



Northwest River Forecast Center



May 2023 Water Supply Briefing

Telephone Conference: (213) 929-4212
Audio Access Code: 949-968-637#

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*Audio PIN is provided when logging into the webinar and is required if you wish to ask questions at the end of presentation



Take Home Messages

Precipitation has been below normal and temperatures have been colder than normal this water year.

Despite below precipitation total, and due to colder temperatures, snowpack is near to above normal.

Recent warm weather is responsible for onset of snowmelt.

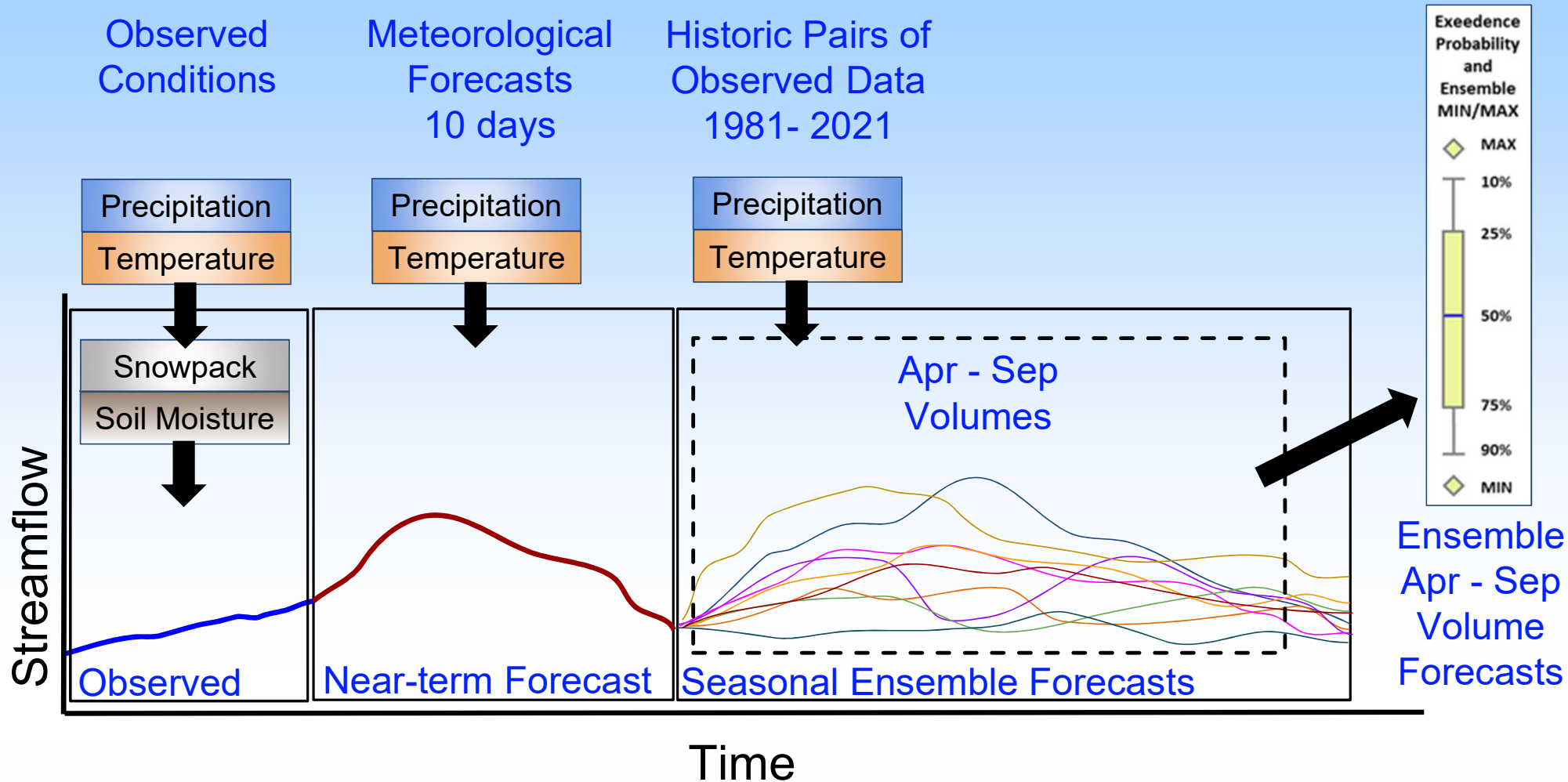
Water year adjusted runoff to date remains below normal. Runoff volumes as a percent of normal should increase throughout May due to snowmelt.

April-September volume forecasts for large tributaries to the Columbia River System are below normal, but smaller subbasins are a mix of above/below.

The Snake River forecasted contribution to annual volumes for the Columbia River System is projected to be above normal. Other large tributary contributions are projected to be near normal.

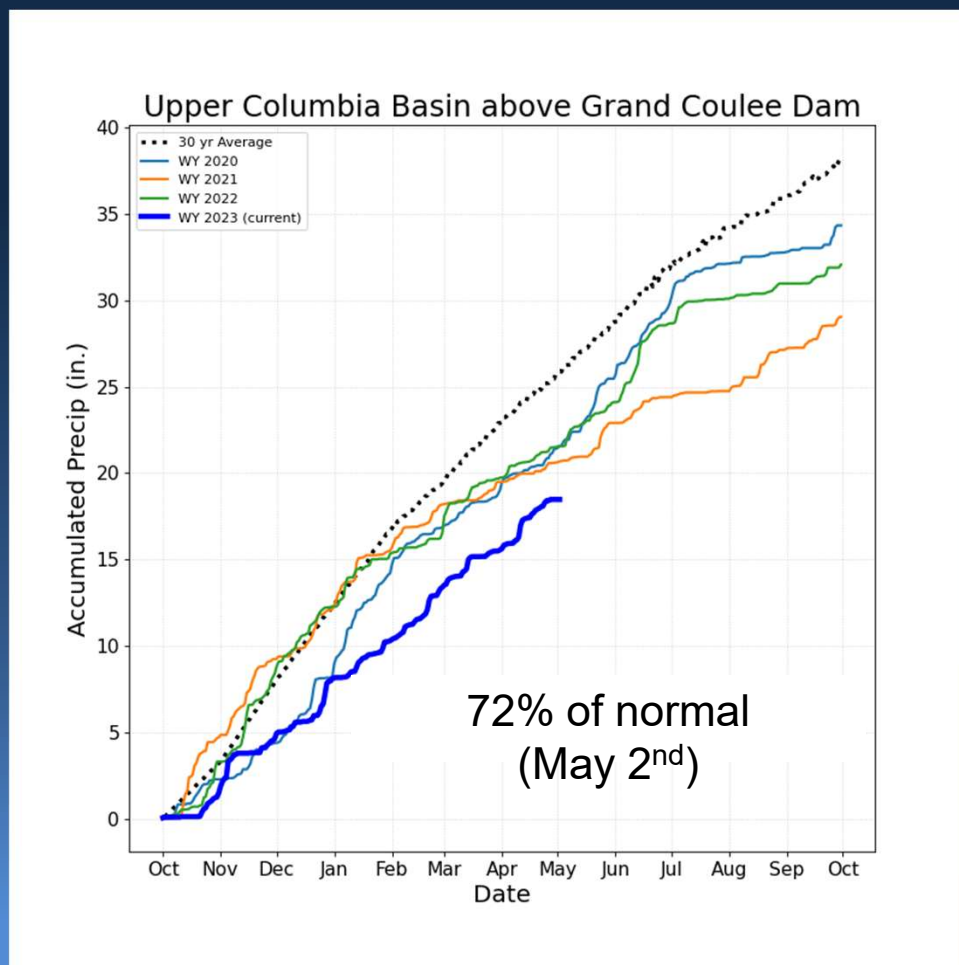
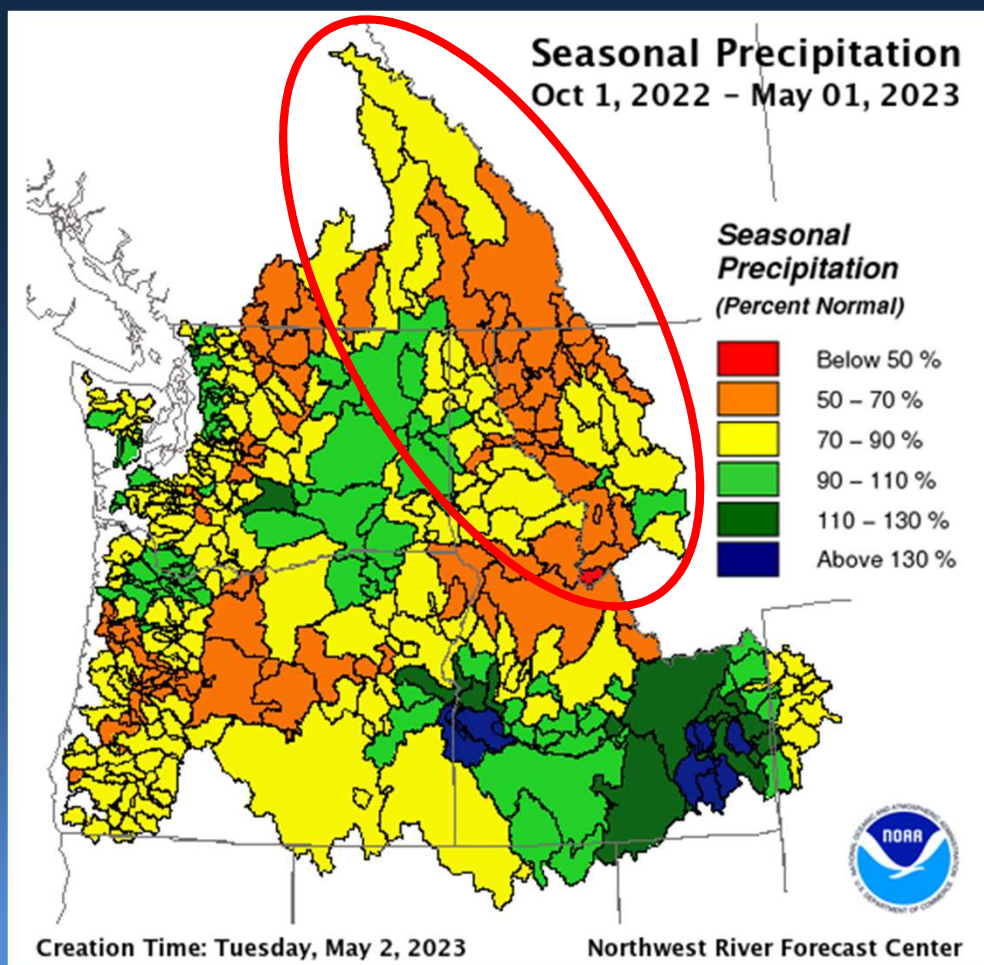


NWRFC Forecast Technique





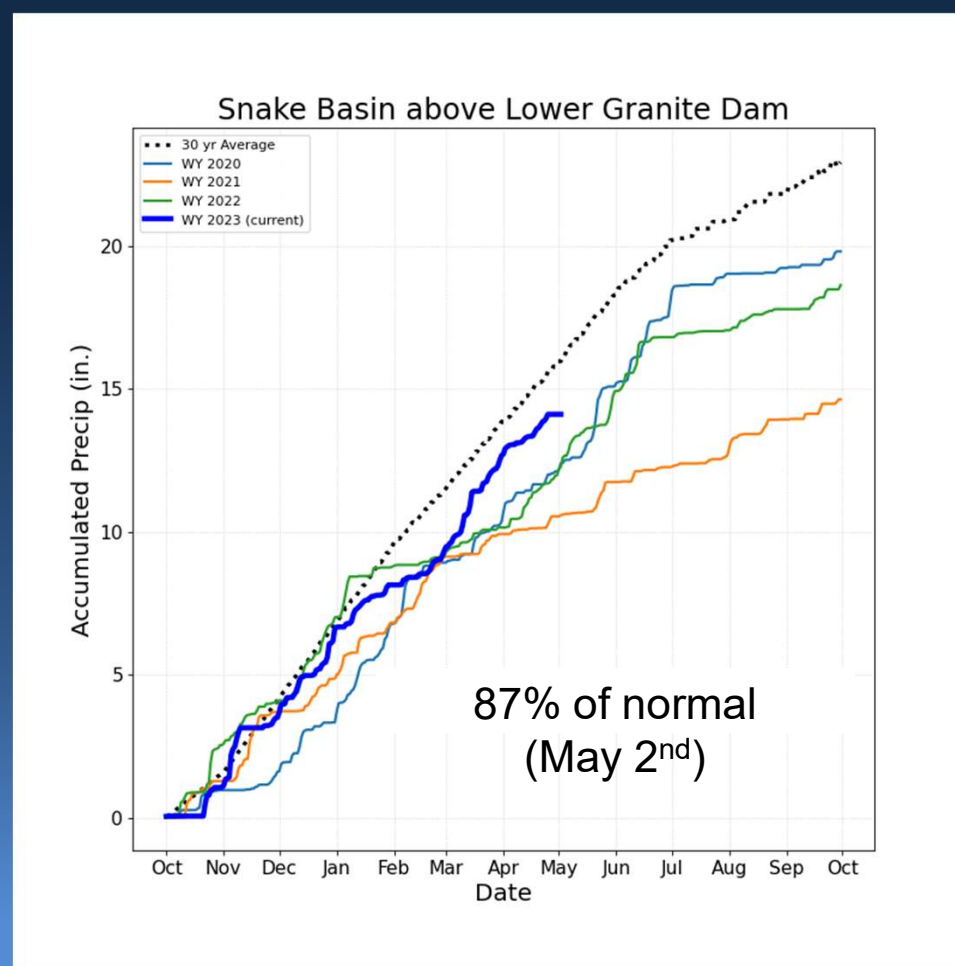
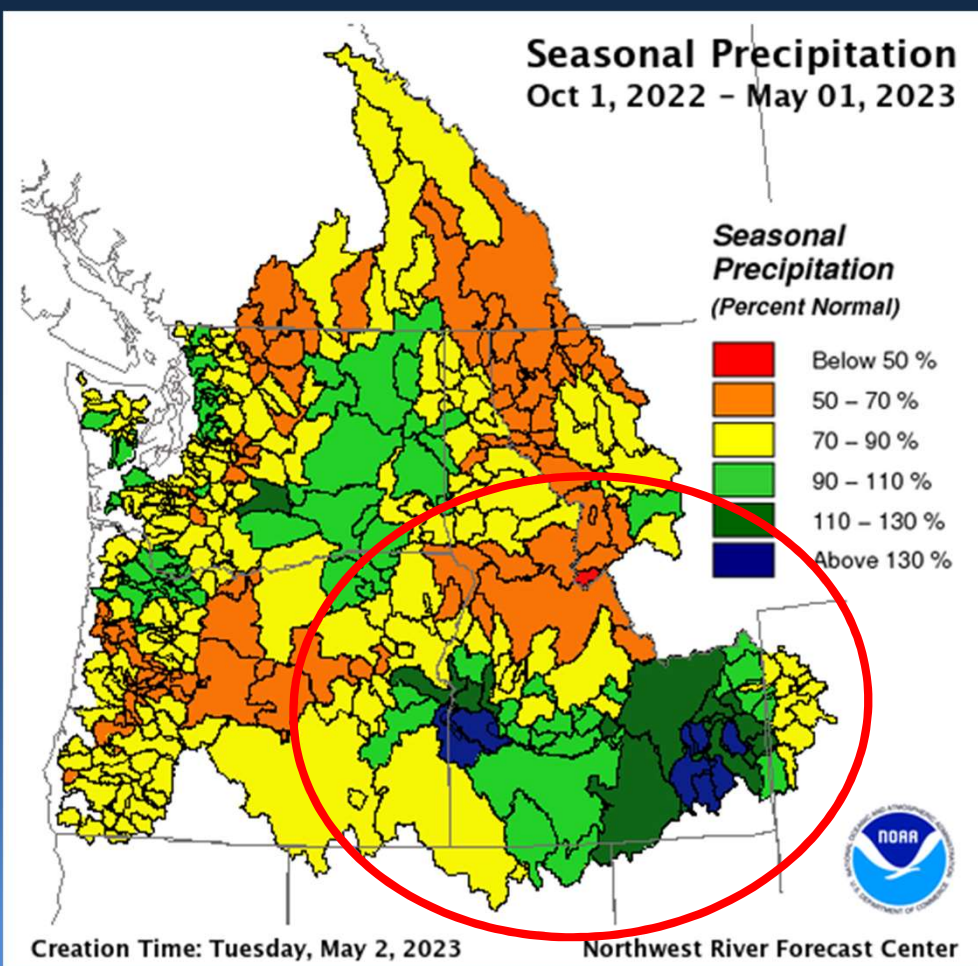
Water Year Precipitation



Precipitation averages from PRISM OSU and PCIC.



Water Year Precipitation



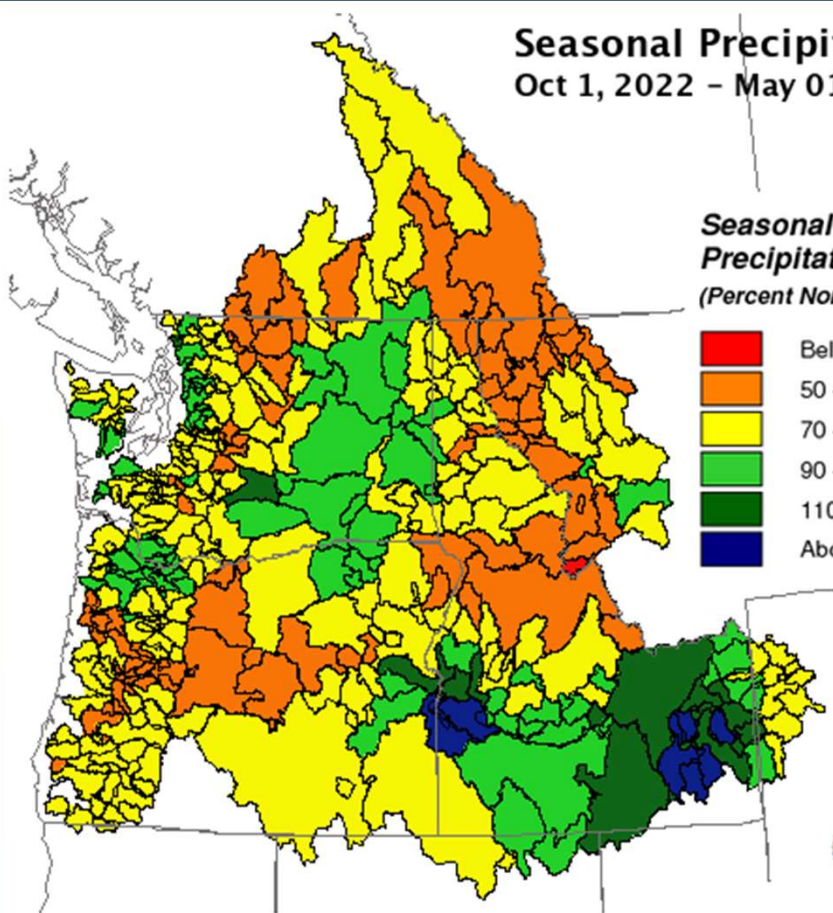
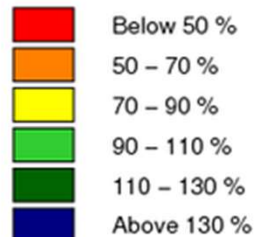
Precipitation averages from PRISM OSU and PCIC.



Water Year Precipitation

Seasonal Precipitation Oct 1, 2022 - May 01, 2023

Seasonal Precipitation (Percent Normal)

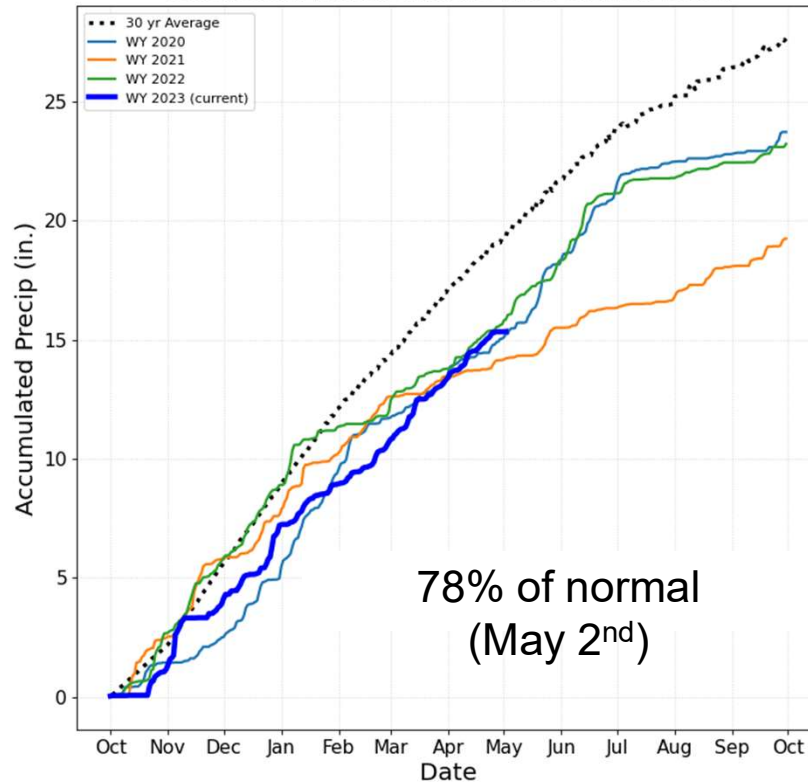


Creation Time: Tuesday, May 2, 2023

Northwest River Forecast Center



Columbia Basin above The Dalles Dam

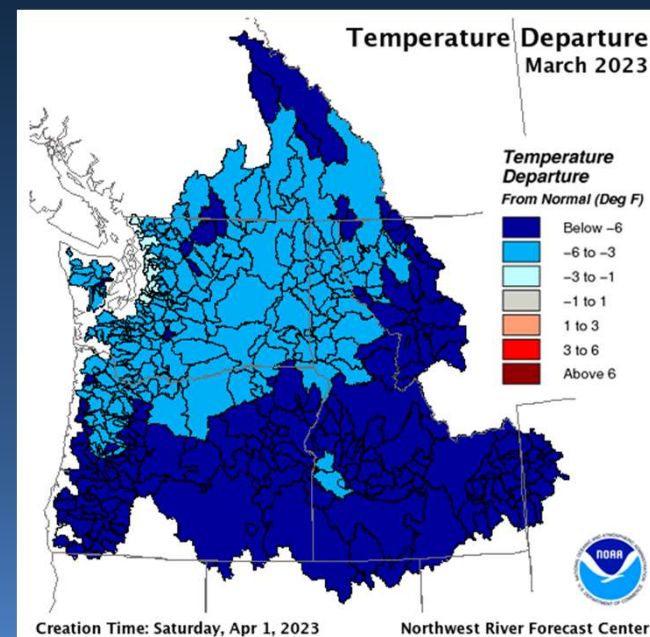
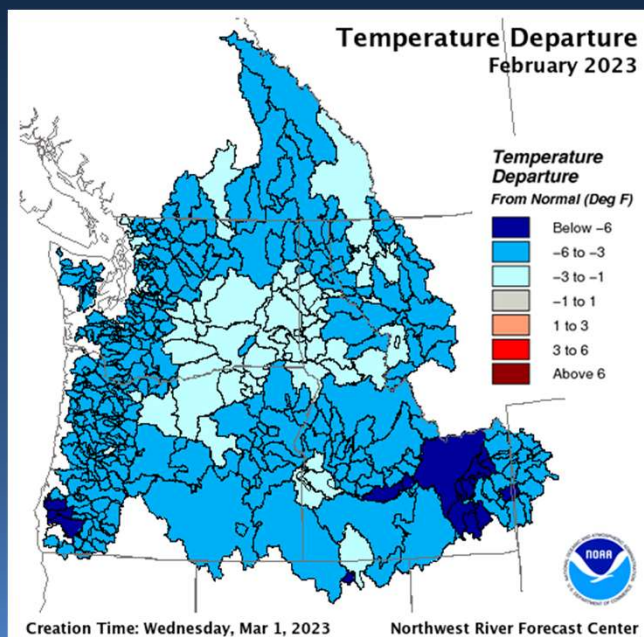
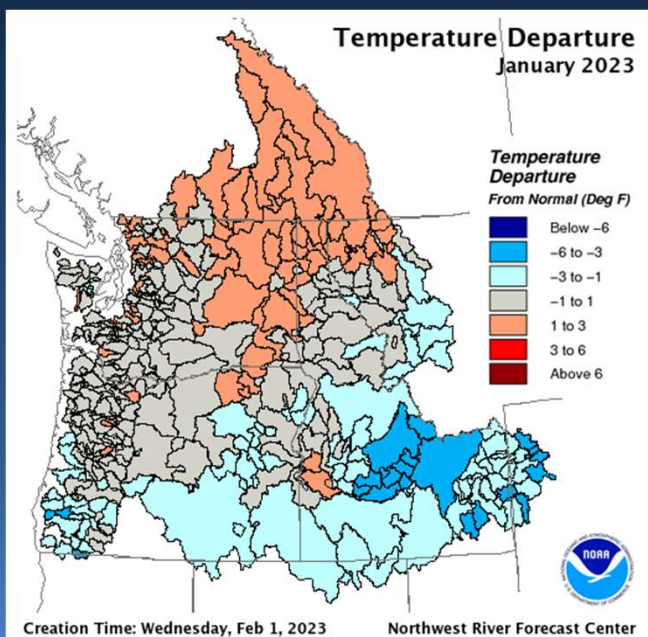


78% of normal
(May 2nd)

Precipitation averages from PRISM OSU and PCIC.

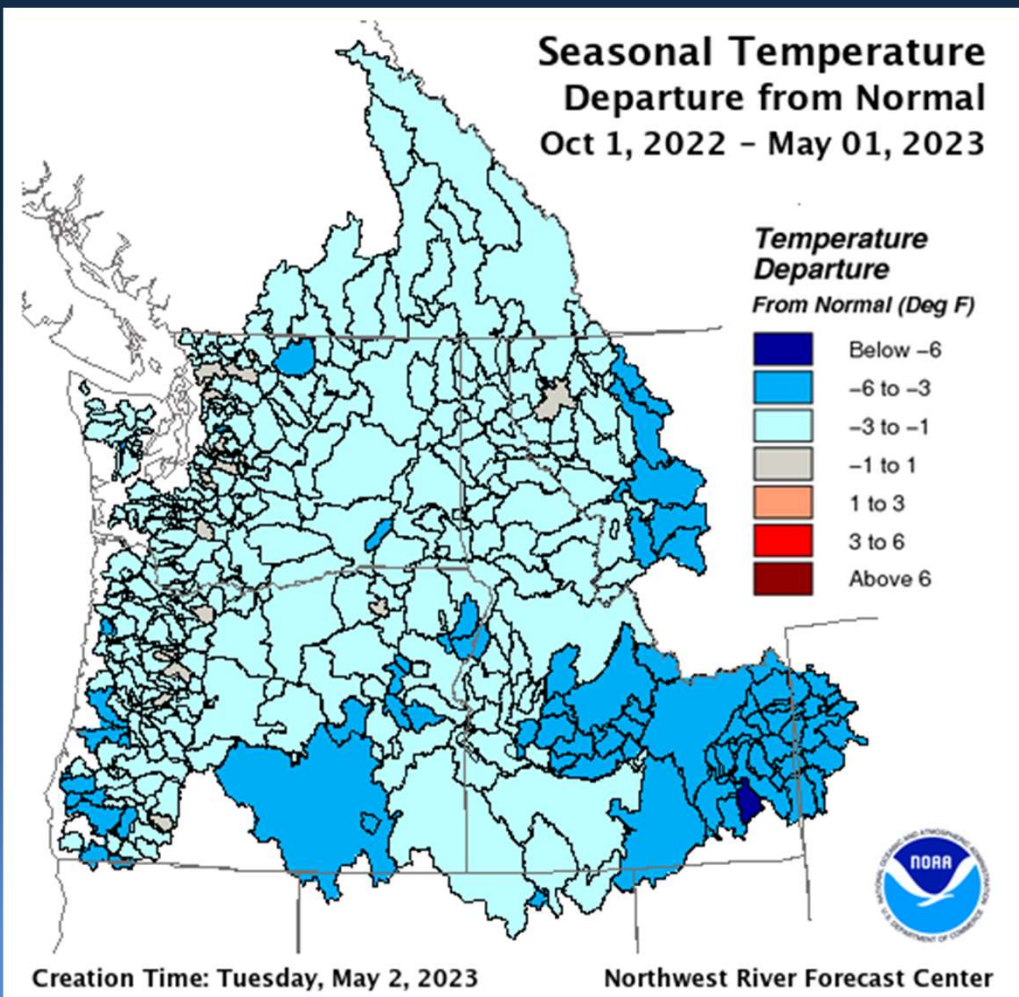
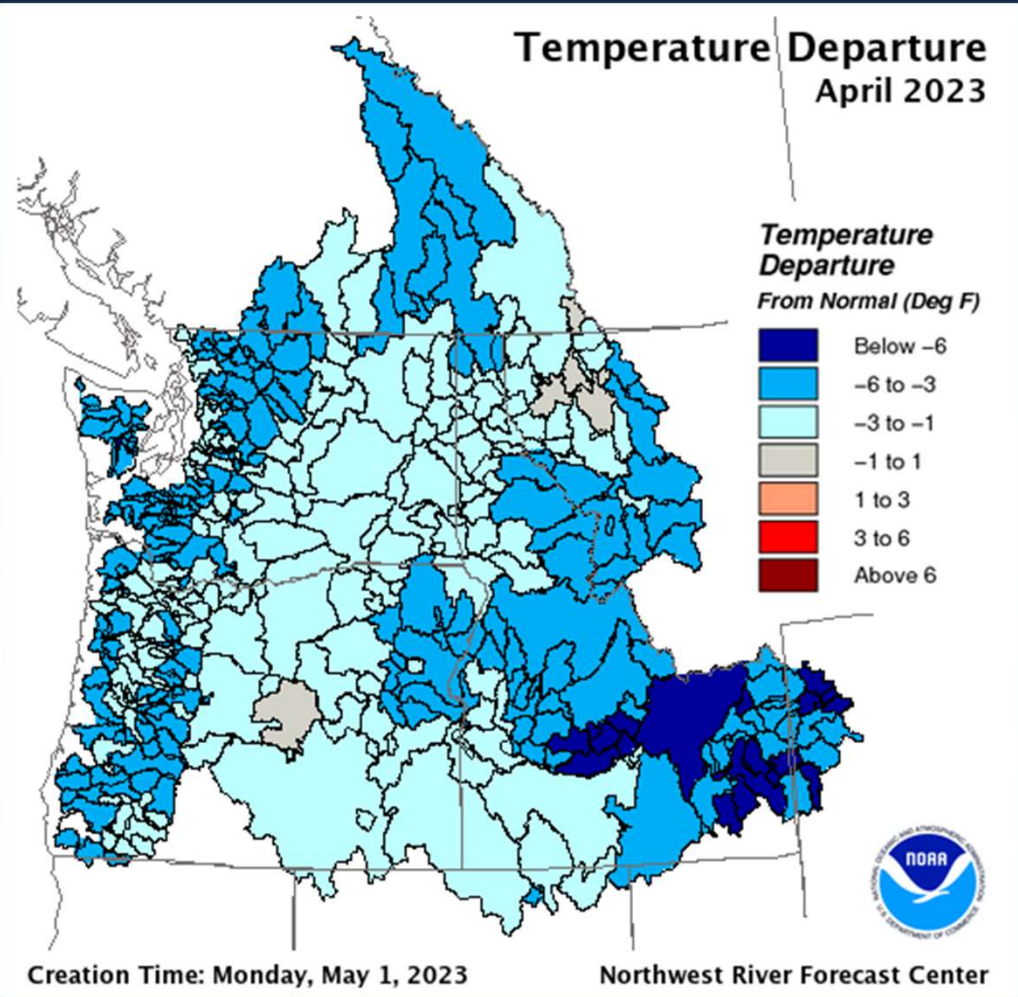


Temperature - January to March





Temperature – April and Water Year to Date

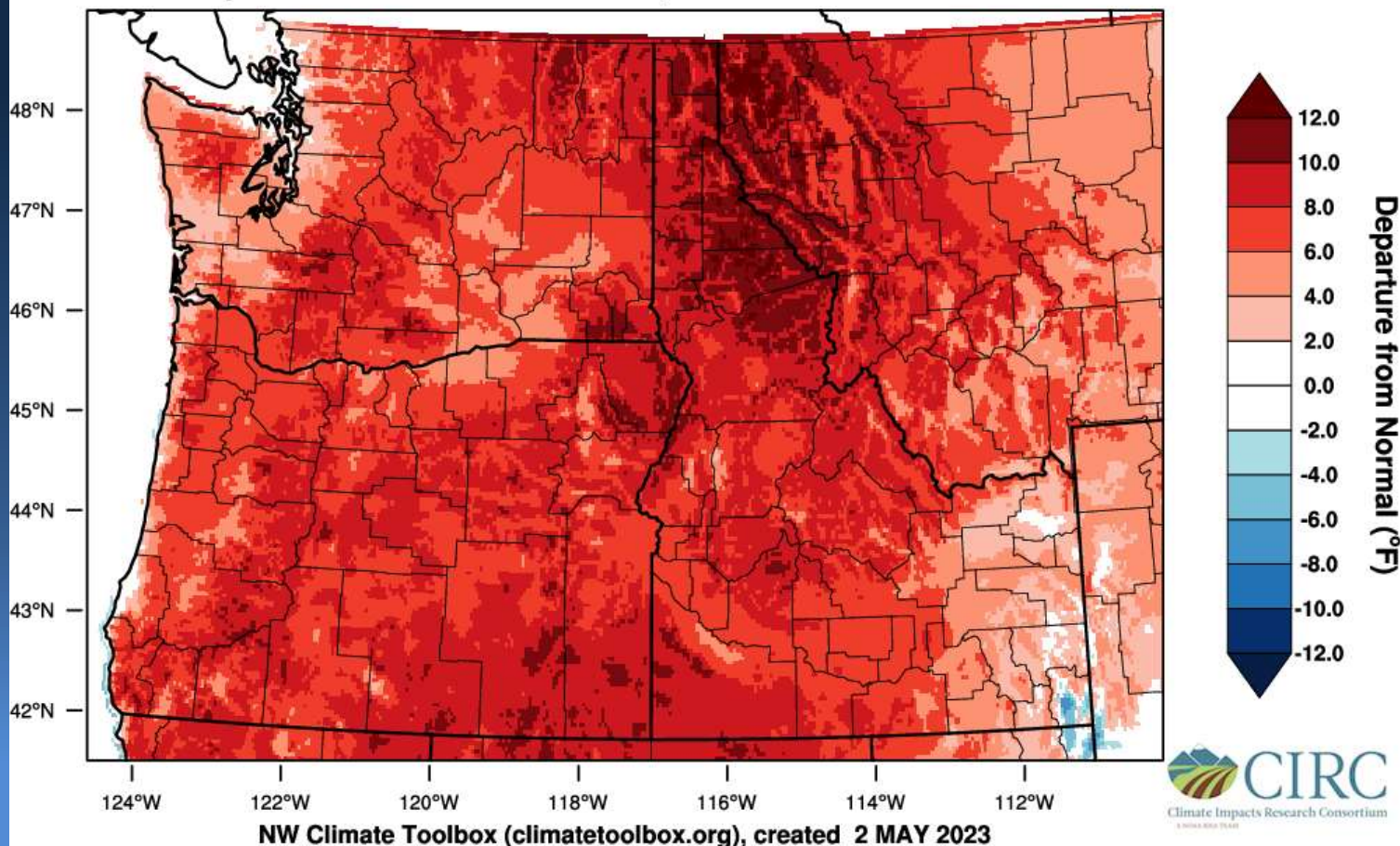




Temperature –Recent Observations

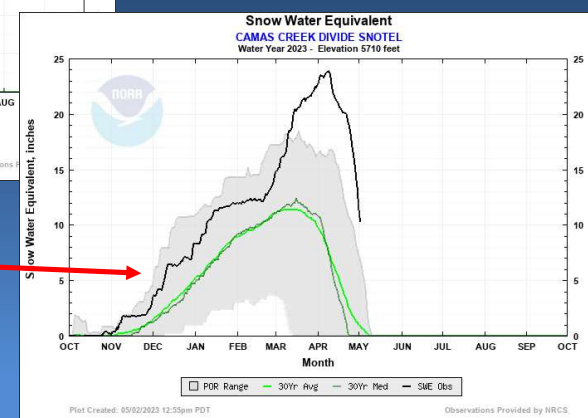
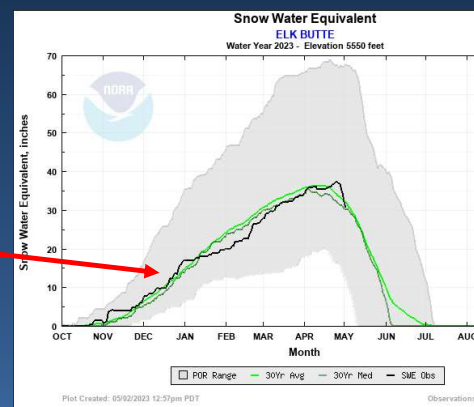
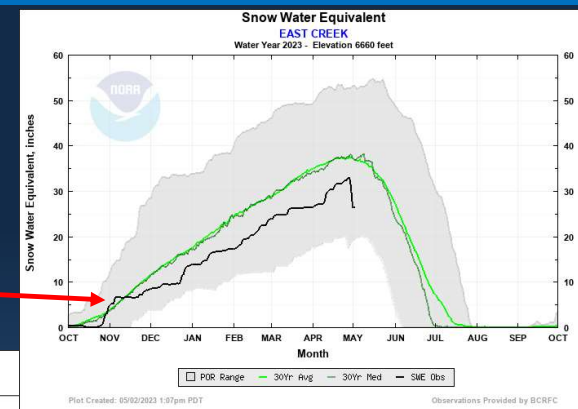
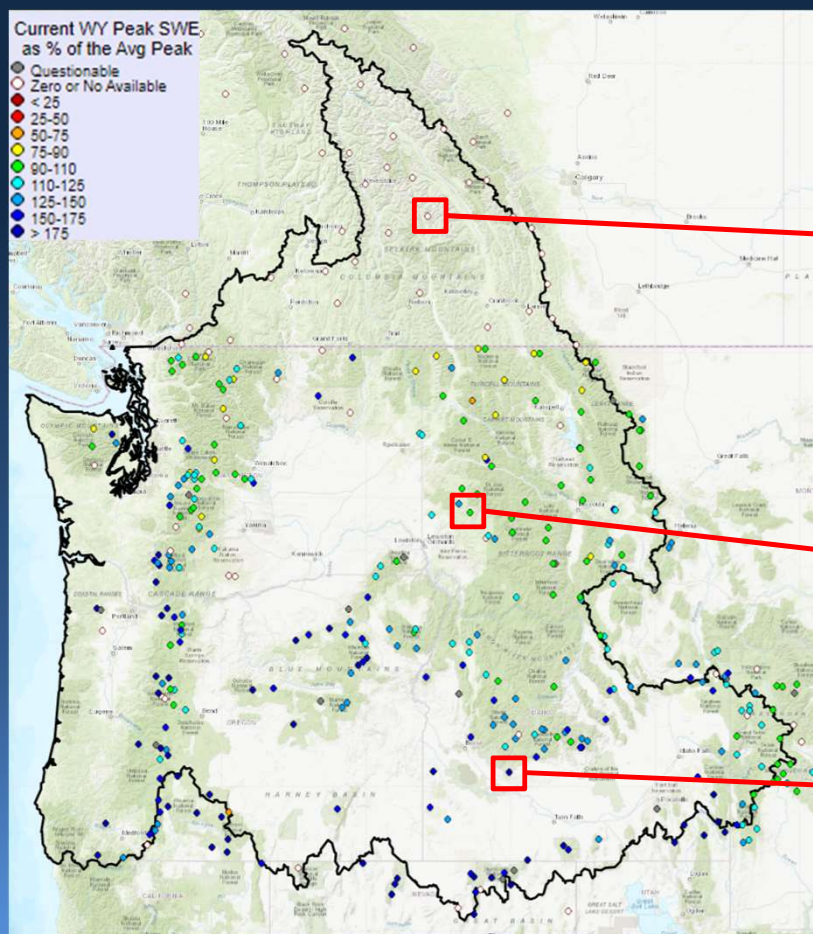
Average Temperature, Last 7 days, 04/25/23 to 05/01/23

Departure from 1991-2020 Normal, Northwestern United States





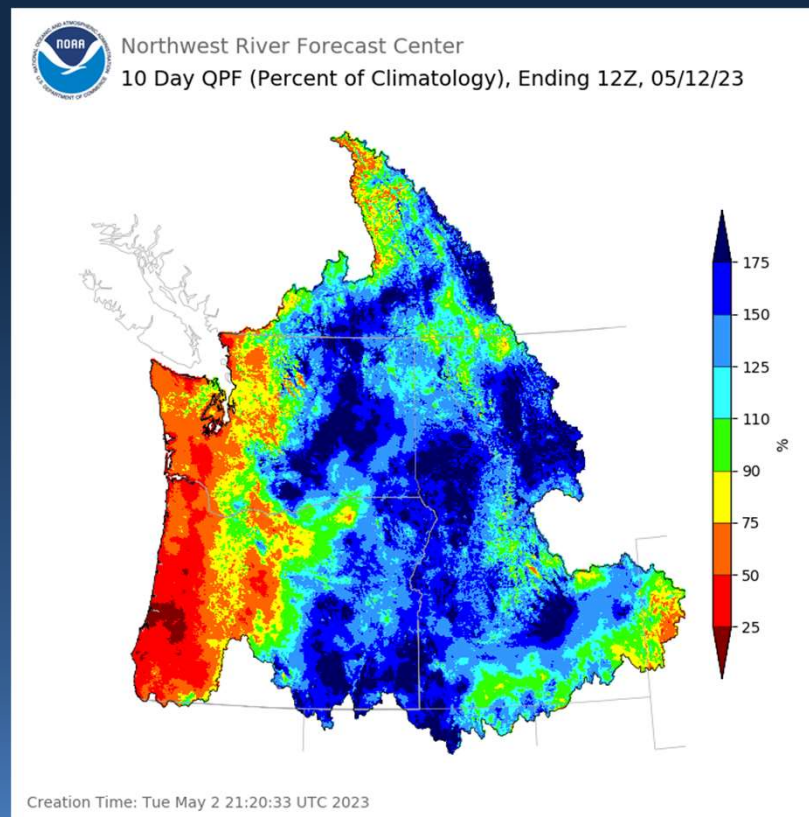
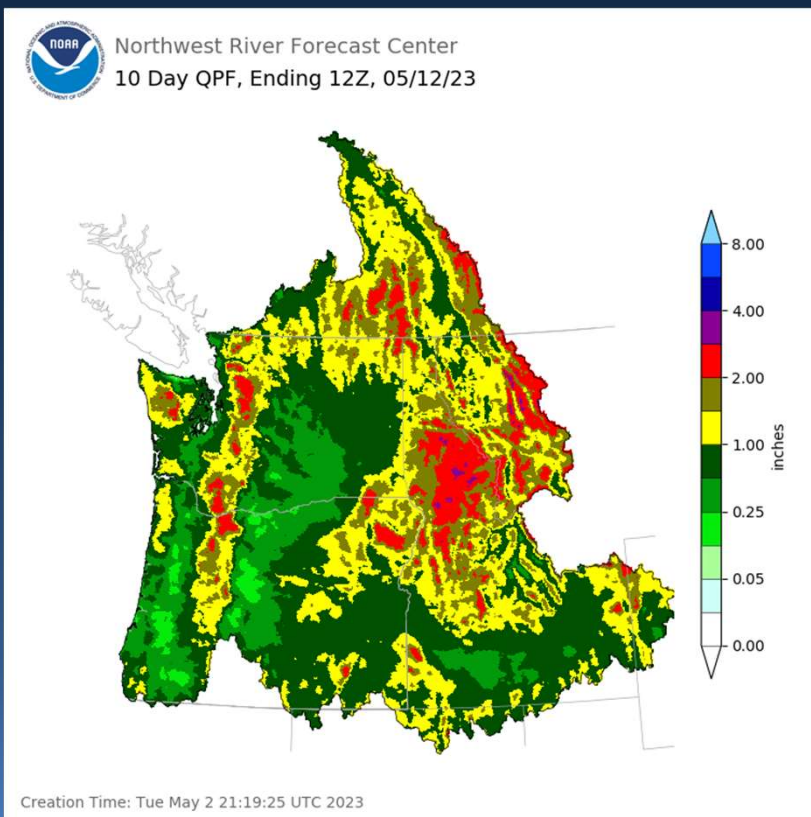
Snowpack – SWE Peak Percent of Normal



Snow data from Natural Resources Conservation Service, BC Hydro, and Alberta Environment and Parks.



10 Day Precipitation Forecast

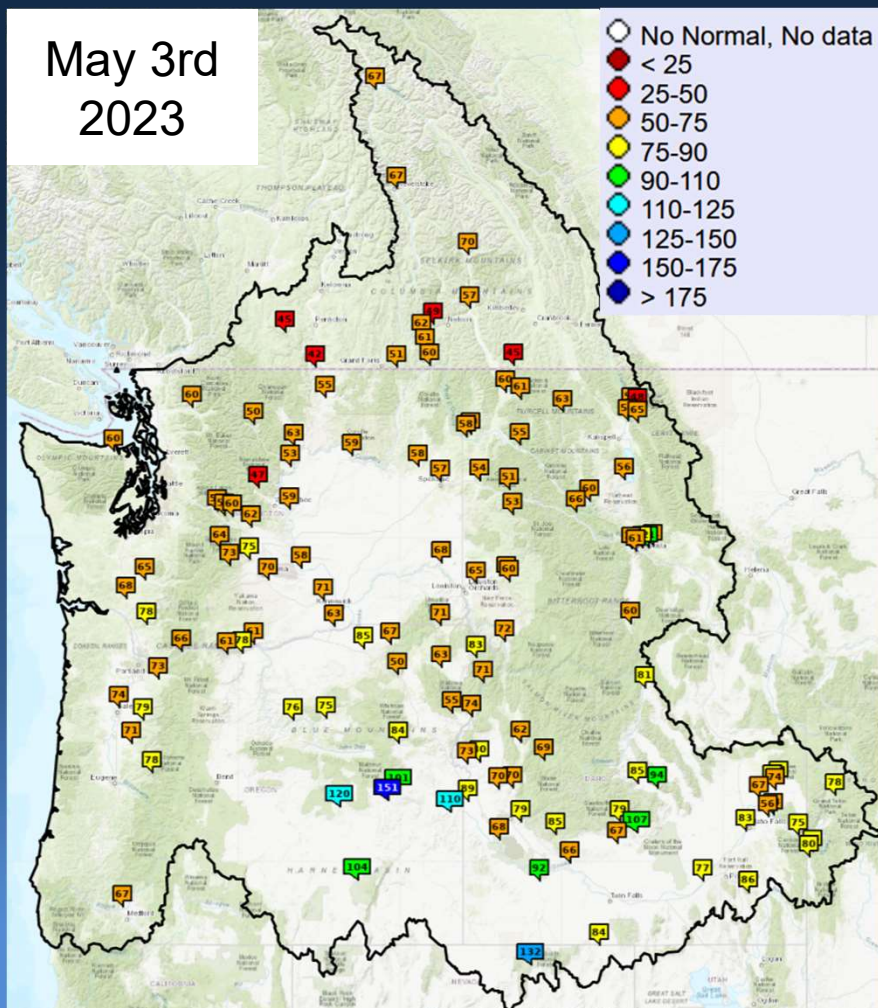
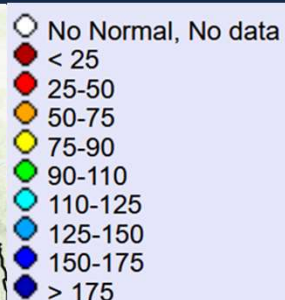


Quantitative Precipitation Forecast (QPF) Sources:
Days 1 - 2 NWS Weather Forecast Offices (WFO) in the US, WPC in BC
Days 3 - 7 NWS Weather Prediction Center (WPC)
Days 8 - 10 NWS National Blend of Models (NBM)



Water Year to Date Adjusted Runoff

May 3rd
2023



% Normal Runoff Oct 1- May 3rd

Upper Columbia Basin

Δ since April 5

Mica	67	-4
Duncan	70	-8
Queens Bay	57	4
Libby	63	-1
Hungry Horse	65	11
Grand Coulee	59	4

Snake River Basin

American Falls	77	-1
Lucky Peak	79	19
Dworshak	57	9
Lower Granite	68	6

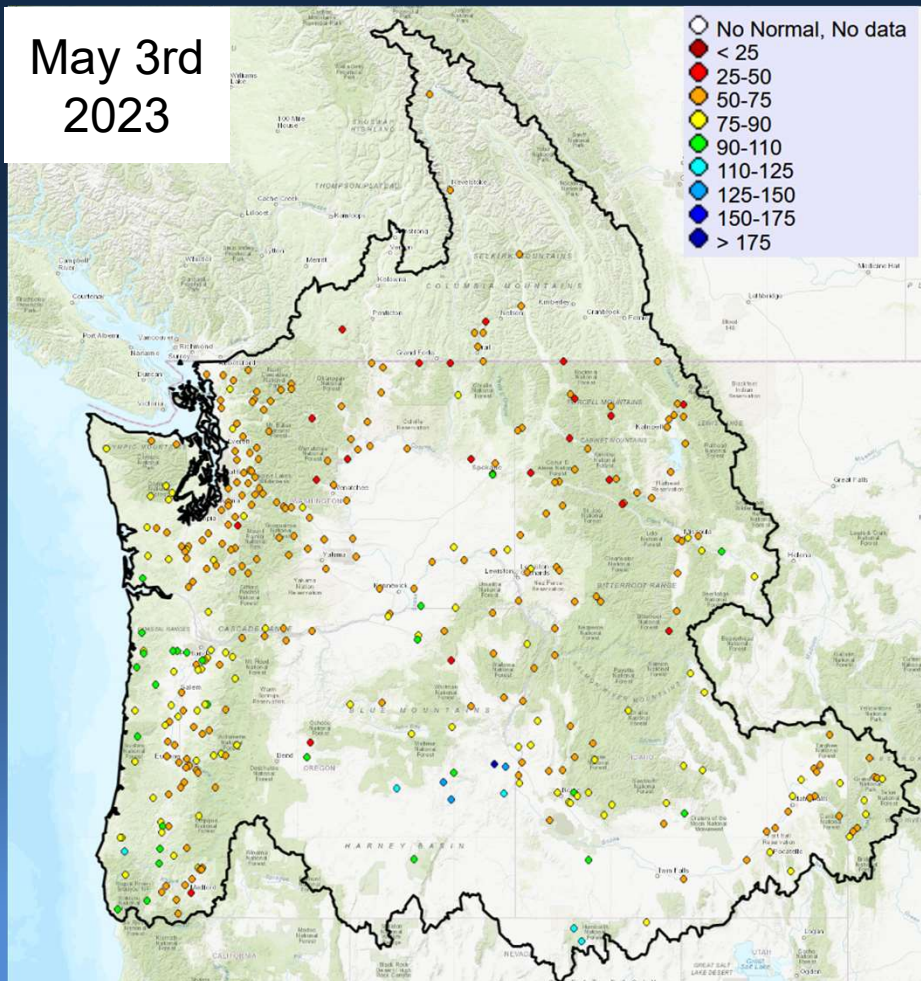
Lower Columbia Basin

The Dalles	61	5
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Water Year to Date Adjusted Runoff

May 3rd
2023



% Normal Runoff Oct 1- May 3rd

Washington

		<u>Δ since April 5</u>
Skagit nr Mt Vernon	63	3
Dungeness nr Sequim	59	1
Chehalis at Porter	71	7
Okanogan at Malott	57	-5
Methow nr Pateros	62	5
Yakima at Parker	69	8
Walla Walla nr Touchet	90	4

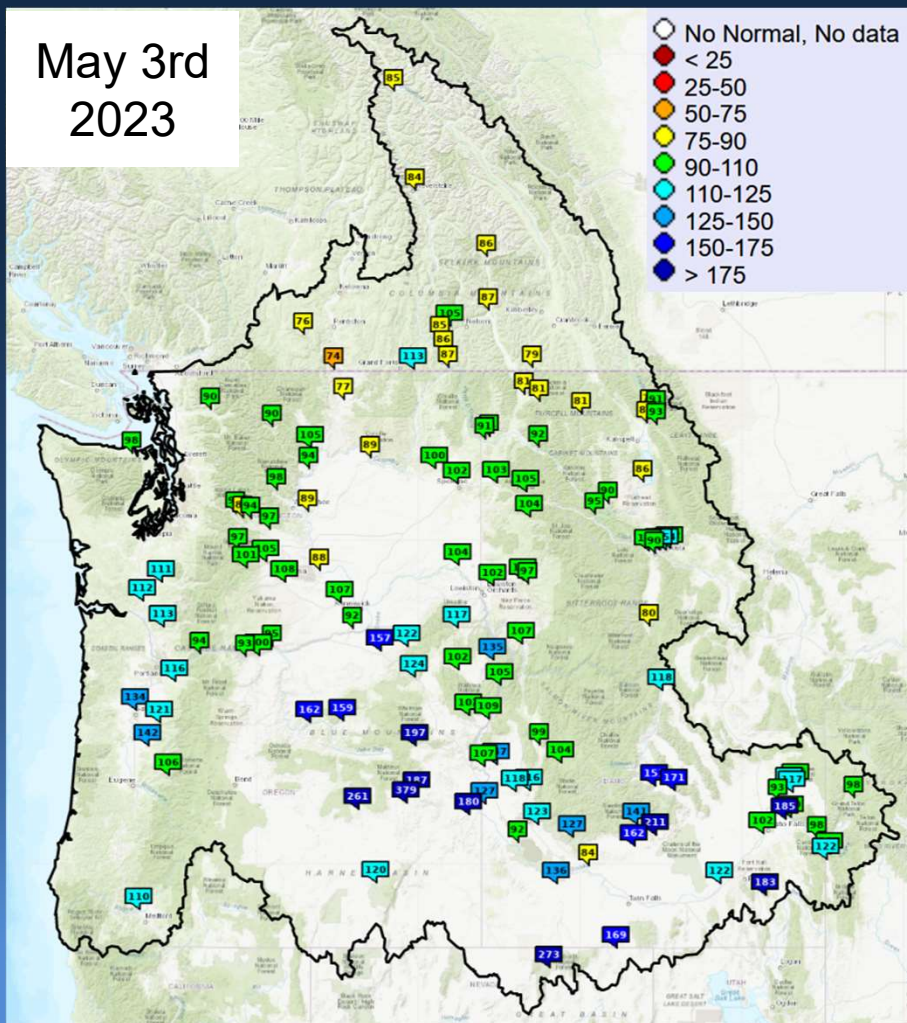
Oregon

Willamette at Salem	68	12
Rogue at Raygold	67	8
Umatilla at Pendleton	84	23
Grande Ronde at Troy	70	15
Crooked nr Prineville	98	71
Owyhee Dam	115	48



Water Supply Forecasts

May 3rd
2023



% Normal Apr-Sep Volume

Upper Columbia Basin

Δ since April 5th

Mica	85	6
Duncan	86	-1
Queens Bay	87	7
Libby	81	0
Hungry Horse	93	8
Grand Coulee	89	4

Snake River Basin

American Falls	122	4
Lucky Peak	123	7
Dworshak	105	4
Lower Granite	104	10

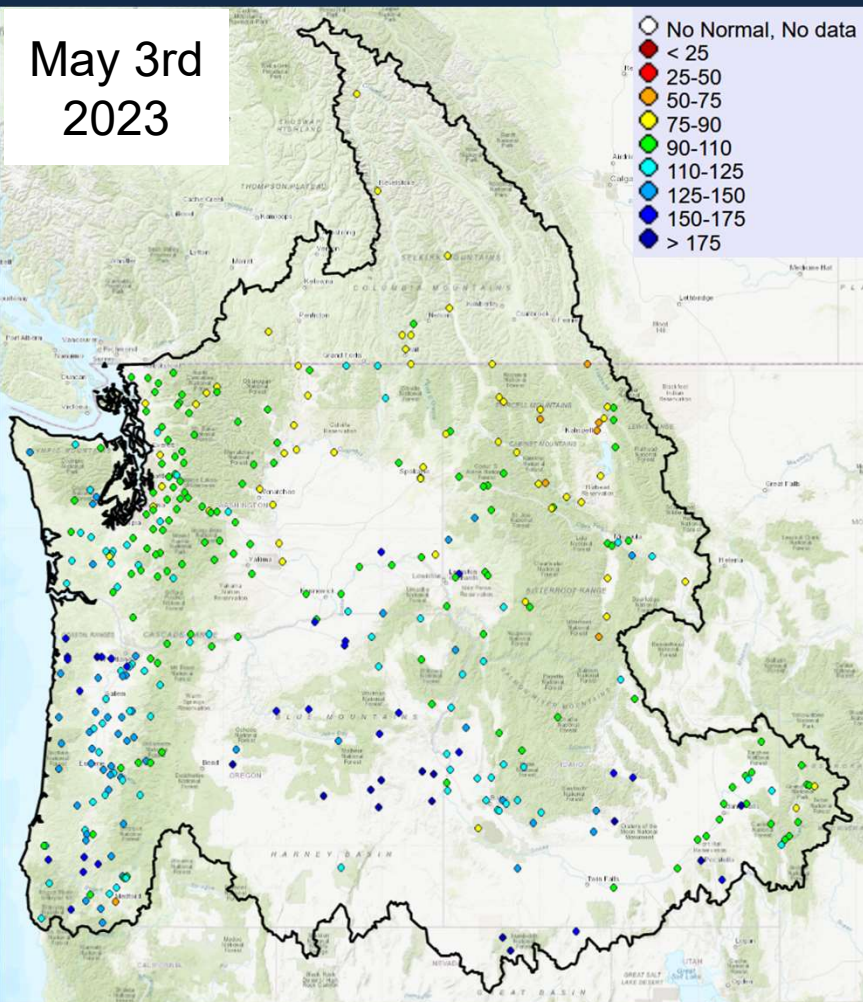
Lower Columbia Basin

The Dalles	93	7
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Water Supply Forecasts (Natural)

May 3rd
2023



% Normal Apr -Sep Volume

Washington

		<u>Δ since April 5</u>
Skagit nr Mt Vernon	93	0
Dungeness nr Sequim	98	5
Chehalis at Porter	110	2
Okanogan at Malott	77	7
Methow nr Pateros	104	29
Yakima at Parker	101	7
Walla Walla nr Touchet	119	-6

Oregon

Willamette at Salem	118	13
Rogue at Raygold	112	10
Umatilla at Pendleton	155	29
Grande Ronde R at Troy	117	9
Crooked nr Prineville	203	85
Owyhee Dam	183	96



Water Supply Forecasts

COLUMBIA - GRAND COULEE DAM (GCDW1) Forecasts for Water Year 2023

Official Water Supply

ESP with 10 Days QPF Ensemble: 2023-05-03 Issued: 2023-05-03

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	52095	54960	89	60978	61483
APR-JUL	43982	46590	88	52373	52774
APR-AUG	48484	51603	89	57939	58186
JAN-SEP	57116	59981	85	65999	70457
JAN-JUL	49003	51611	84	57394	61749
OCT-SEP	61980	64845	82	70862	78842

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2023-05-03 Issued: 2023-05-03

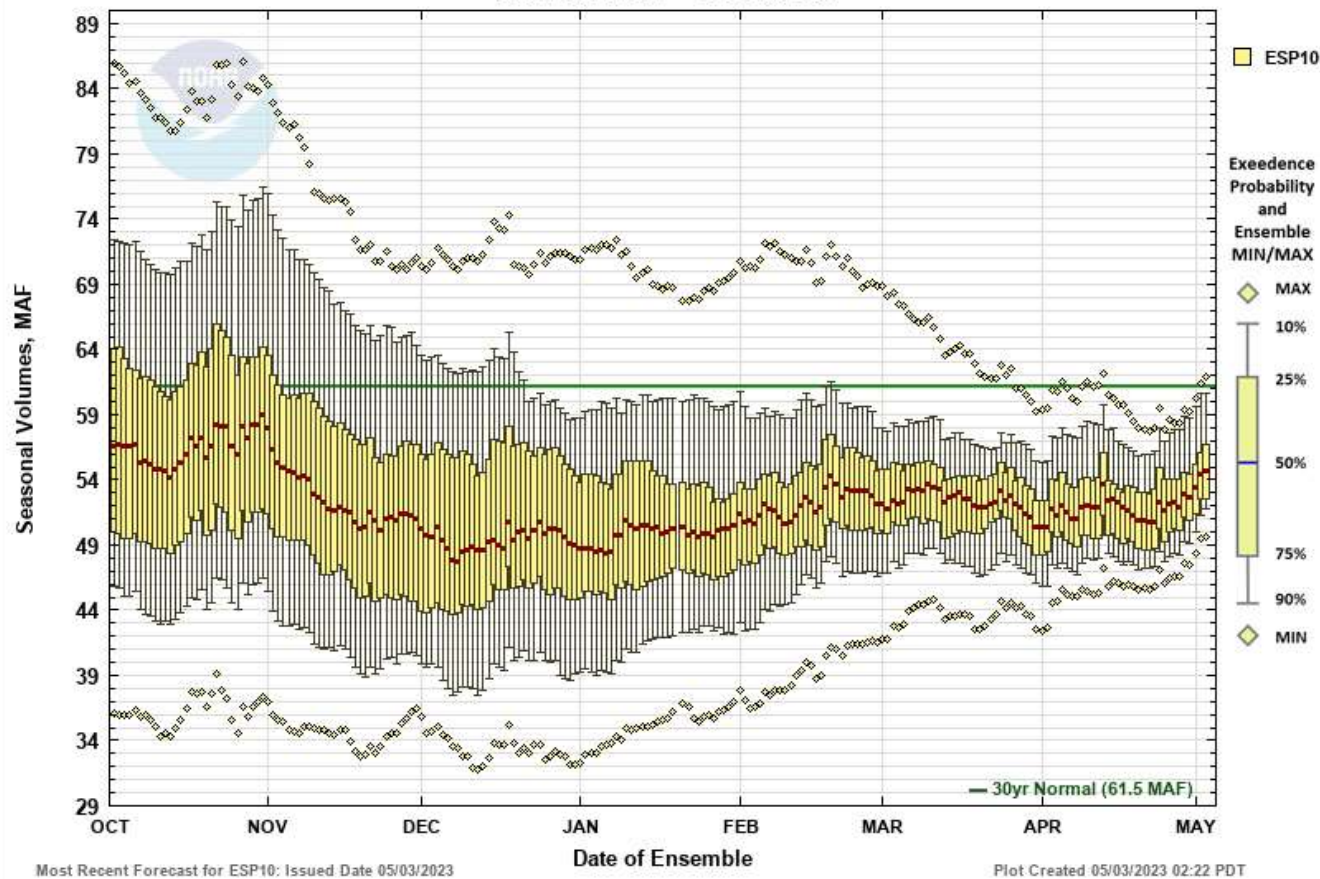
APR-SEP	51251	54472	89	60147	61483
APR-JUL	43876	46650	88	52013	52774
APR-AUG	48191	51563	89	57279	58186
JAN-SEP	56272	59493	84	65168	70457
JAN-JUL	48897	51671	84	57034	61749
OCT-SEP	61136	64357	82	70032	78842

Reference

ESP with 0 Days QPF Ensemble: 2023-05-03 Issued: 2023-05-03

APR-SEP	49810	53196	87	58757	61483
APR-JUL	42203	44804	85	50404	52774
APR-AUG	46797	50243	86	55866	58186
JAN-SEP	54831	58217	83	63778	70457
JAN-JUL	47224	49825	81	55425	61749
OCT-SEP	59694	63080	80	68641	78842

Water Supply Forecasts COLUMBIA - GRAND COULEE DAM Period APR to SEP -- Water Year 2023





Water Supply Forecasts

SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2023

Official Water Supply

ESP with 10 Days QPF Ensemble: 2023-05-03 Issued: 2023-05-03

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	22041	23180	104	26947	22232
APR-JUL	19503	20654	104	24184	19946
APR-AUG	20807	21969	104	25596	21121
JAN-SEP	26167	27307	92	31074	29736
JAN-JUL	23630	24781	90	28310	27450
OCT-SEP	29636	30776	90	34543	34287

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2023-05-03 Issued: 2023-05-03

APR-SEP	21516	23075	104	26832	22232
APR-JUL	18924	20462	103	24142	19946
APR-AUG	20248	21785	103	25522	21121
JAN-SEP	25642	27202	91	30959	29736
JAN-JUL	23051	24589	90	28268	27450
OCT-SEP	29111	30671	89	34428	34287

Reference

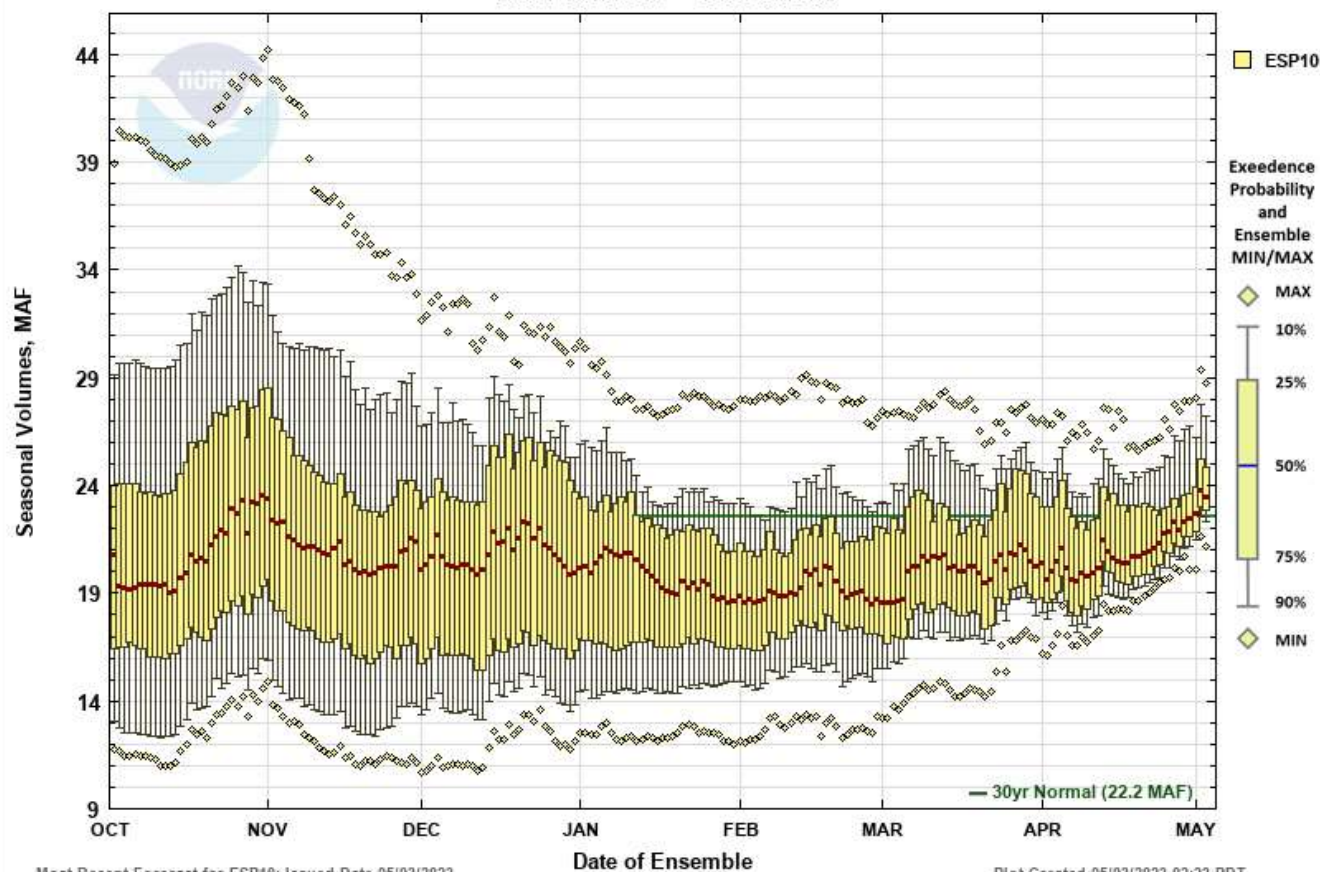
ESP with 0 Days QPF Ensemble: 2023-05-03 Issued: 2023-05-03

APR-SEP	20721	22257	100	26133	22232
APR-JUL	18254	19728	99	23382	19946
APR-AUG	19531	21016	100	24785	21121
JAN-SEP	24848	26384	89	30260	29736
JAN-JUL	22381	23855	87	27509	27450
OCT-SEP	28317	29853	87	33729	34287

Water Supply Forecasts

SNAKE - LOWER GRANITE DAM

Period APR to SEP -- Water Year 2023



www.nwrhc.noaa.gov/water_supply/ws_forecasts.php?id=LGDW1



Water Supply Forecasts

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2023

Official Water Supply

ESP with 10 Days QPF Ensemble: 2023-05-03 Issued: 2023-05-03

Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	83356	87988	93	96385	94166
APR-JUL	72190	76309	93	83897	81933
APR-AUG	78646	83148	93	91526	89196
JAN-SEP	94970	99601	86	107998	115946
JAN-JUL	83804	87923	85	95511	103714
OCT-SEP	105354	109985	83	118382	132314

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2023-05-03 Issued: 2023-05-03

APR-SEP	82139	88069	94	96761	94166
APR-JUL	71716	76733	94	84714	81933
APR-AUG	77641	83320	93	91615	89196
JAN-SEP	93752	99682	86	108375	115946
JAN-JUL	83330	88346	85	96328	103714
OCT-SEP	104136	110066	83	118759	132314

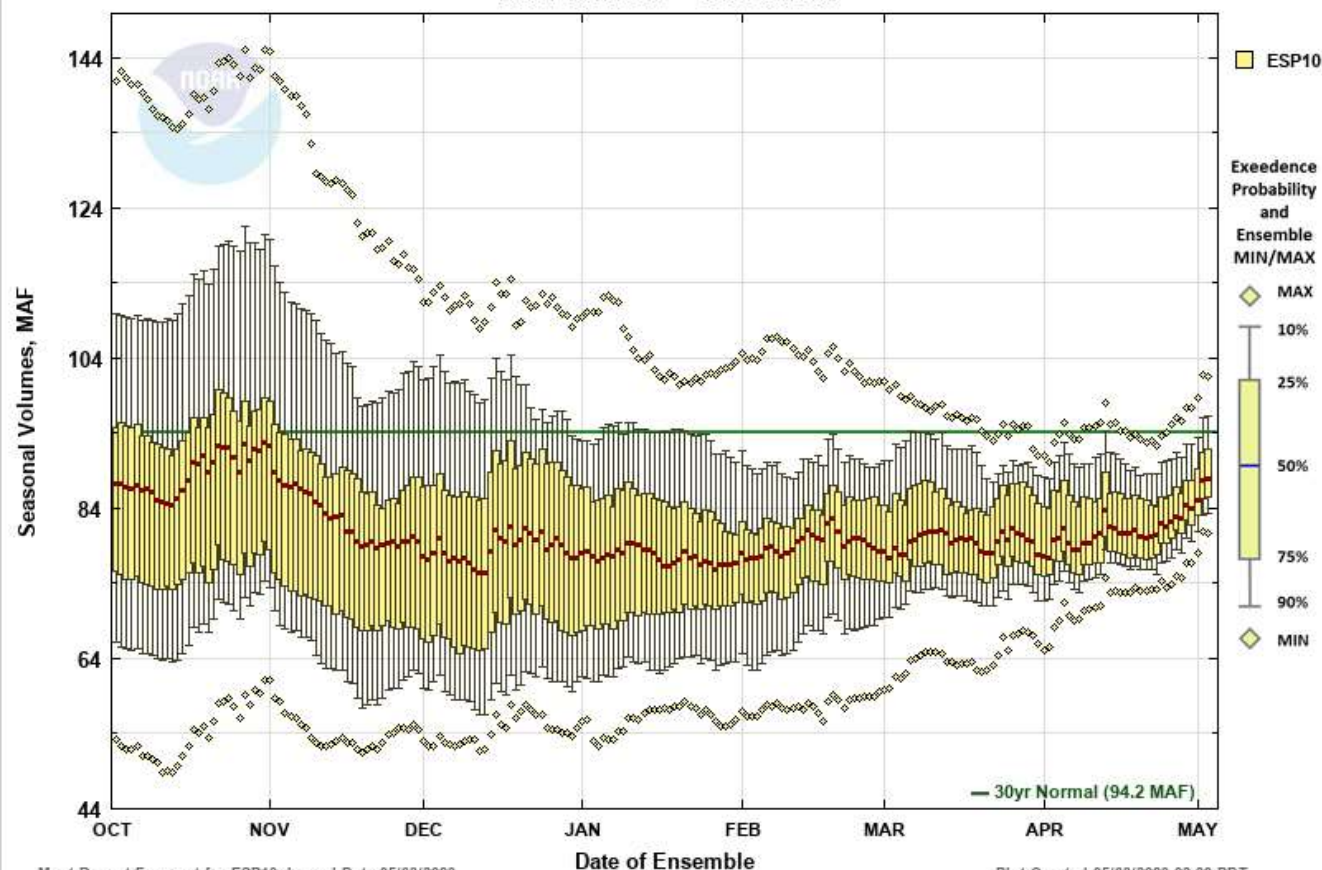
Reference

ESP with 0 Days QPF Ensemble: 2023-05-03 Issued: 2023-05-03

APR-SEP	79828	84822	90	94162	94166
APR-JUL	68494	73237	89	82377	81933
APR-AUG	75227	80207	90	89193	89196
JAN-SEP	91442	96436	83	105775	115946
JAN-JUL	80107	84851	82	93991	103714
OCT-SEP	101825	106819	81	116159	132314

Water Supply Forecasts

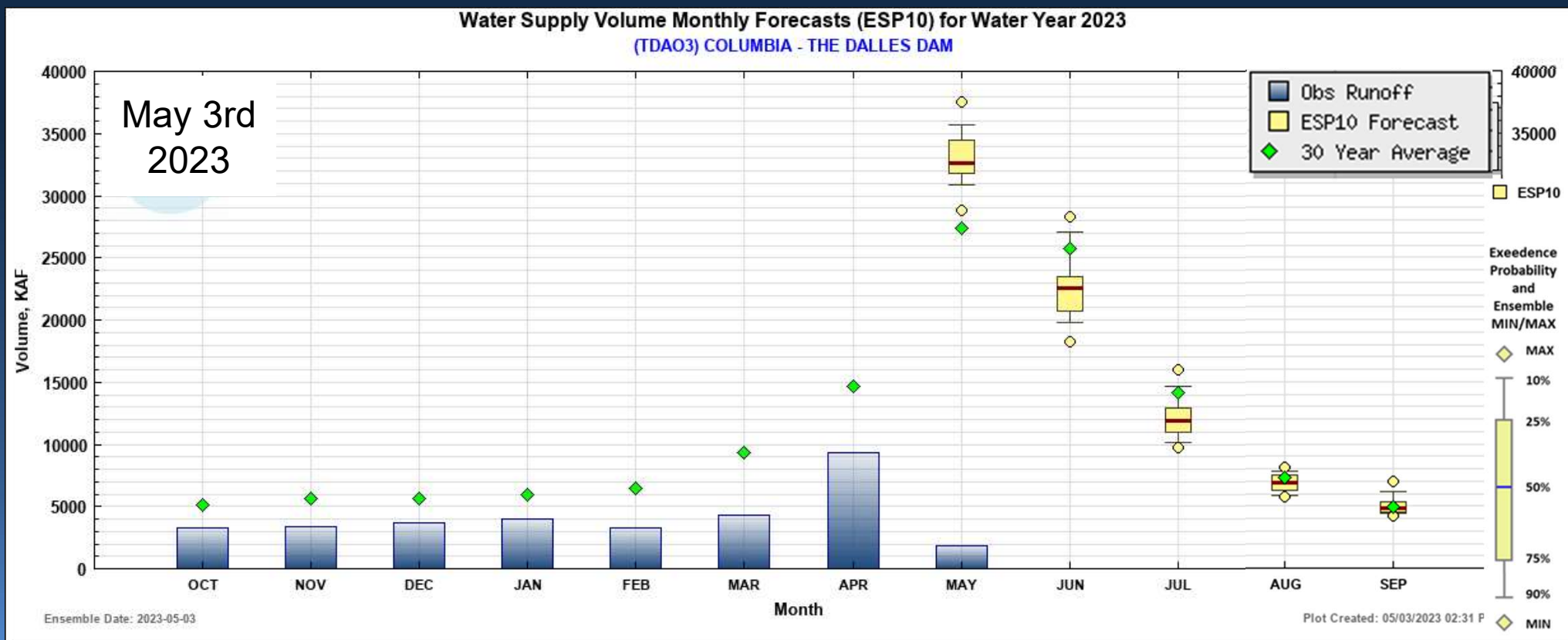
COLUMBIA - THE DALLES DAM
Period APR to SEP -- Water Year 2023



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

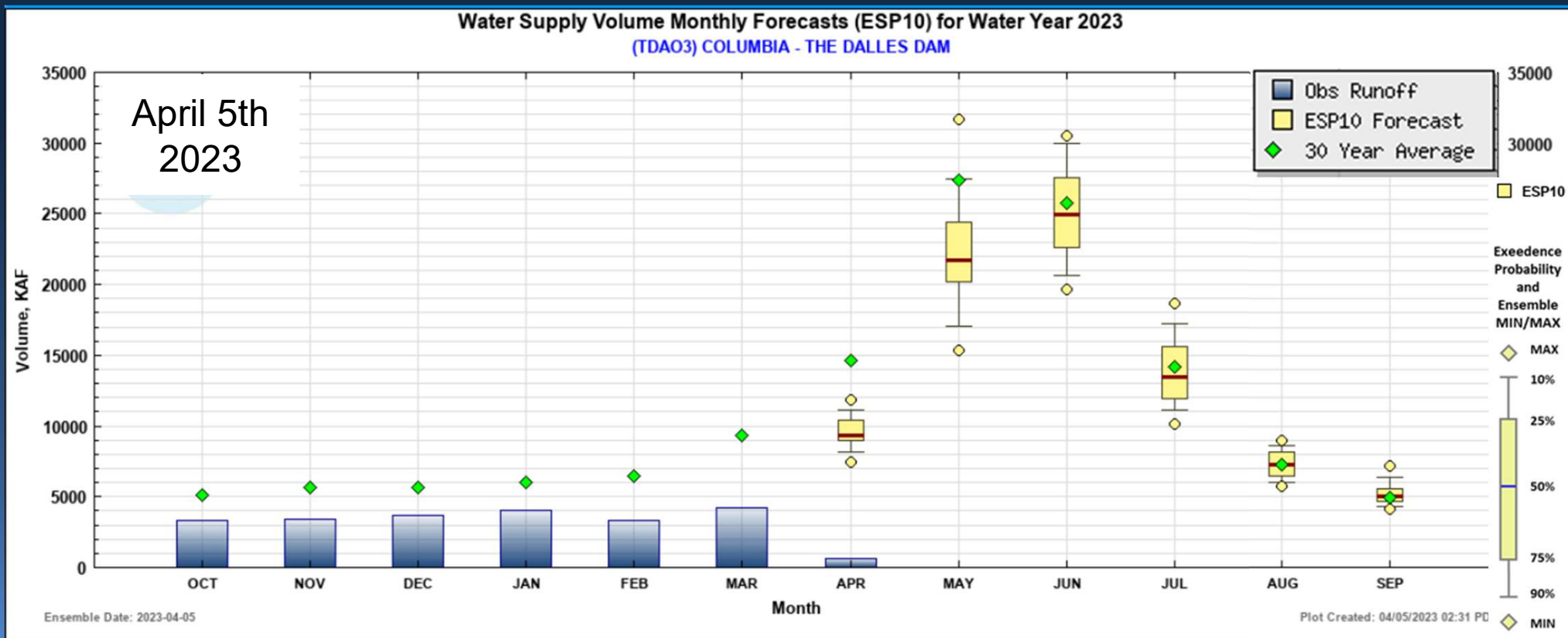


Monthly Water Supply Forecasts





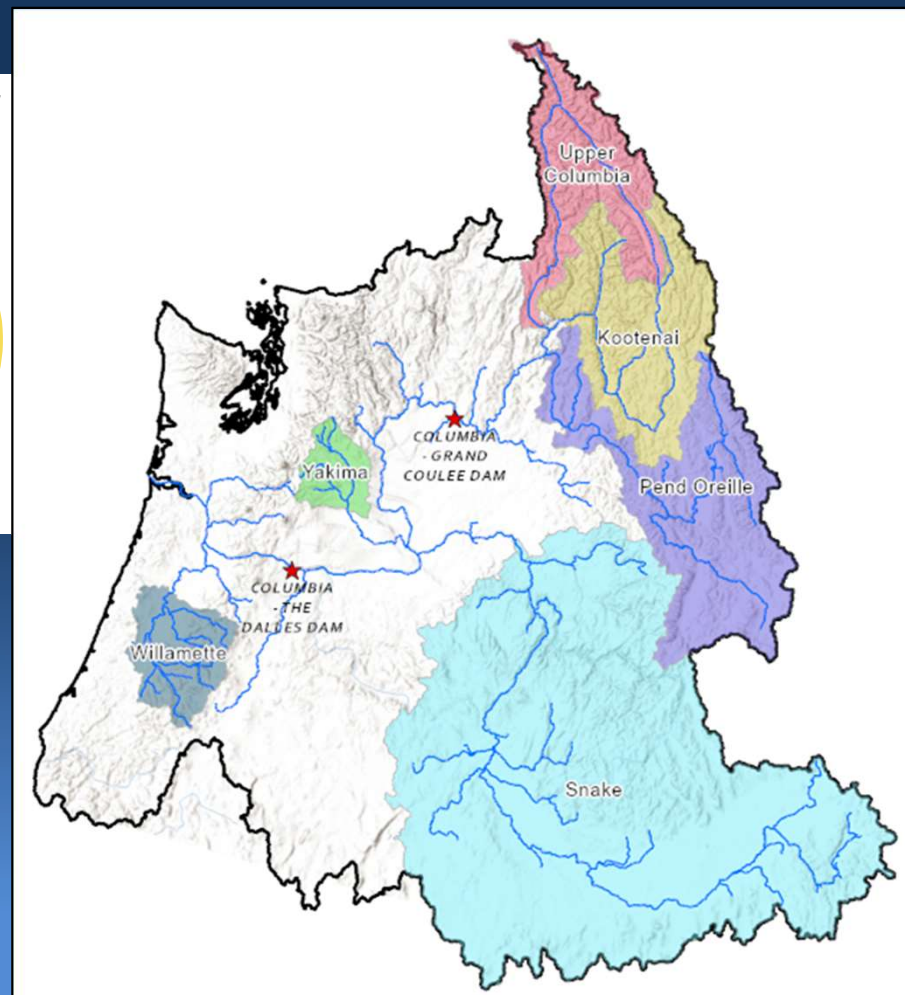
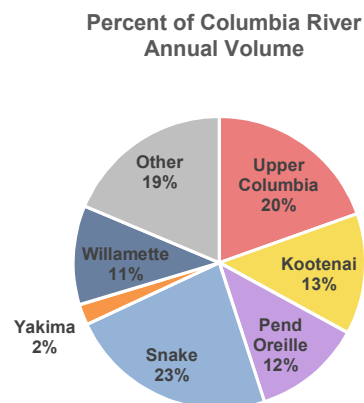
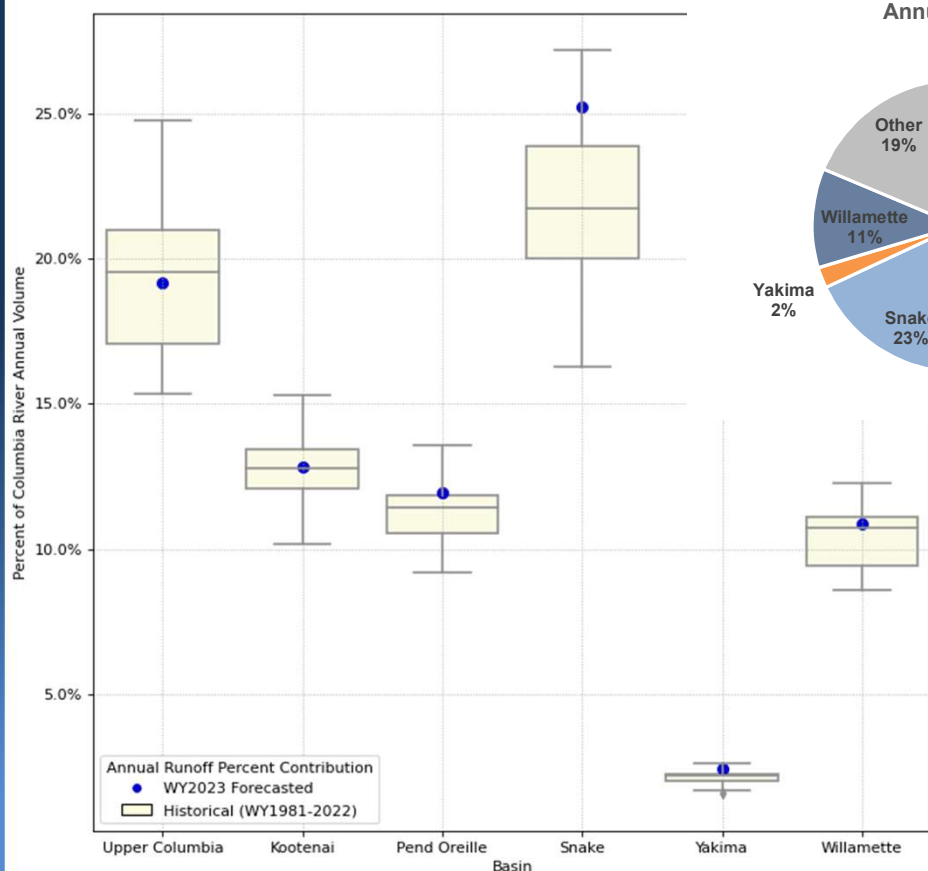
Monthly Water Supply Forecasts





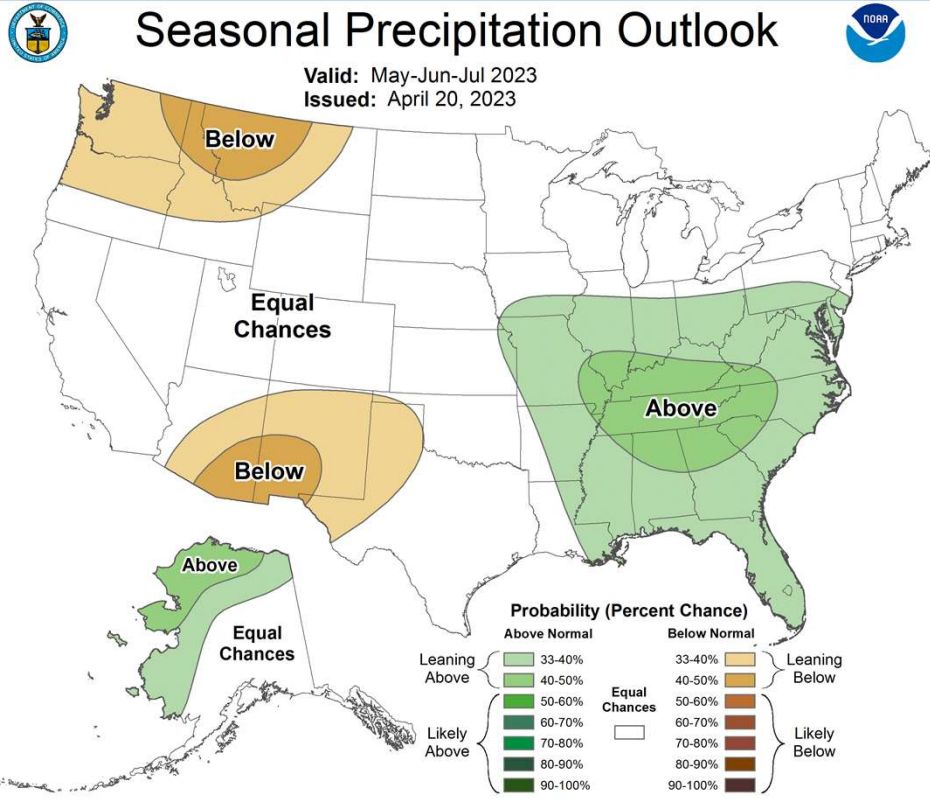
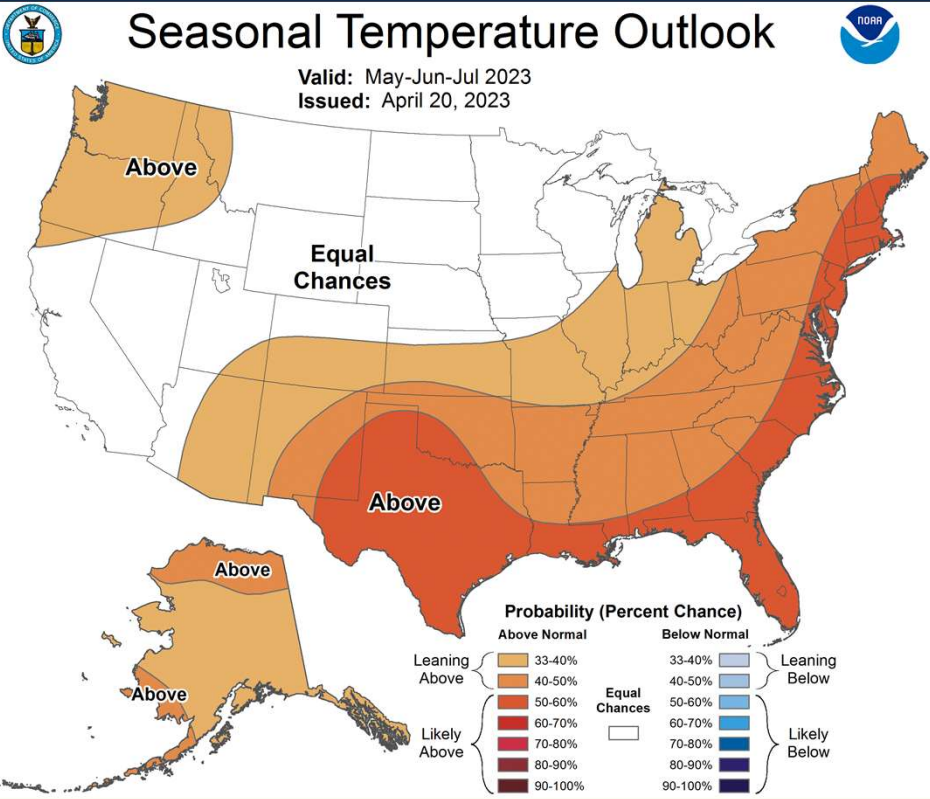
ESP10 Sep-Oct Percent Contributions

ESP10 Sep-Oct Water Supply Forecast
Percent contribution to Total Columbia River Volumes
(with historical percent contributions)





Climate Prediction Center Seasonal Outlook





Take Home Messages

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Despite below precipitation total, and due to colder temperatures, snowpack is near to above normal.

Recent warm weather is responsible for onset of snowmelt.

Water year adjusted runoff to date remains below normal. Runoff volumes as a percent of normal should increase throughout May due to snowmelt.

April-September volume forecasts for large tributaries to the Columbia River System are below normal, but smaller subbasins are a mix of above/below.

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WY2023 Schedule for Live Water Supply Briefings

Jun

1st

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

Telephone Conference Call Number
(same for each month's brief):
(213) 929 - 4212

Access Code :
949-968-637#



Questions?

If you have a question, use the 'Raise Hand' function we can unmute you or type your question in the chat.

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#**.

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