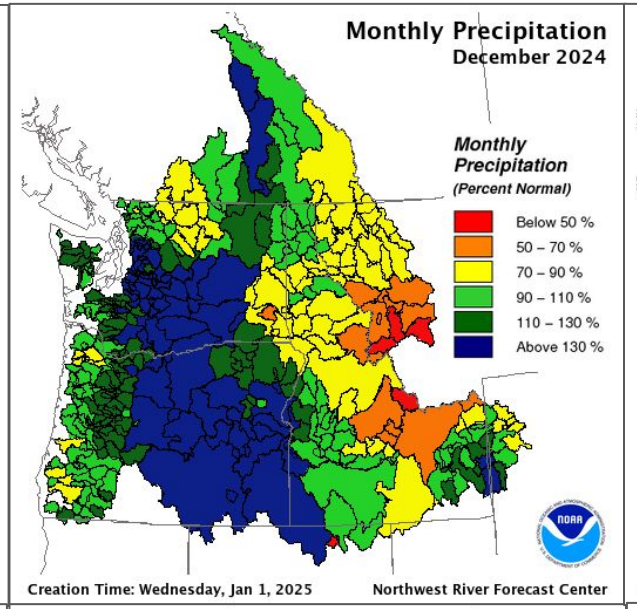
- A dry but cool January dampened observed river runoff basinwide, but was followed by a wet start for February.
- Snowpack remained steady in Canadian portion of the Columbia, but showed some accumulation most noticeable in the south.
- Observed runoff remains a mix of above and below normal conditions.
- Water supply forecasts also shows a mix of conditions, but a clearer geographic distinction between the northern and southern portion of the domain.

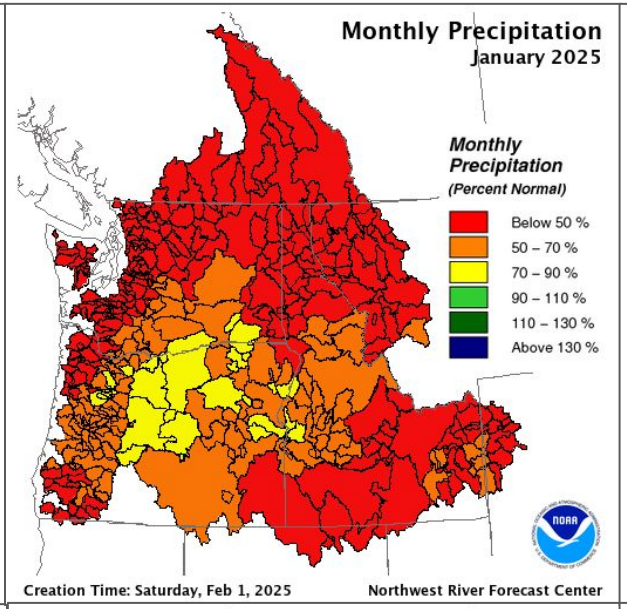
NWRFC Forecast Technique: Ensemble Streamflow Prediction

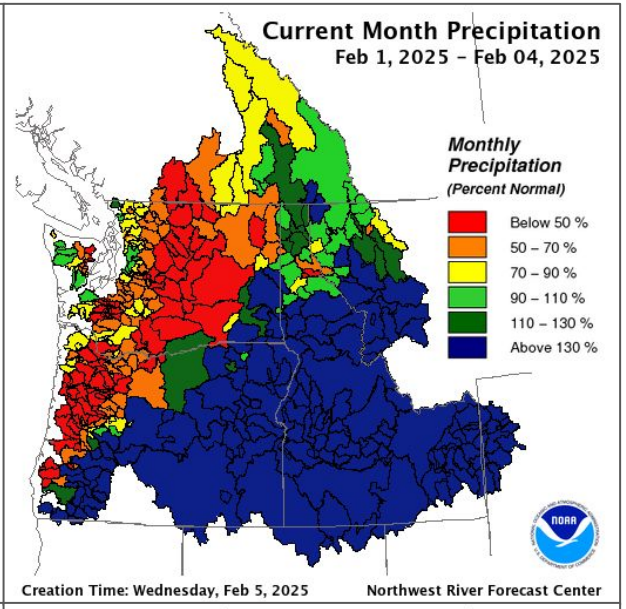


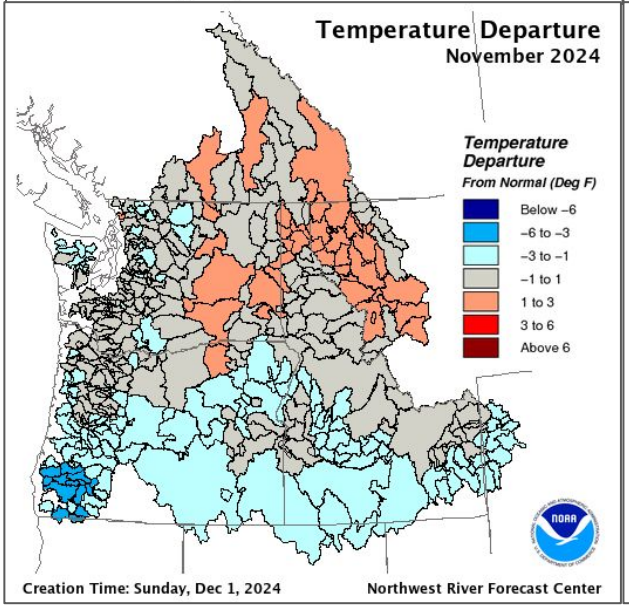
Observed Monthly Precipitation and Temperature

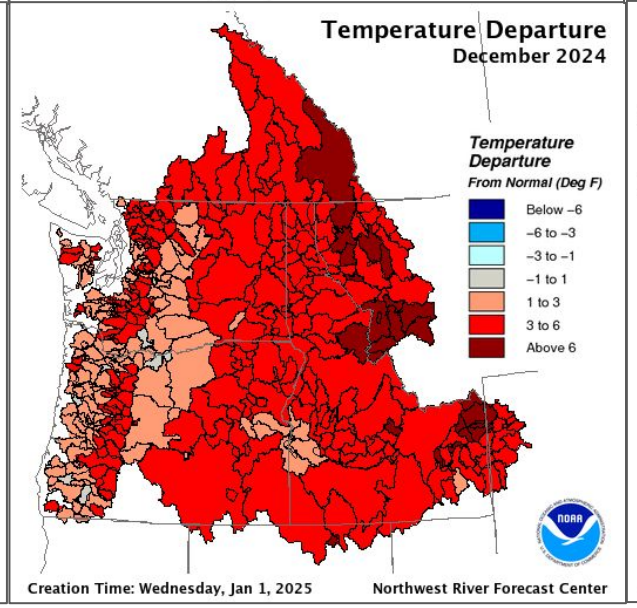


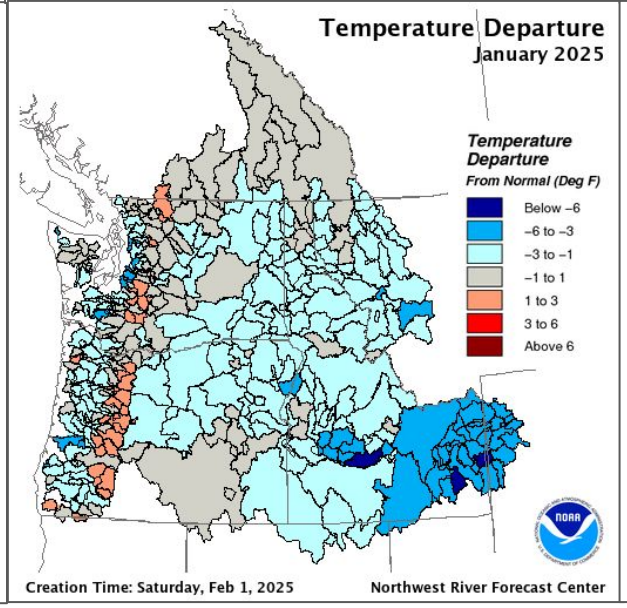


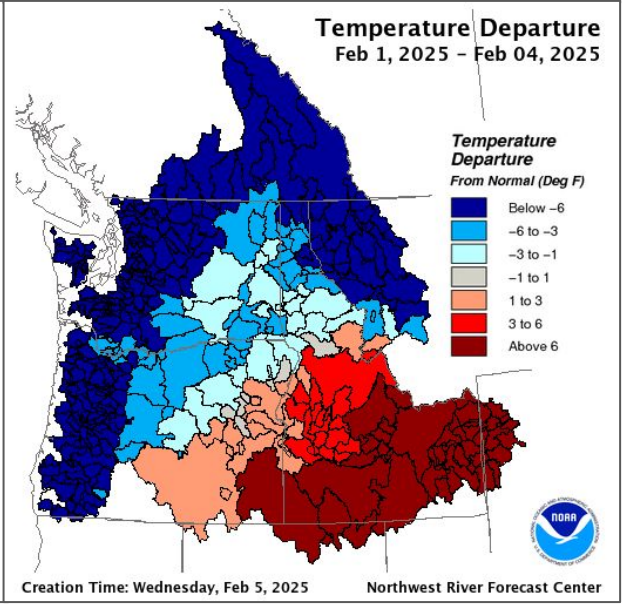






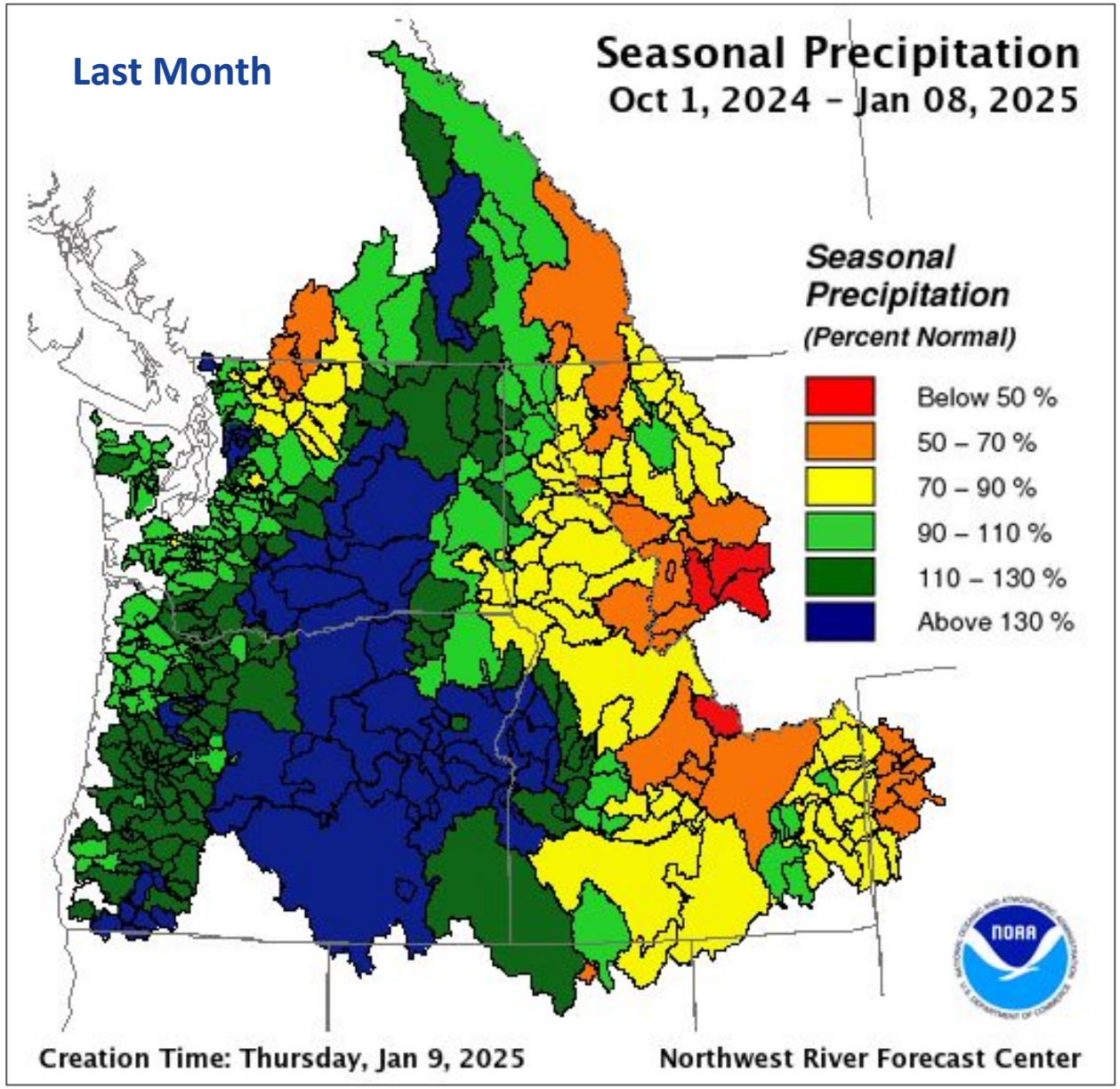


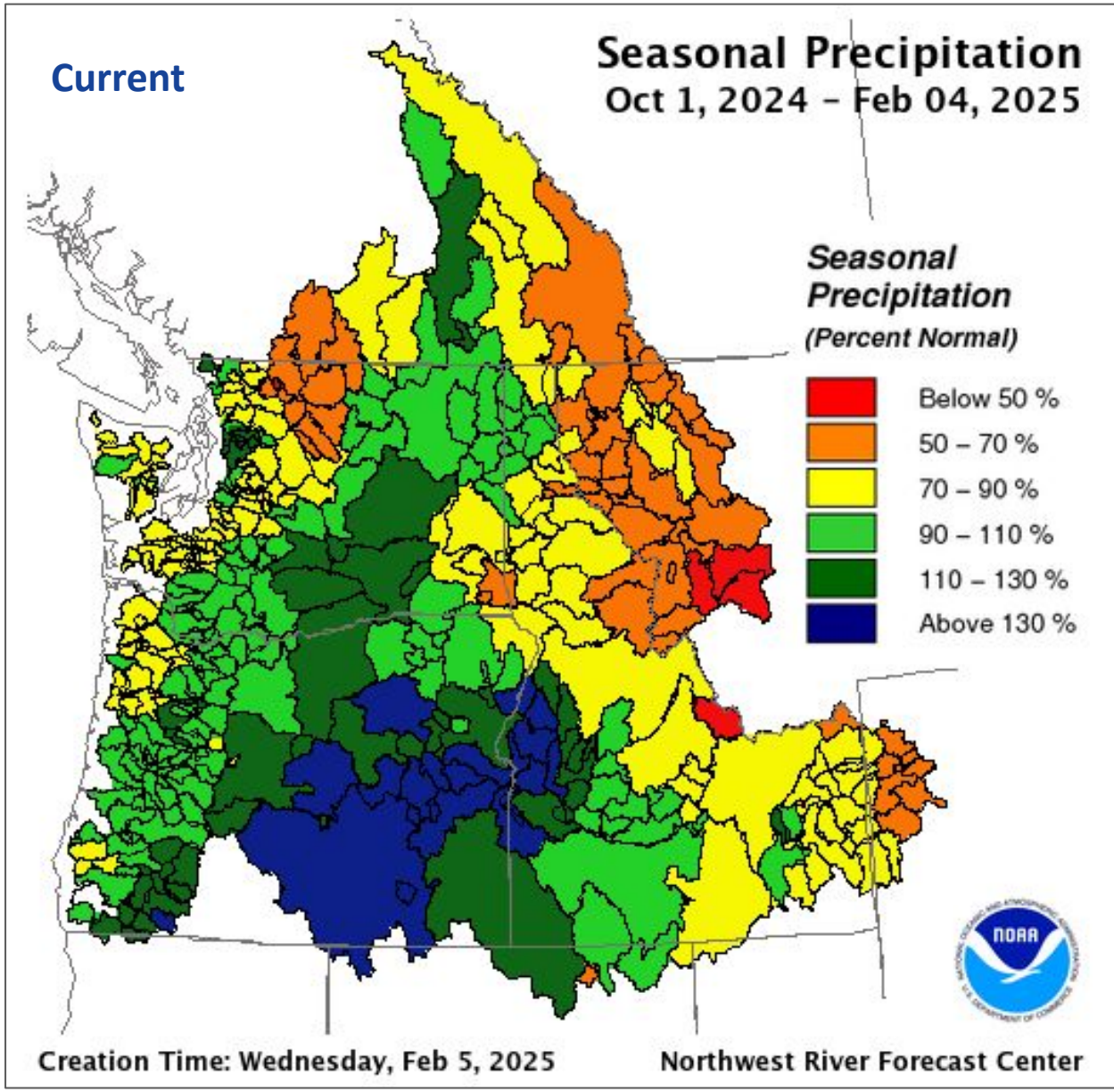




nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=2

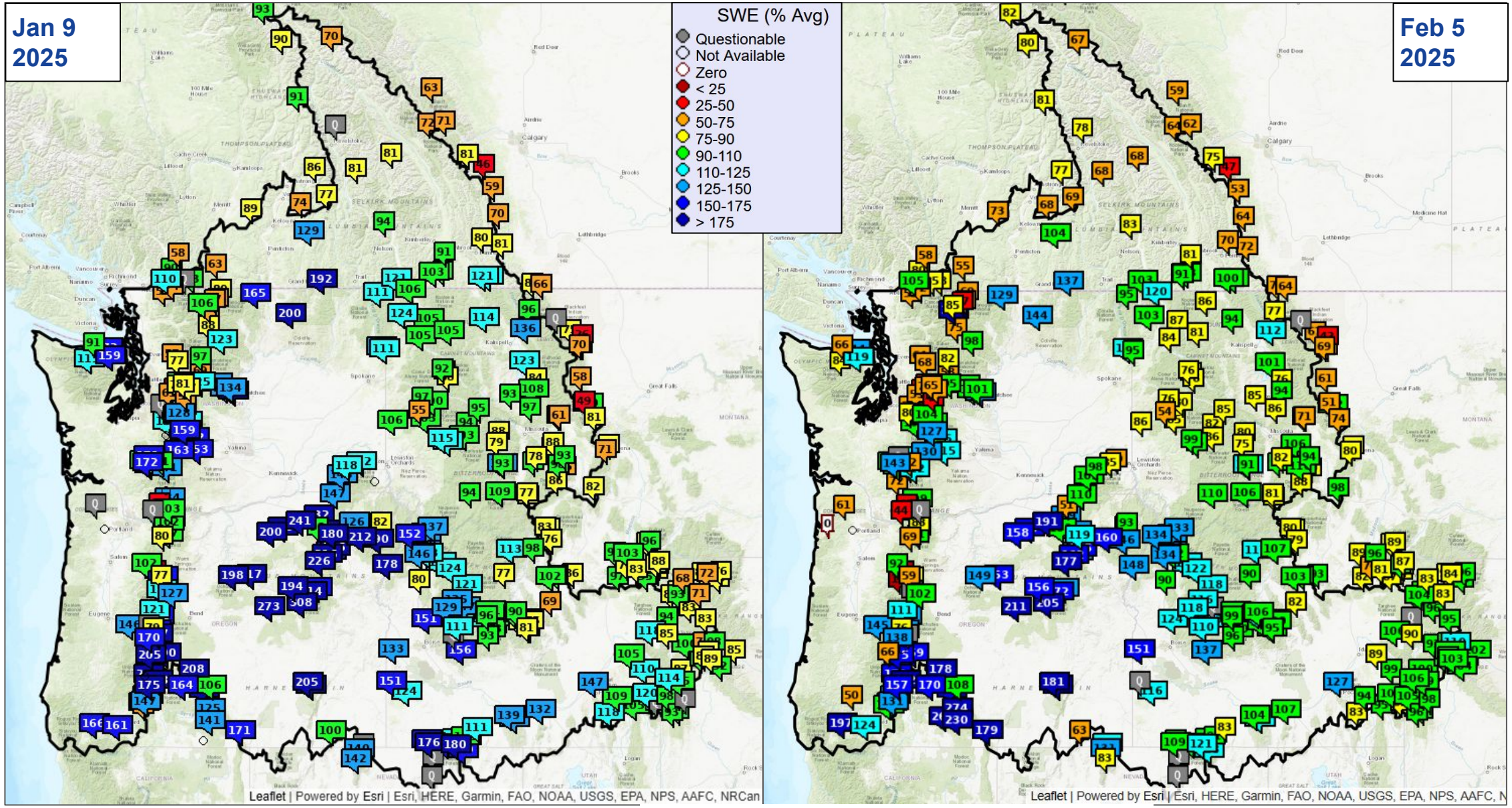
Water Year Precipitation





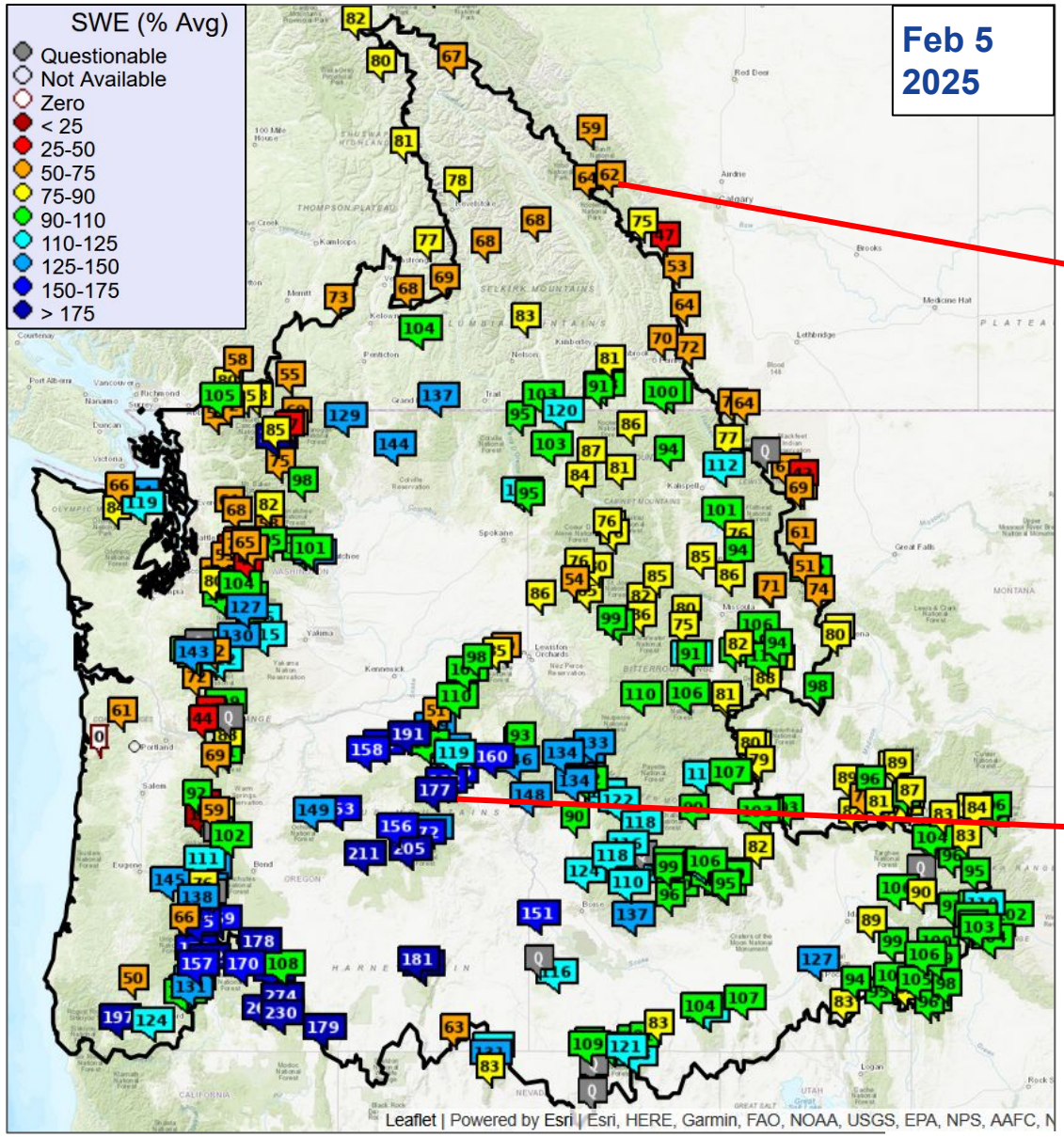
nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=2

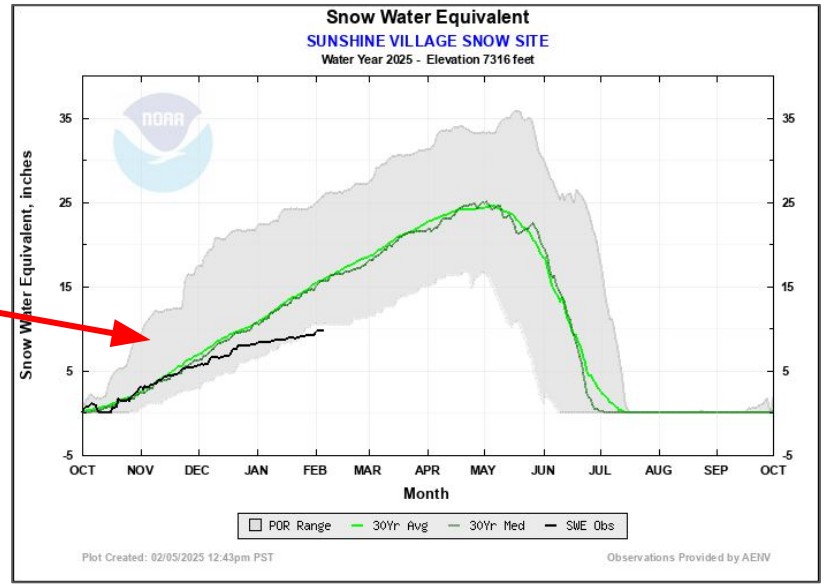
Snowpack

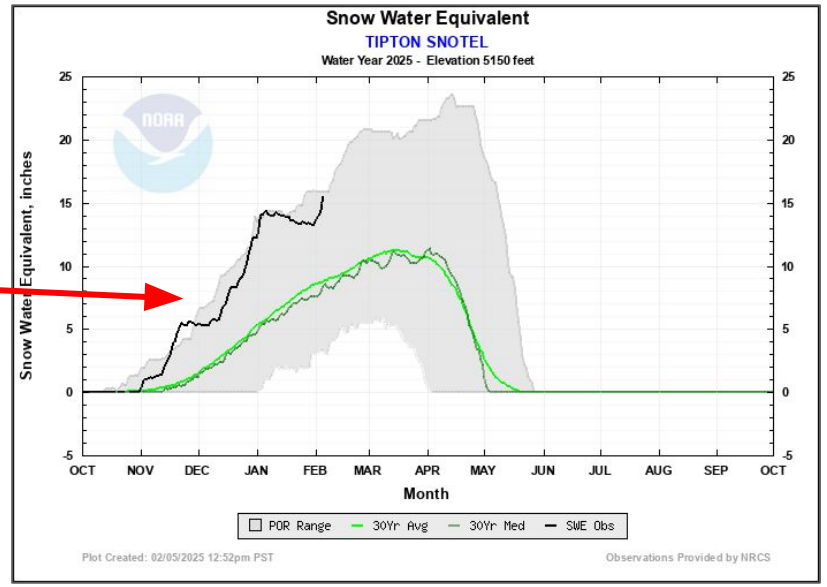


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

Snowpack

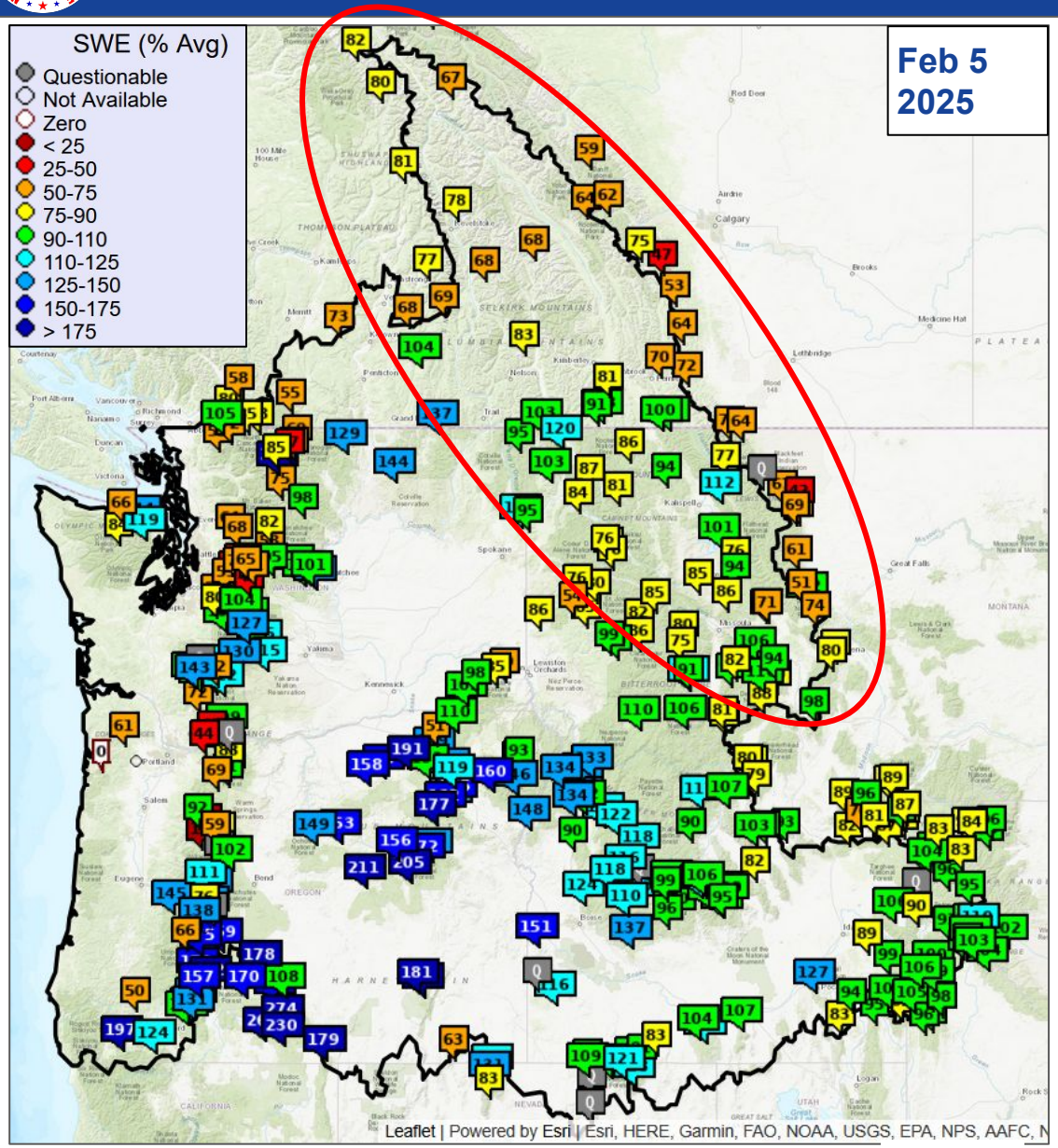




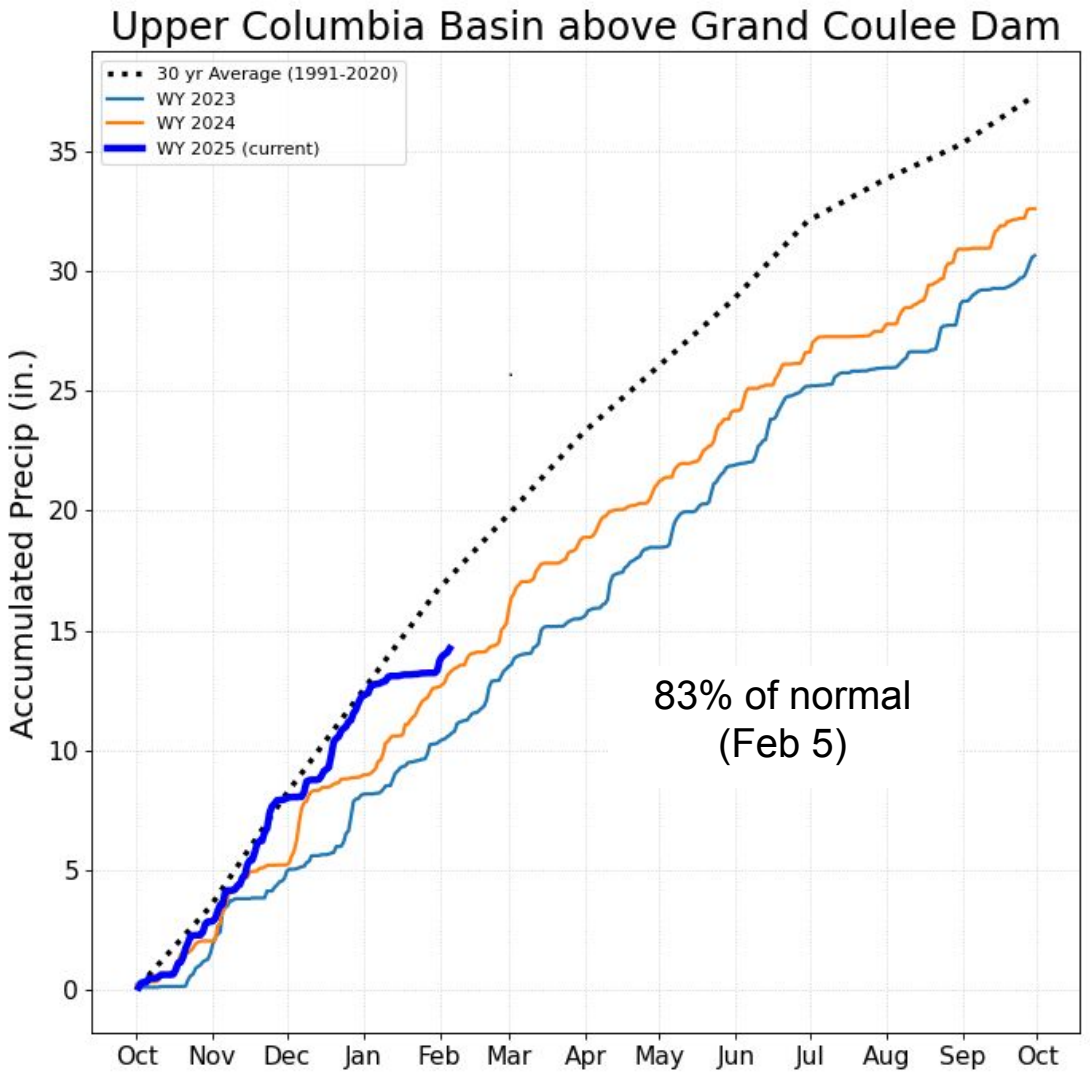


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

Snowpack and Precipitation

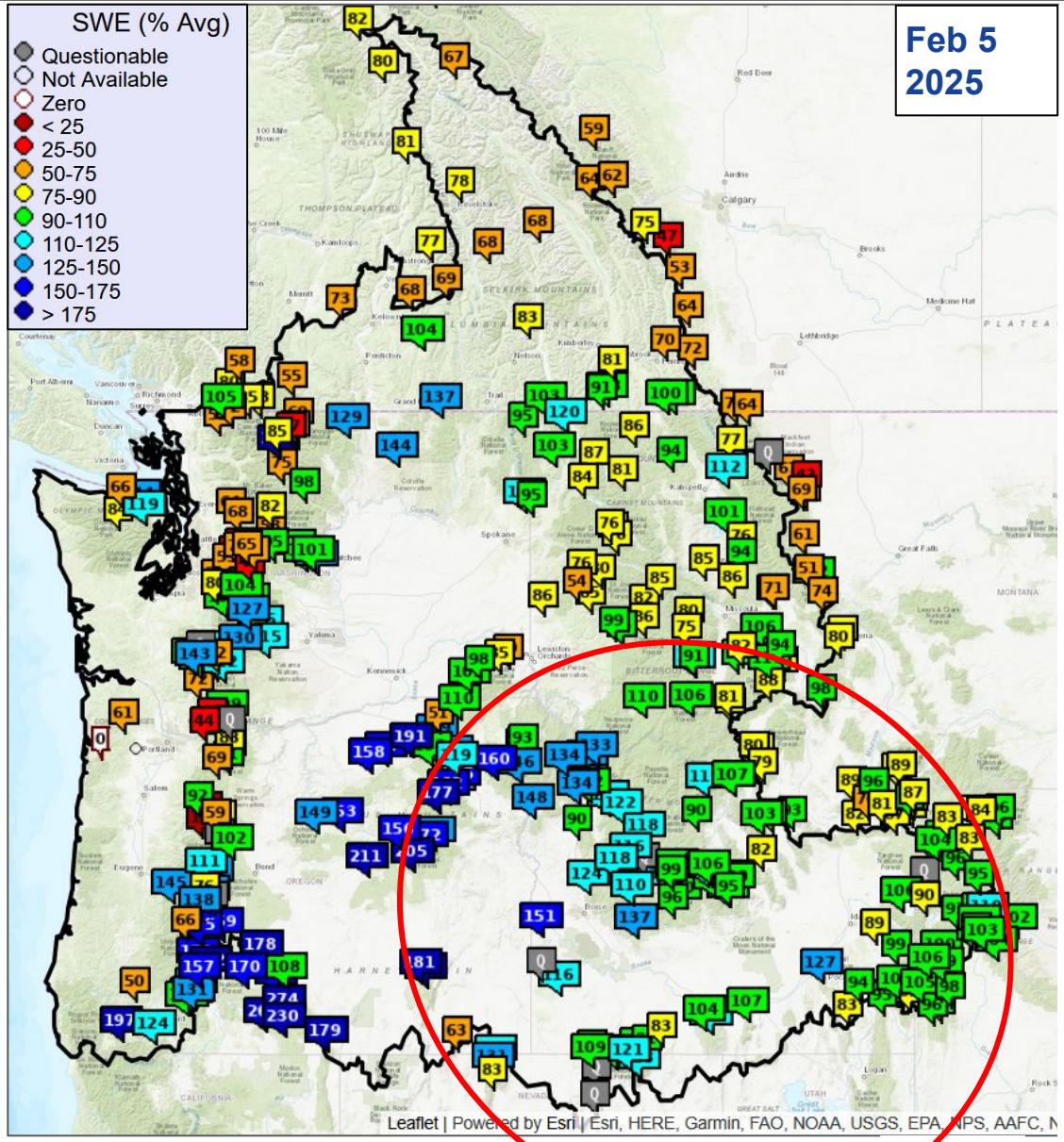


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

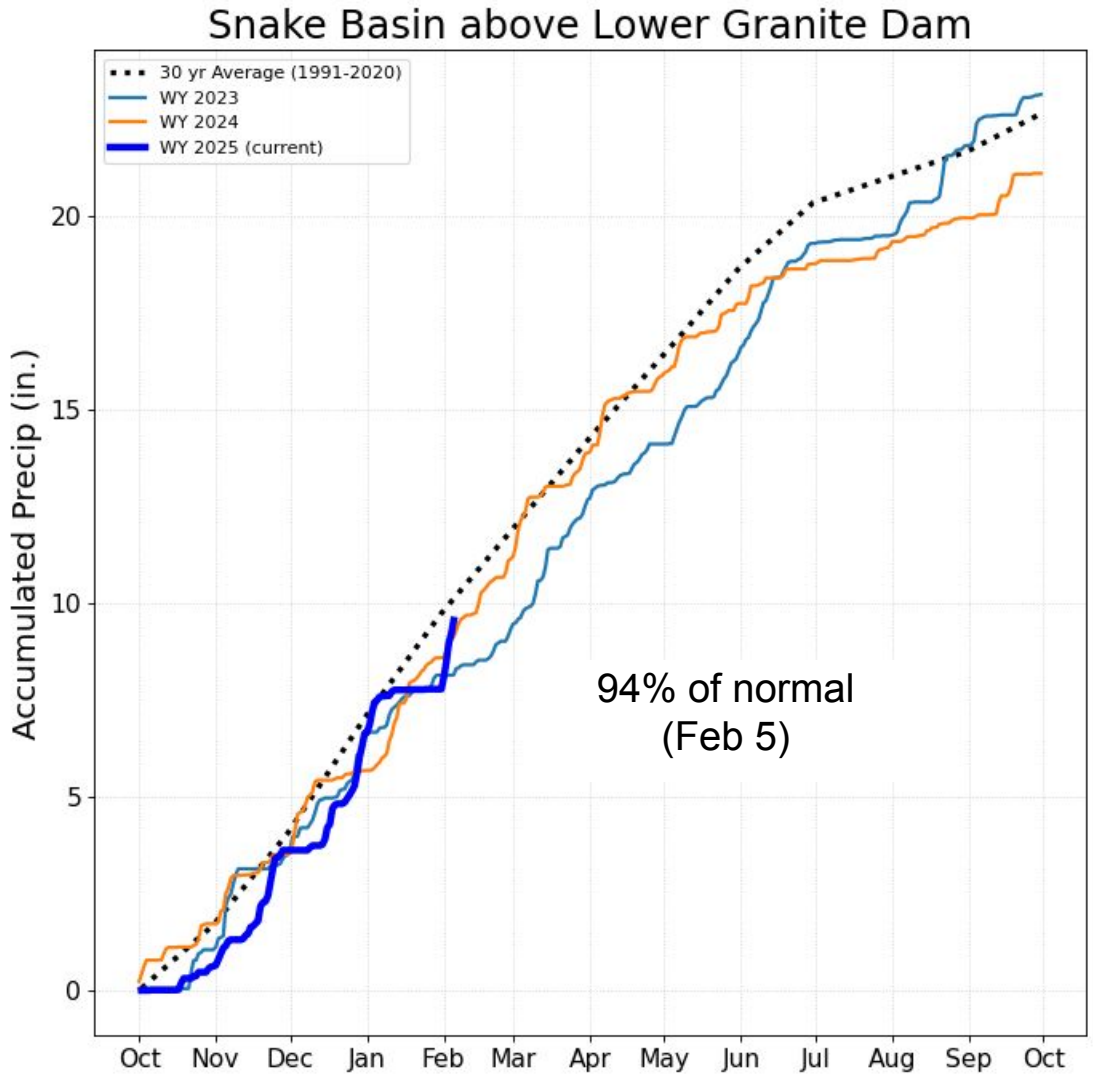


Precip averages from PRISM, OSU and PCIC.

Snowpack and Precipitation

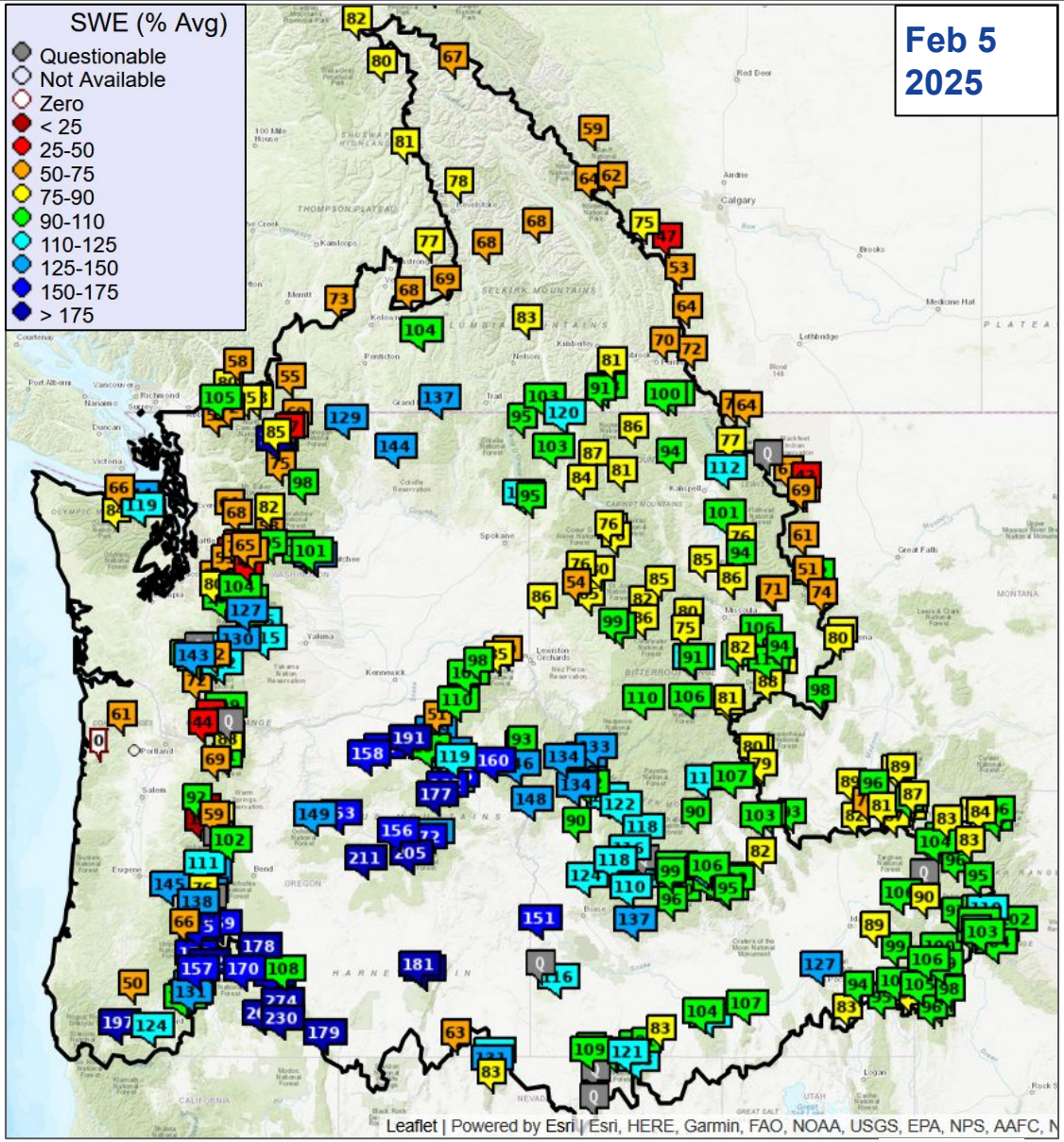


Snow data from Natural Resources Conservation Service, BC Hydro, Ministry of Environment and Climate Change Strategy, and Alberta Environment and Parks.

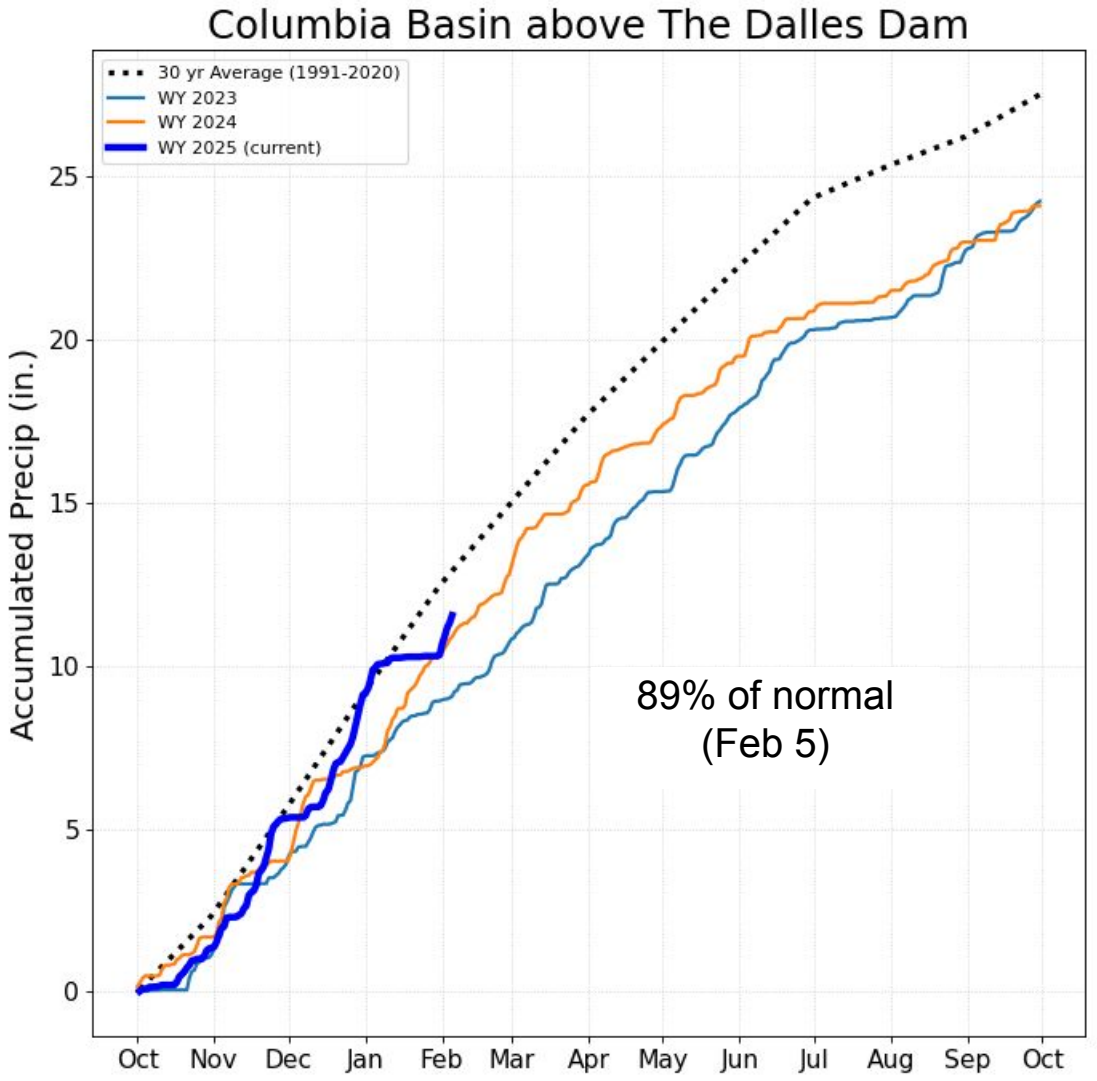


Precip averages from PRISM, OSU and PCIC.

Snowpack and Precipitation



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

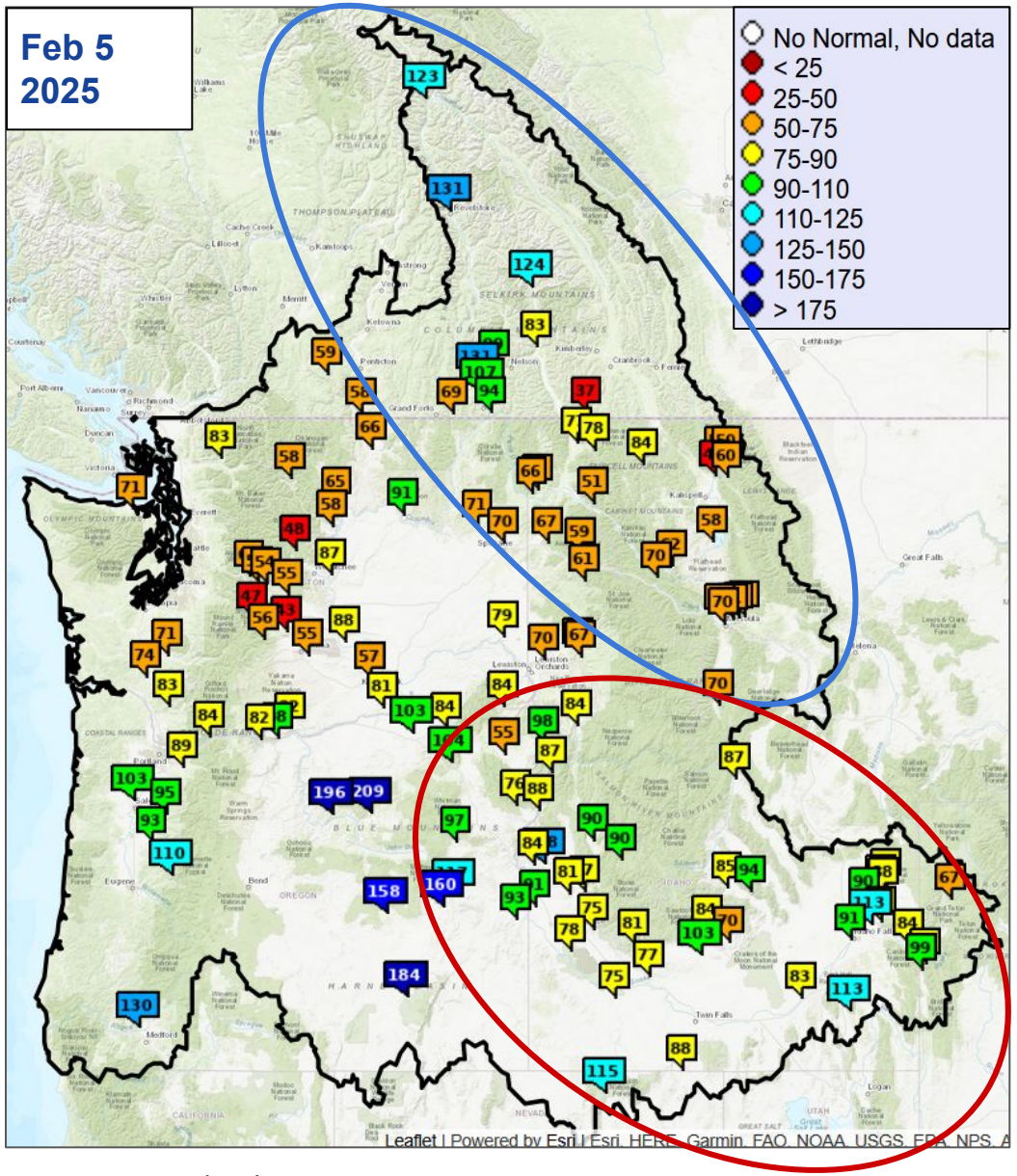


Precip averages from PRISM, OSU and PCIC.

Water Year to Date Adjusted Observed Runoff

% Normal Runoff Oct 1 - Feb 5

Upper Columbia Basin		Δ since Jan 9
Mica	123	-7
Duncan	124	-6
Queens Bay	83	-5
Libby	84	-5
Hungry Horse	60	-1
Grand Coulee	91	-7
Snake River Basin		
American Falls	83	0
Lucky Peak	75	-2
Dworshak	72	-8
Lower Granite	79	-3
Lower Columbia Basin		
The Dalles	82	-6

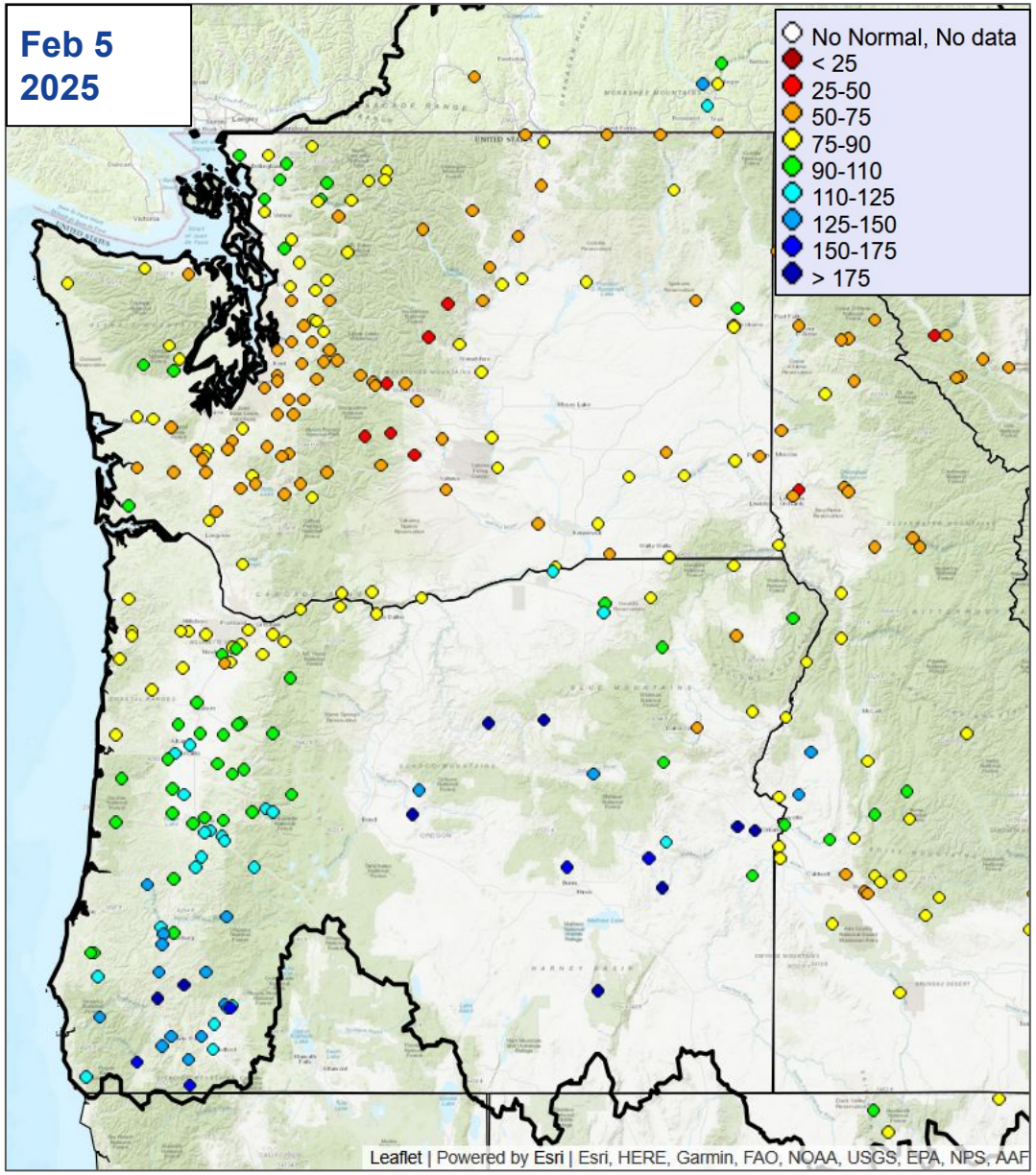


nwrfc.noaa.gov/ws/index.html?version=20190313v1

Water Year to Date Natural Observed Runoff

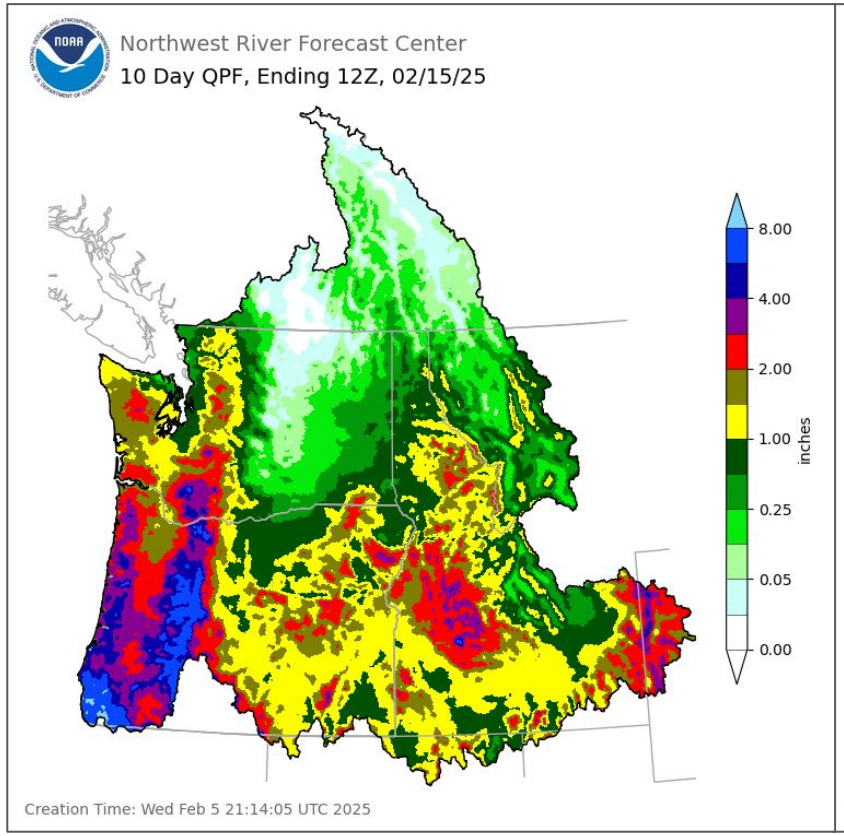
% Normal Runoff Oct 1 - Feb 5

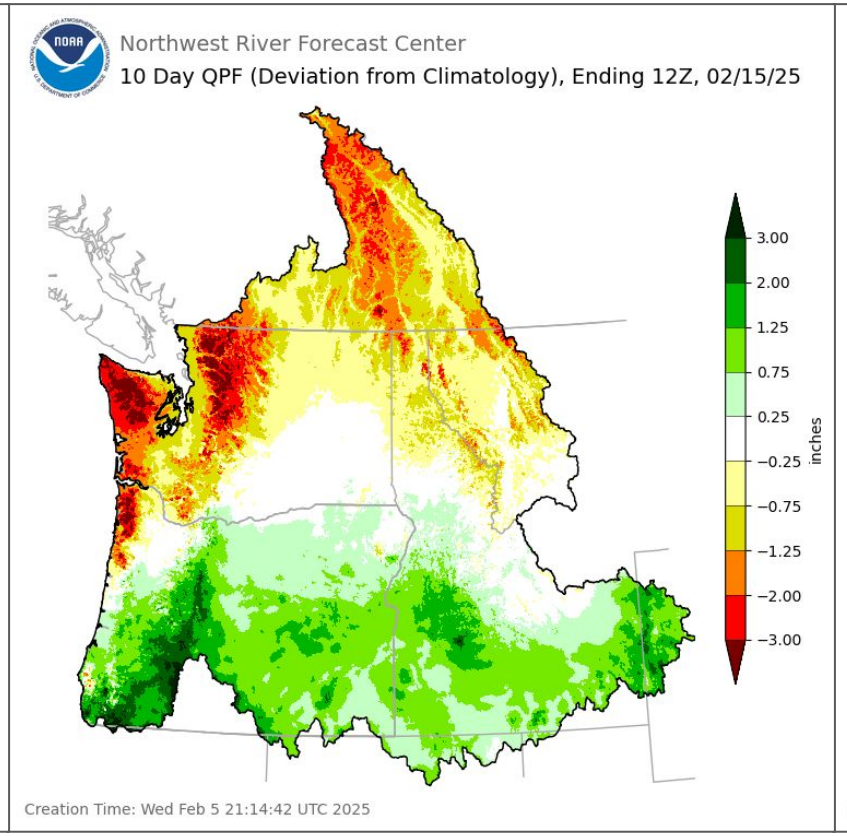
Washington		**Δ since Jan 9**
Skagit near Mt Vernon	85	-10
Dungeness near Sequim	71	-9
Chehalis at Porter	72	-16
Okanogan at Malott	69	-1
Methow near Pateros	65	2
Yakima at Parker	51	-3
Walla Walla near Touchet	66	-18
Oregon		
Willamette at Salem	95	-19
Rogue at Raygold	131	-17
Umatilla at Pendleton	101	-30
Grande Ronde at Troy	83	-9
Crooked near Prineville	188	-66
Owyhee Dam	109	-16

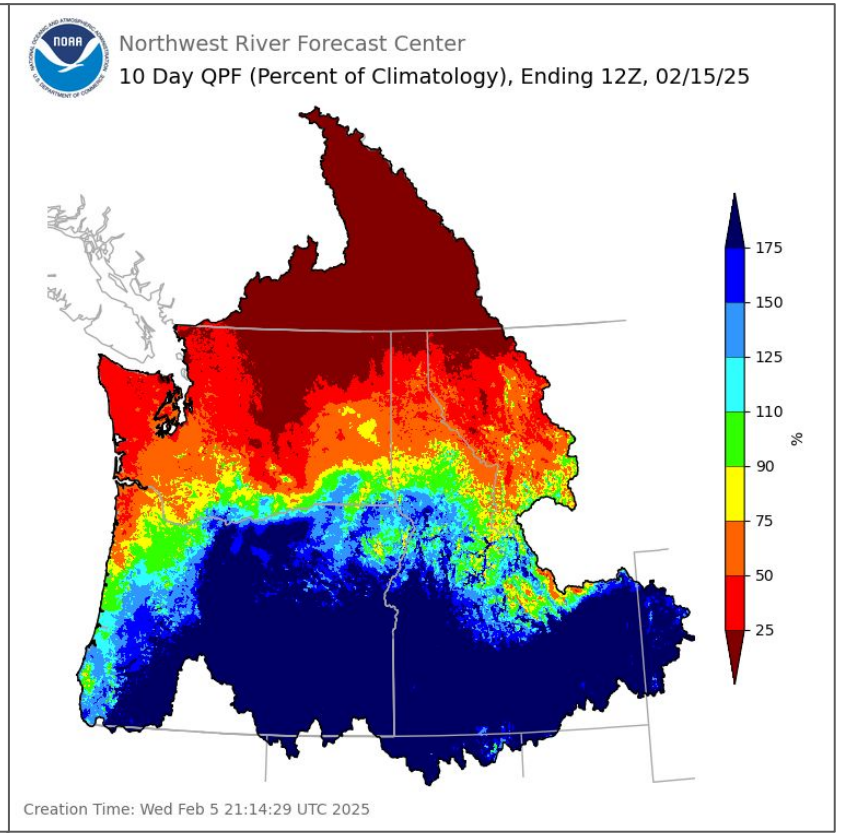


nwrfc.noaa.gov/natural/index.html?version=20190313v1

10 Day Precipitation Forecast used in ESP10





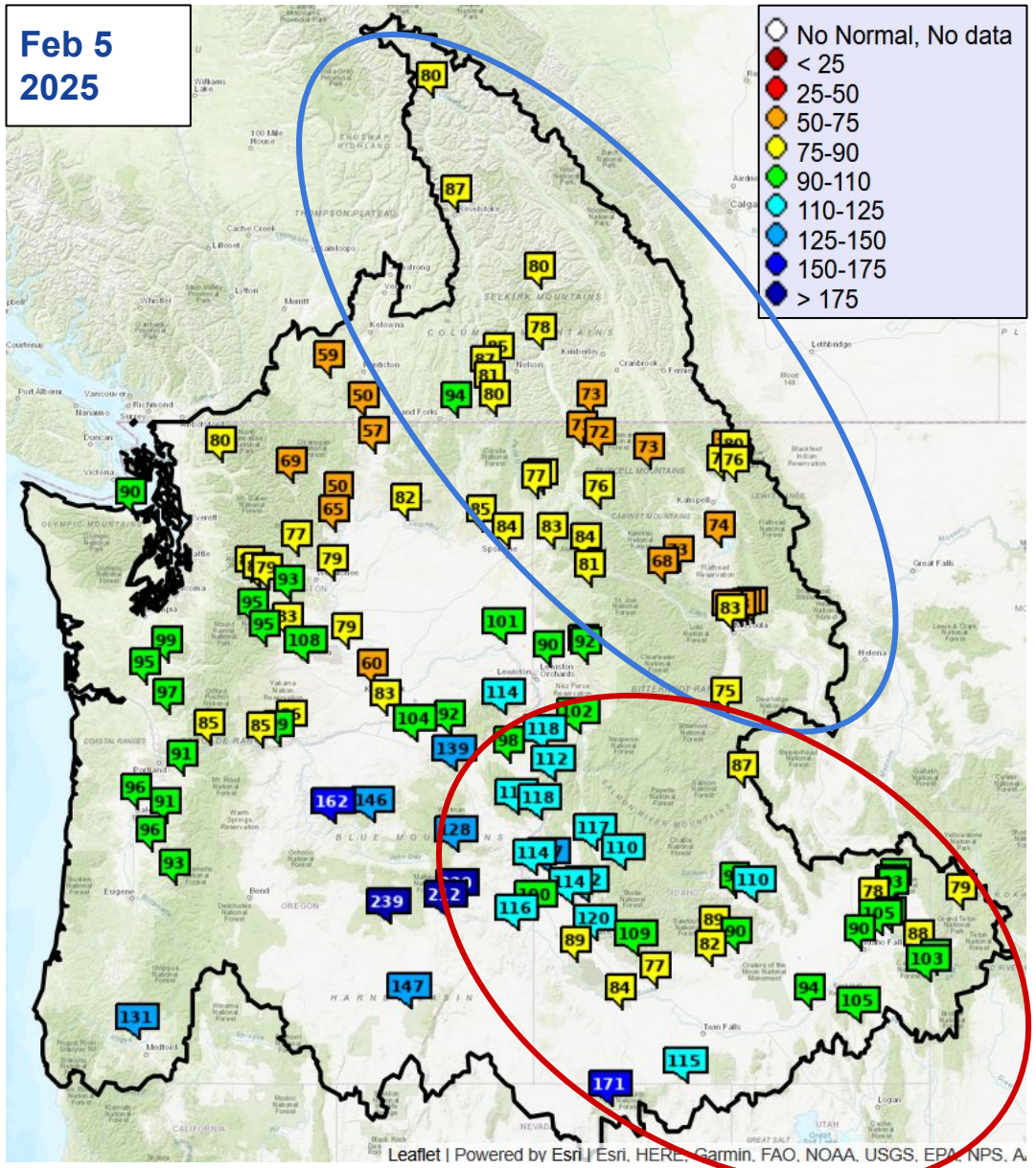


Quantitative Precipitation Forecast (QPF) Sources:

- 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

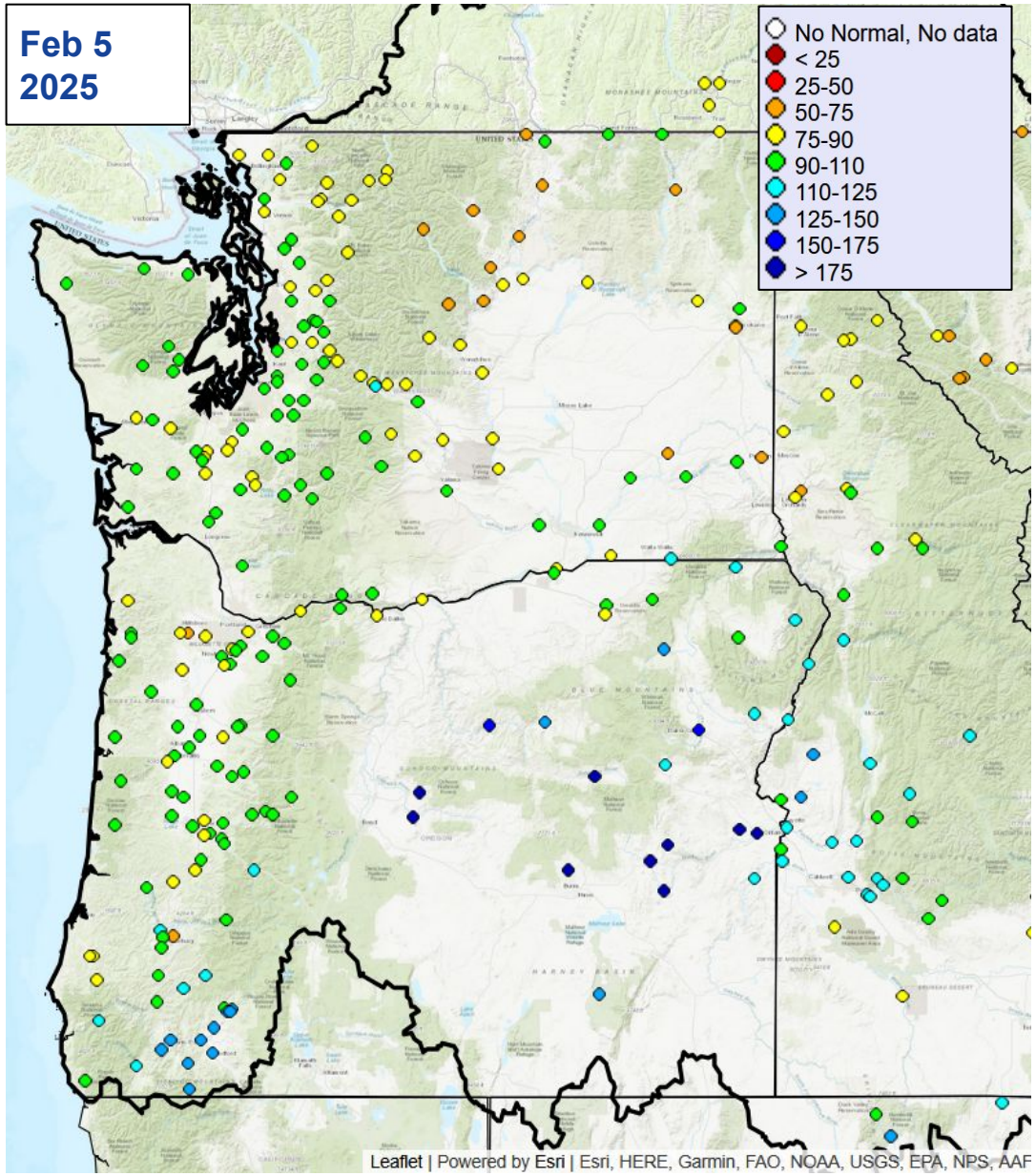
% Normal Apr-Sep Volume		
Upper Columbia Basin		**Δ since Jan 9**
Mica	80	-5
Duncan	80	-7
Queens Bay	78	-8
Libby	73	-10
Hungry Horse	76	-7
Grand Coulee	82	-6
Snake River Basin		
American Falls	94	21
Lucky Peak	120	23
Dworshak	90	1
Lower Granite	101	7
Lower Columbia Basin		
The Dalles	85	-3



nwrfc.noaa.gov/ws/index.html?version=20190313v1

Natural Water Supply Forecasts

% Normal Apr-Sep Volume		
Washington		**Δ since Jan 9**
Skagit near Mt Vernon	83	-1
Dungeness near Sequim	90	-9
Chehalis at Porter	89	0
Okanogan at Malott	56	-15
Methow near Pateros	50	-10
Yakima at Parker	99	-2
Walla Walla near Touchet	78	-12
Oregon		
Willamette at Salem	92	2
Rogue at Raygold	131	20
Umatilla at Pendleton	104	4
Grande Ronde at Troy	114	3
Crooked near Prineville	194	75
Owyhee Dam	115	28



nwrfc.noaa.gov/natural/index.html?version=20190313v1

ESP10 Water Supply Forecast

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

Official Water Supply

ESP with 10 Days QPF ***Ensemble:*** **2025-02-05** ***Issued:*** 2025-02-05

Forecast Period	Forecasts Are in KAF 90 %	50 %	% Average	10 %	30 Year Average (1991-2020)
APR-SEP	42250	50173	82	57668	61483
APR-JUL	35059	42156	80	47778	52774
APR-AUG	39230	47103	81	53764	58186
JAN-SEP	48756	56391	80	64394	70457
JAN-JUL	42045	48382	78	54329	61749
OCT-SEP	57054	64689	82	72692	78842

Experimental Water Supply

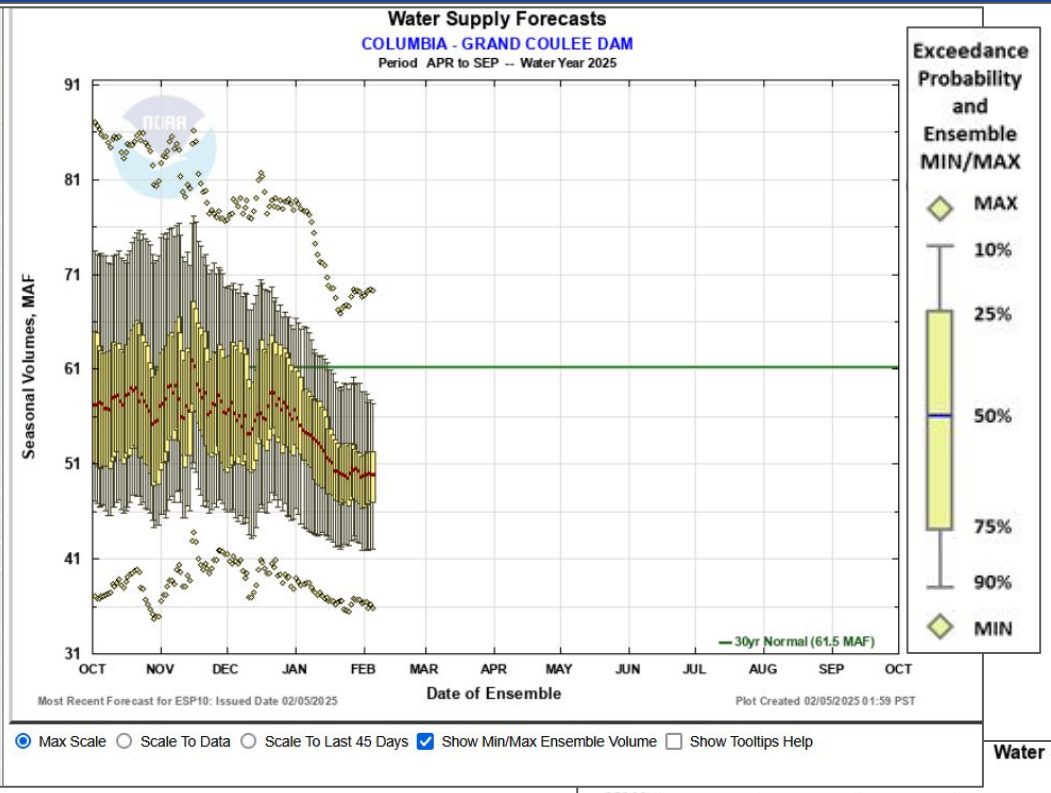
HEFS with 15 days EQPF ***Ensemble:*** **2025-02-05** ***Issued:*** 2025-02-05

APR-SEP	44358	51645	84	60337	61483
APR-JUL	36768	43462	82	50191	52774
APR-AUG	41044	48574	83	56496	58186
JAN-SEP	50770	58029	82	67328	70457
JAN-JUL	43243	49923	81	56997	61749
OCT-SEP	59069	66327	84	75626	78842

Reference

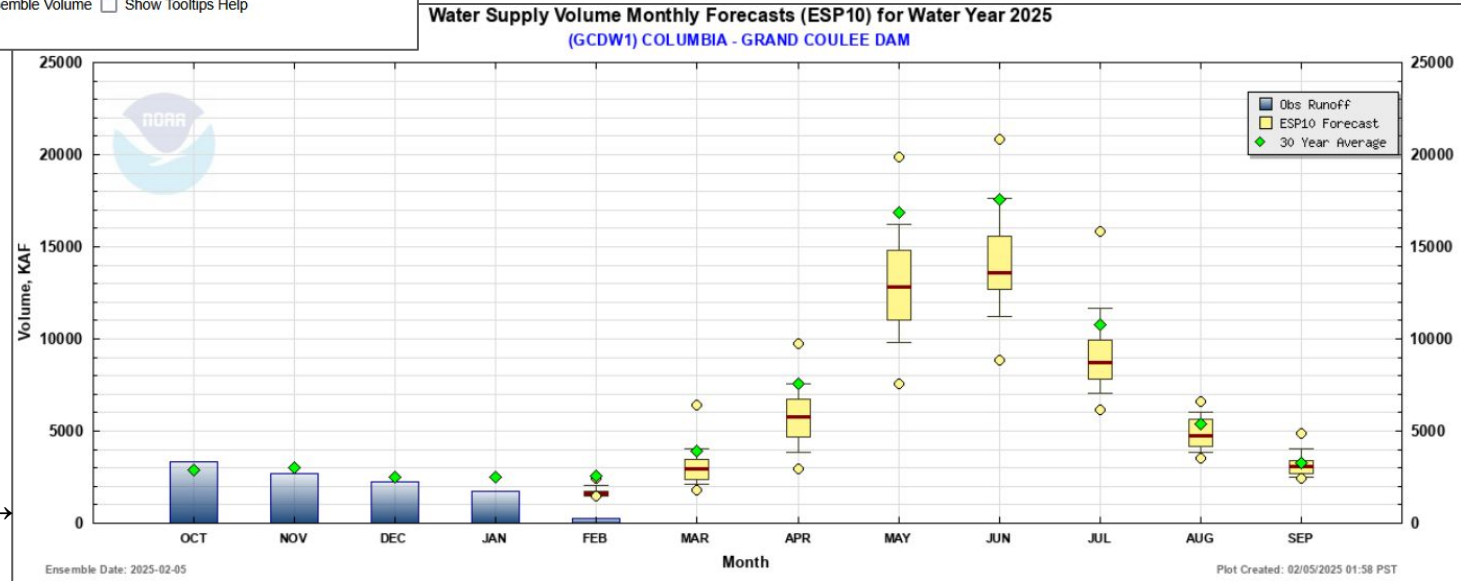
ESP with 0 Days QPF ***Ensemble:*** **2025-02-05** ***Issued:*** 2025-02-05

APR-SEP	44092	51278	83	60874	61483
APR-JUL	36680	44231	84	50417	52774
APR-AUG	41421	48356	83	56802	58186
JAN-SEP	51029	58313	83	68050	70457
JAN-JUL	43661	50115	81	57369	61749
OCT-SEP	59327	66611	84	76348	78842



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

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:*** 2025-02-05 ***Issued:*** 2025-02-05

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	17766	22512	101	26373	22232
APR-JUL	15560	19944	100	23612	19946
APR-AUG	16662	21277	101	25016	21121
JAN-SEP	24428	29338	99	34666	29736
JAN-JUL	22056	26831	98	32065	27450
OCT-SEP	28007	32916	96	38245	34287

Experimental Water Supply

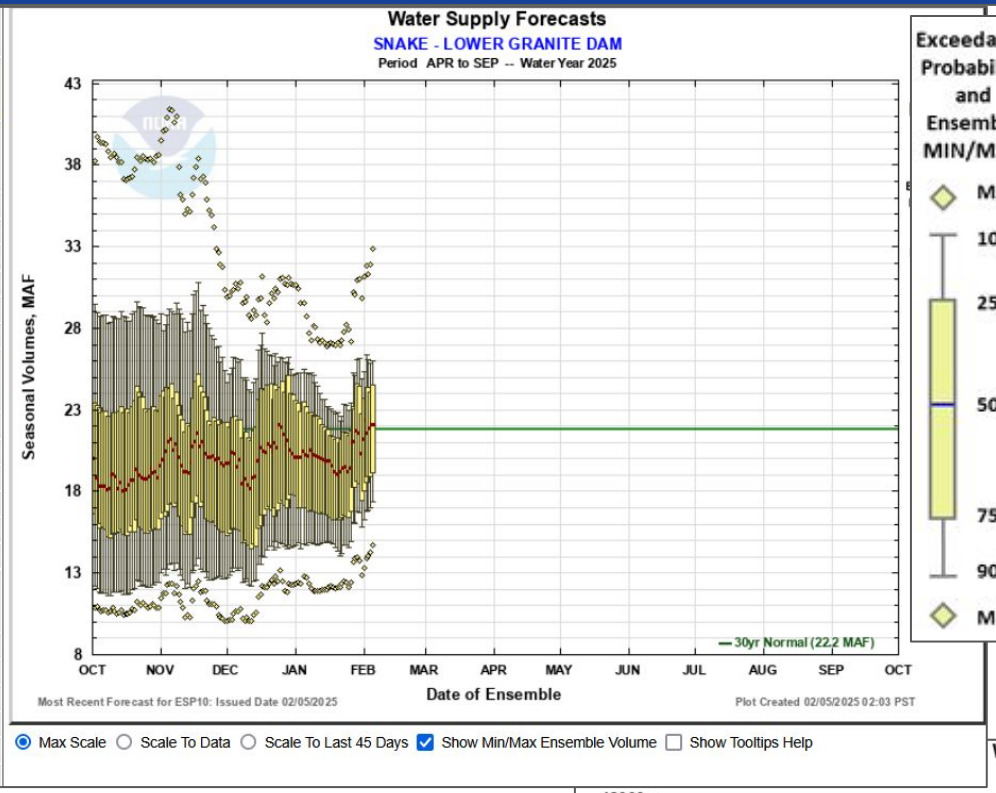
HEFS with 15 days EQPF ***Ensemble:*** 2025-02-05 ***Issued:*** 2025-02-05

APR-SEP	17271	22243	100	26260	22232
APR-JUL	15052	19726	99	23275	19946
APR-AUG	16161	21008	99	24816	21121
JAN-SEP	23126	28467	96	34288	29736
JAN-JUL	20992	25954	95	31337	27450
OCT-SEP	26704	32045	93	37867	34287

Reference

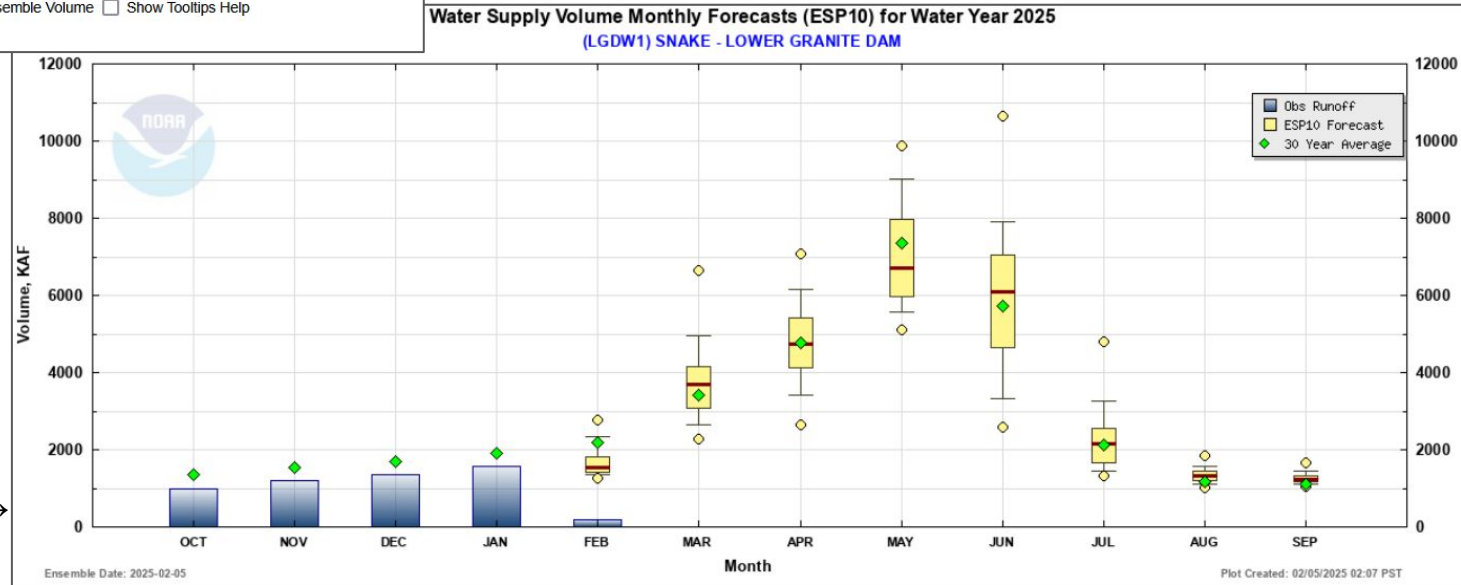
ESP with 0 Days QPF ***Ensemble:*** 2025-02-05 ***Issued:*** 2025-02-05

APR-SEP	16470	21507	97	25791	22232
APR-JUL	14295	19025	95	23063	19946
APR-AUG	15383	20323	96	24438	21121
JAN-SEP	22771	27886	94	33611	29736
JAN-JUL	20661	25456	93	30926	27450
OCT-SEP	26350	31465	92	37189	34287



↑ nwrfc.noaa.gov/water_supply/ws_forecasts.php?id=LGDW1

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:*** 2025-02-05 ***Issued:*** 2025-02-05

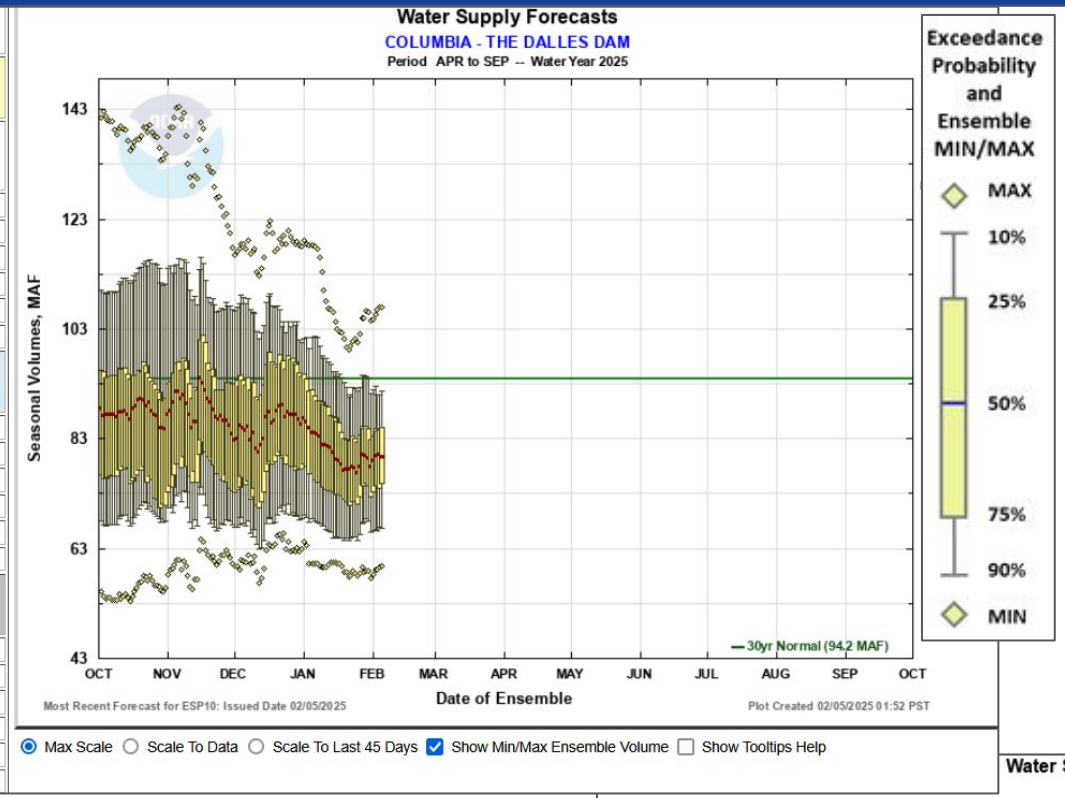
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	66799	79960	85	91932	94166
APR-JUL	56284	68323	83	79572	81933
APR-AUG	62161	75228	84	86312	89196
JAN-SEP	83201	96400	83	111804	115946
JAN-JUL	73072	84744	82	99553	103714
OCT-SEP	97276	110475	83	125879	132314

Experimental Water Supply
HEFS with 15 days EQPF ***Ensemble:*** 2025-02-05 ***Issued:*** 2025-02-05

APR-SEP	69215	81408	86	94087	94166
APR-JUL	58513	68544	84	81500	81933
APR-AUG	64669	76273	86	89040	89196
JAN-SEP	85068	98014	85	115807	115946
JAN-JUL	74551	85233	82	102857	103714
OCT-SEP	99143	112089	85	129882	132314

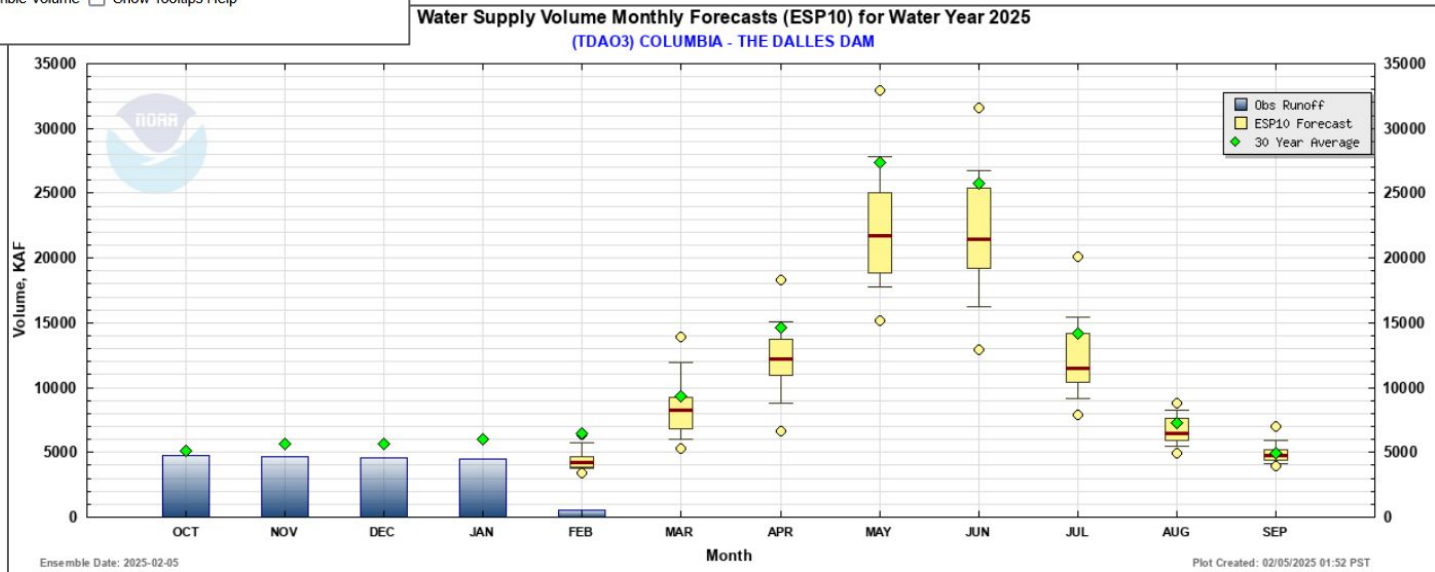
Reference
ESP with 0 Days QPF ***Ensemble:*** 2025-02-05 ***Issued:*** 2025-02-05

APR-SEP	67939	80447	85	95812	94166
APR-JUL	57180	68770	84	81523	81933
APR-AUG	63289	75721	85	89681	89196
JAN-SEP	87019	97301	84	116685	115946
JAN-JUL	75834	85796	83	102985	103714
OCT-SEP	101094	111376	84	130760	132314

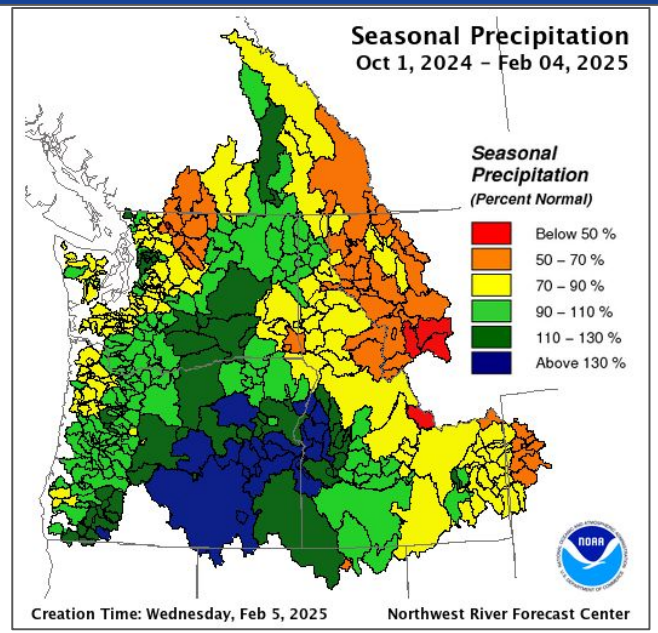


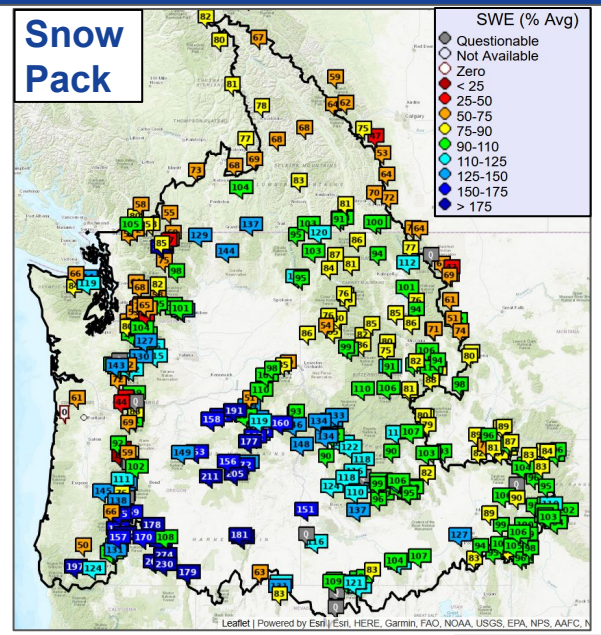
↑ nwrfc.noaa.gov/water_supply/ws_forecasts.php?id=TDAO3

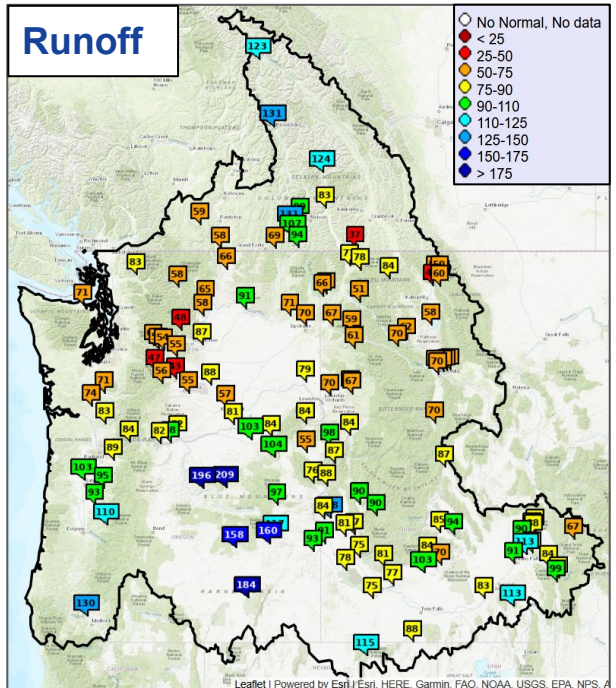
nwrfc.noaa.gov/water_supply/monthly/monthly_forecasts.php?id=TDAO3 →

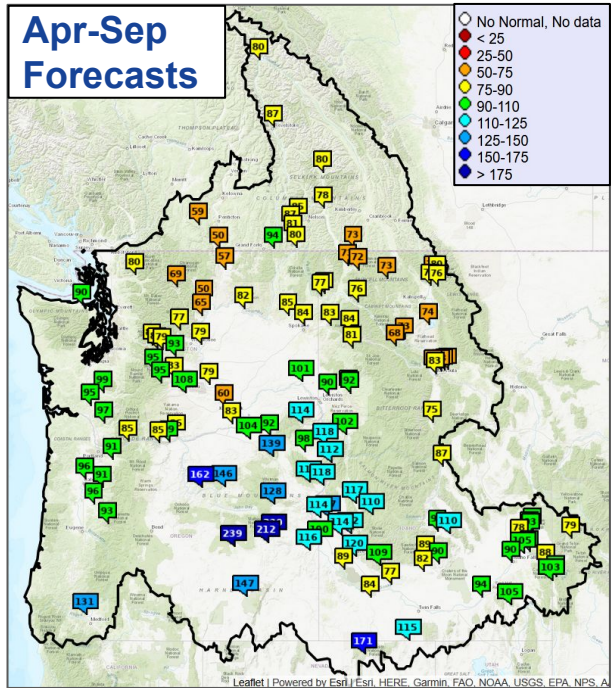


Precipitation, Snow Pack, Runoff and Water Supply Forecasts









Key Takeaways

- A dry but cool January dampened observed river runoff basinwide, but was followed by a wet start for February.
- Snowpack remained steady in Canadian portion of the Columbia, but showed some accumulation most noticeable in the south.
- Observed runoff remains a mix of above and below normal conditions.
- Water supply forecasts also shows a mix of conditions, but a clearer geographic distinction between the northern and southern portion of the domain.

Northwest River Forecast Center News

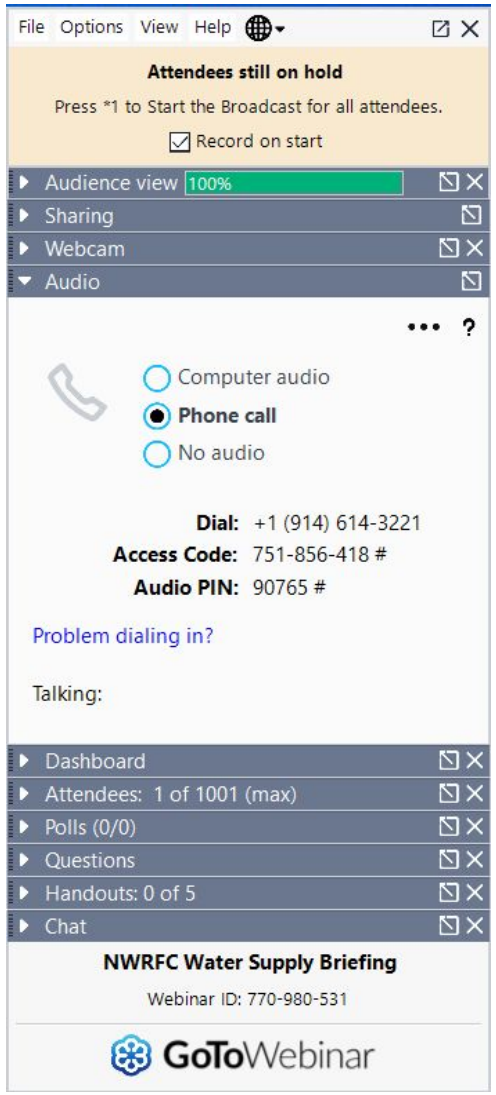
Monthly Water Supply Briefings First Thursday of Each Month

nwrfc.noaa.gov/water_supply/ws_schd.cgi

Mar	Apr	May	Jun
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

Questions?



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

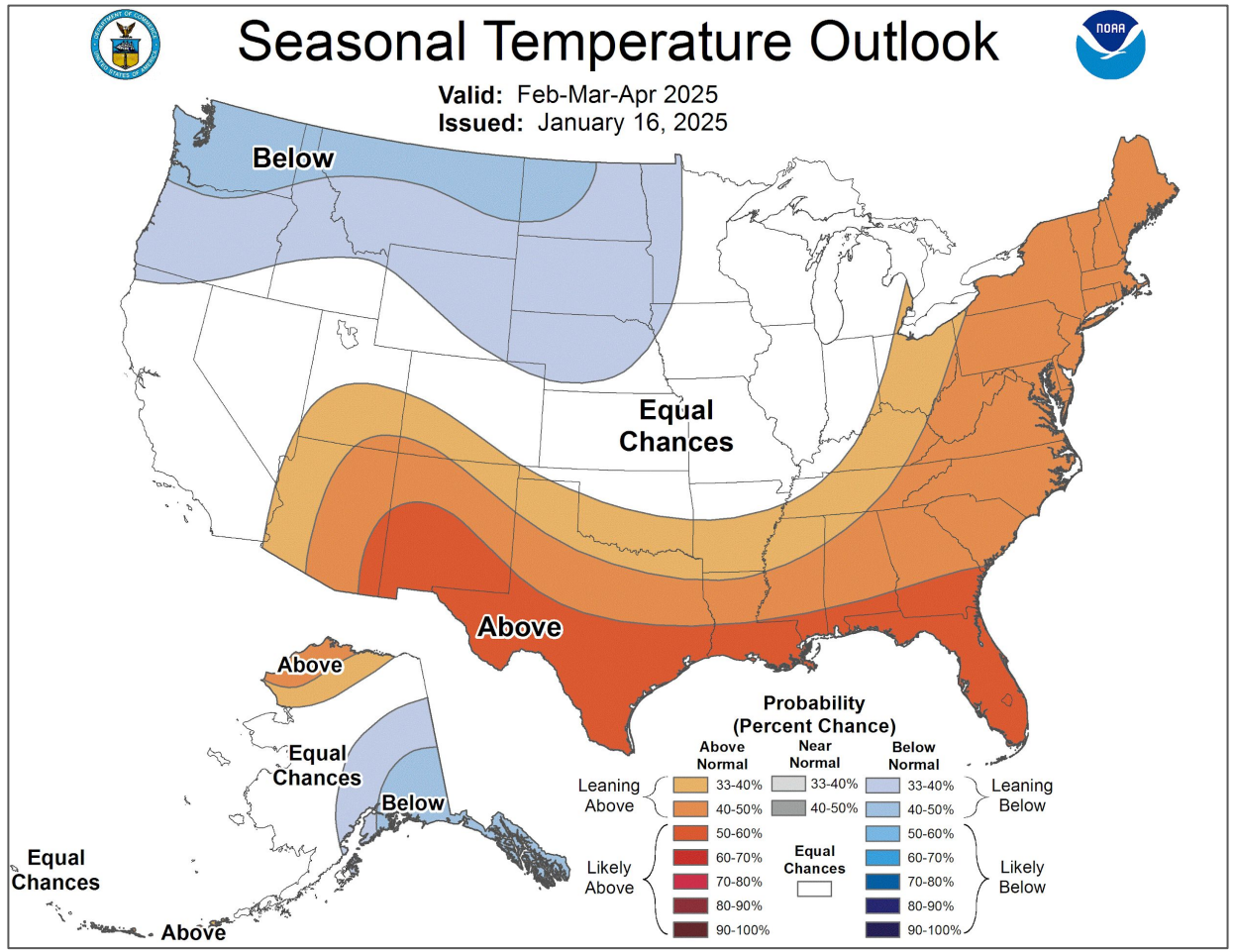
To ask a question using your phone, enter the AUDIO PIN followed by the # sign.

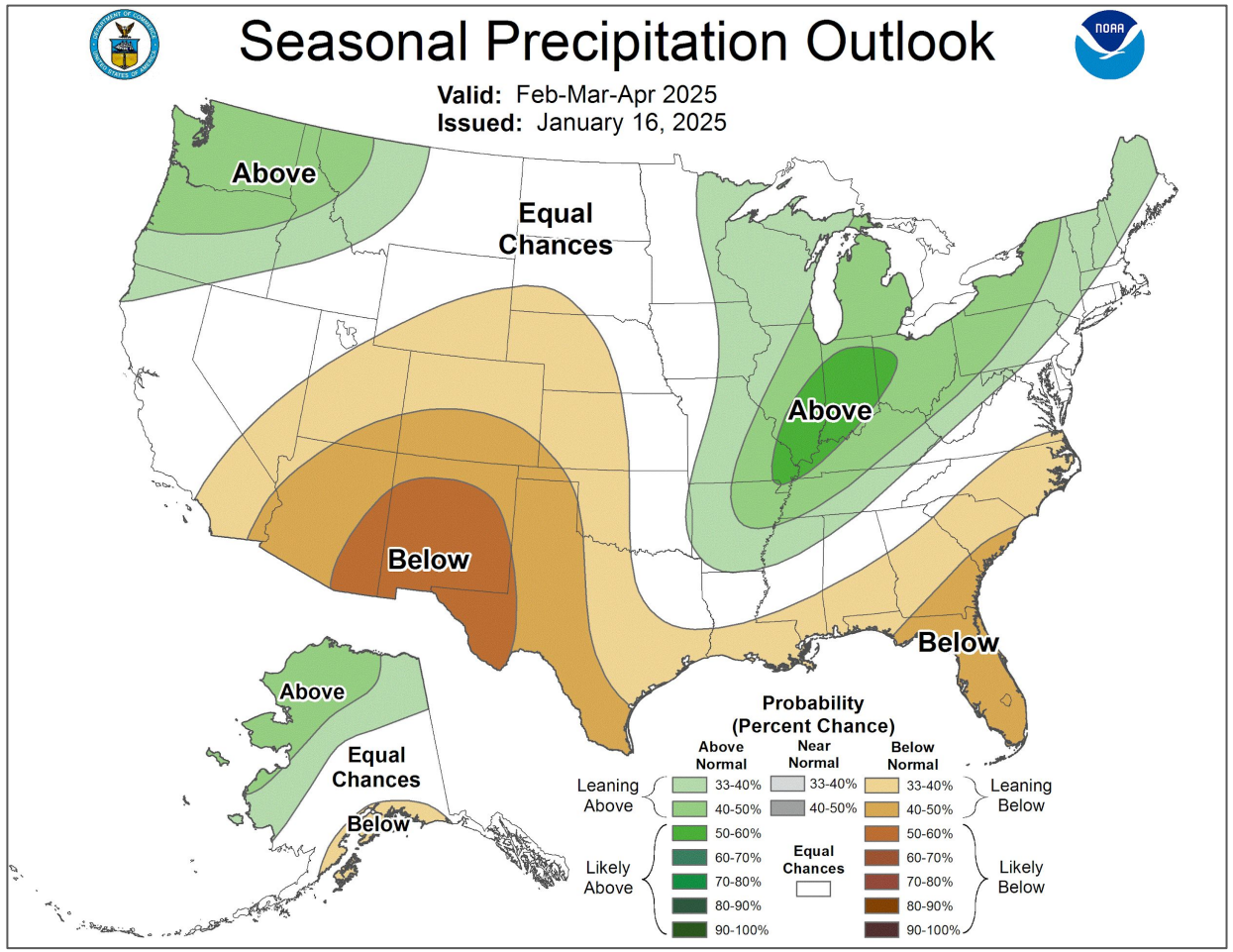
The AUDIO PIN was provided when you logged into the webinar. If you need to enter the PIN after you are connected, try #PIN#.

Extra Slides

nwrfc.watersupply@noaa.gov (503) 326-7291 nwrfc.noaa.gov

Climate Prediction Center Seasonal Outlook





cpc.ncep.noaa.gov

ENSO predictions

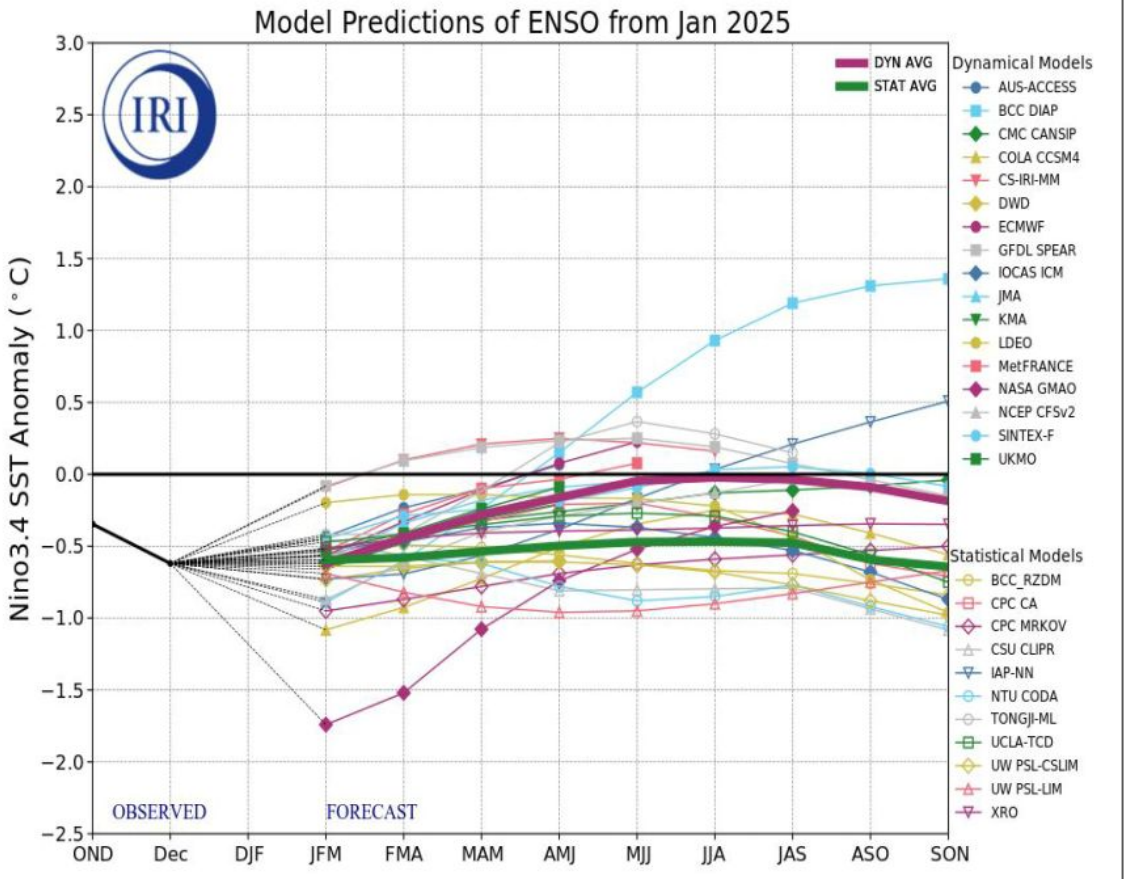
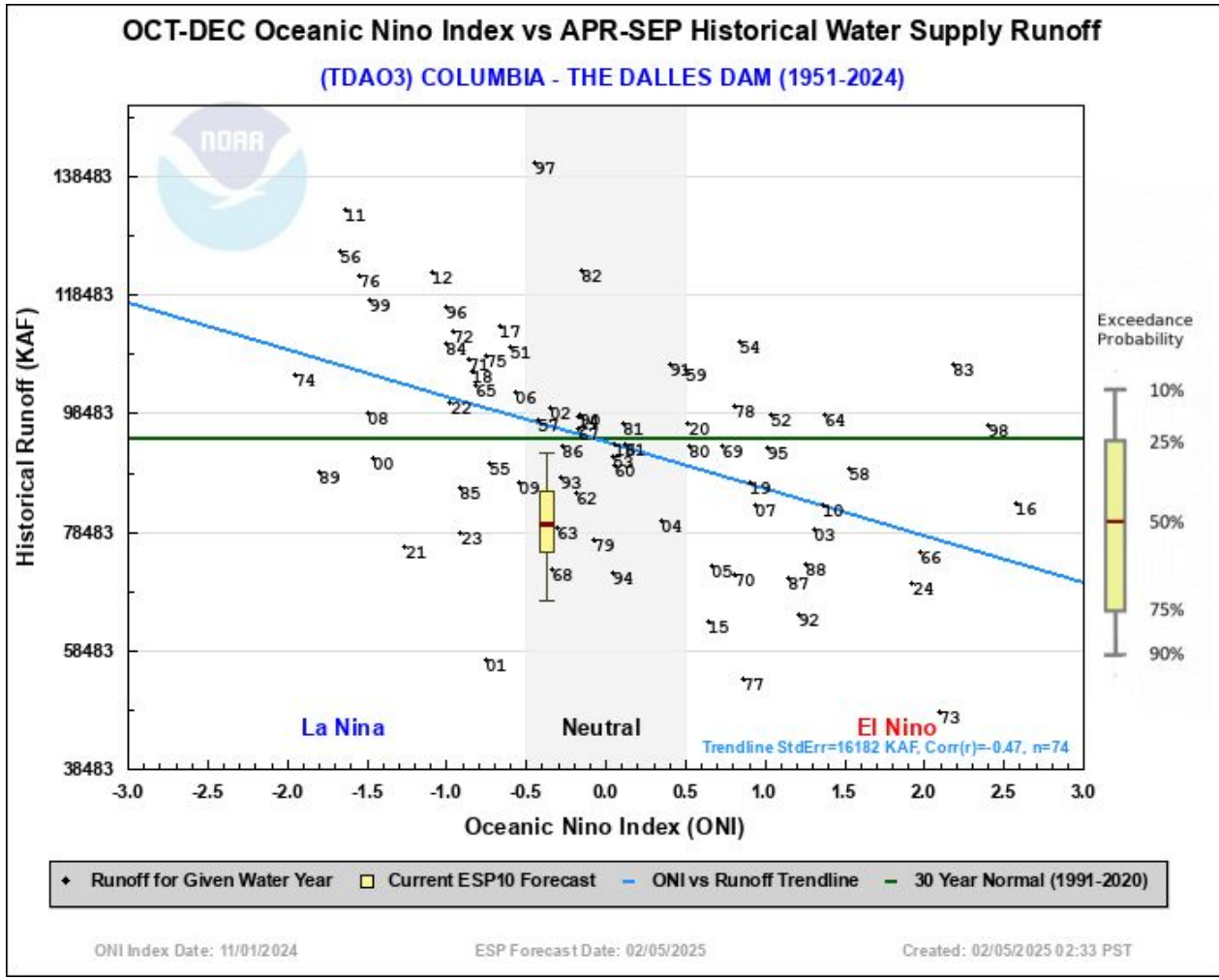


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 21 January 2025).



cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf