



Northwest River Forecast Center



January 2020 Water Supply Briefing

Telephone Conference : (562) 247-8422
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(503) 326-7291



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



Water Supply Forecast Briefing Summary

- Below normal observed precipitation through NWRFC region
- Observed snowpack west of the Rockies is below normal
- 10 day precipitation forecast is well above normal
- Apr-Sep water supply forecast at The Dalles is near normal



Water Supply Forecast Briefing Outline

- Meteorological/hydrological observations WY2020
- 10 day NWRFC precipitation forecast
- NWRFC water supply forecast refresher
- Current water supply forecasts and model states
 - Select local regions
 - Above Grand Coulee and Brownlee Dam
 - Above The Dalles Dam
- Chalk talk: Critical snow building months
- Summary

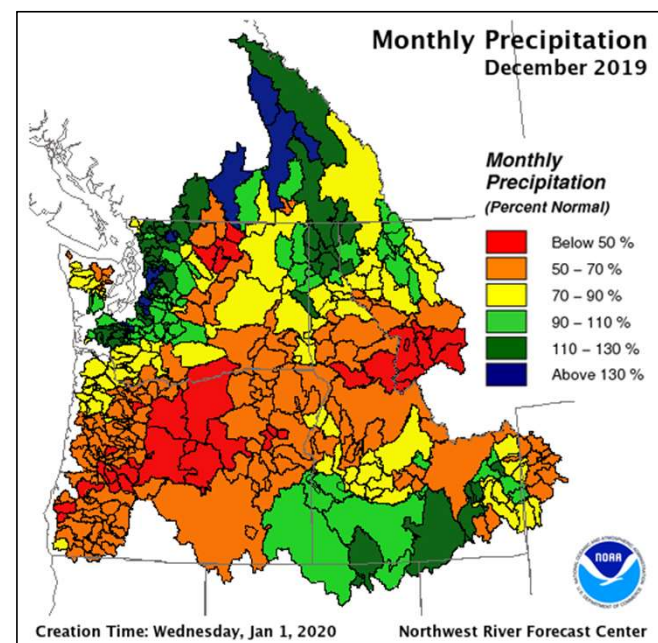
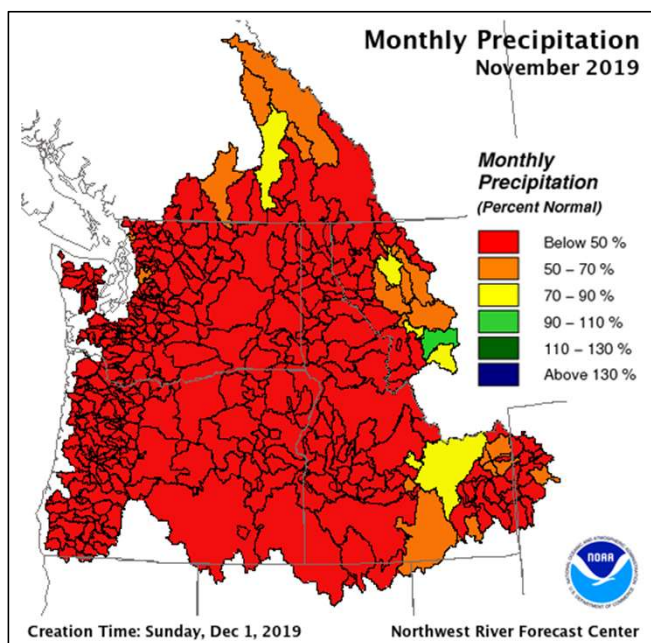
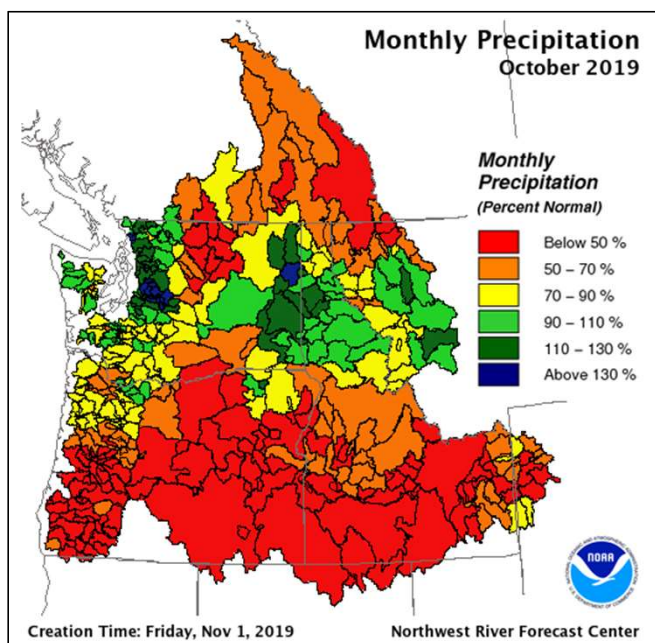


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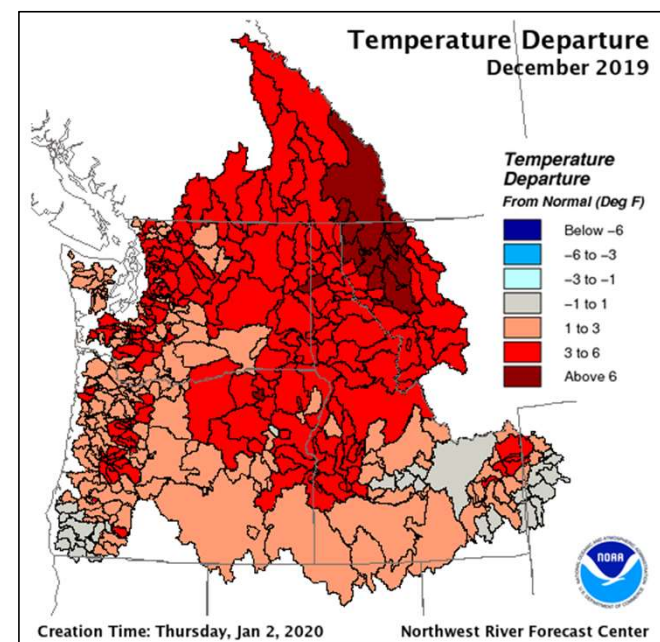
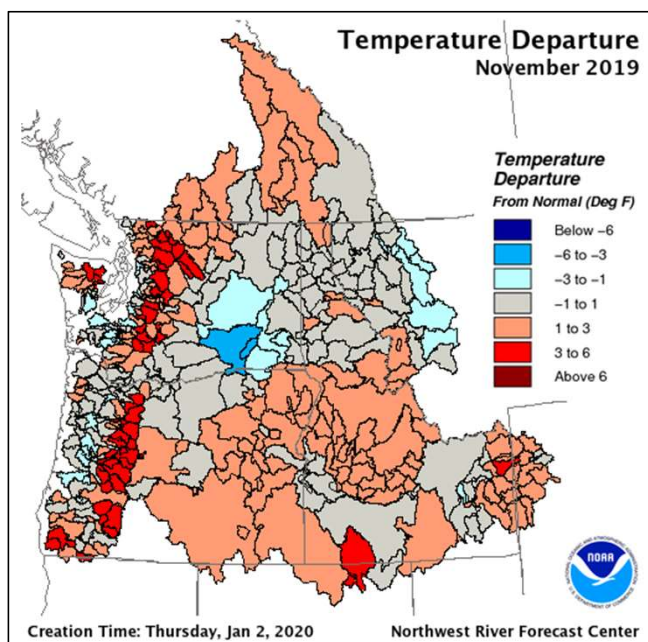
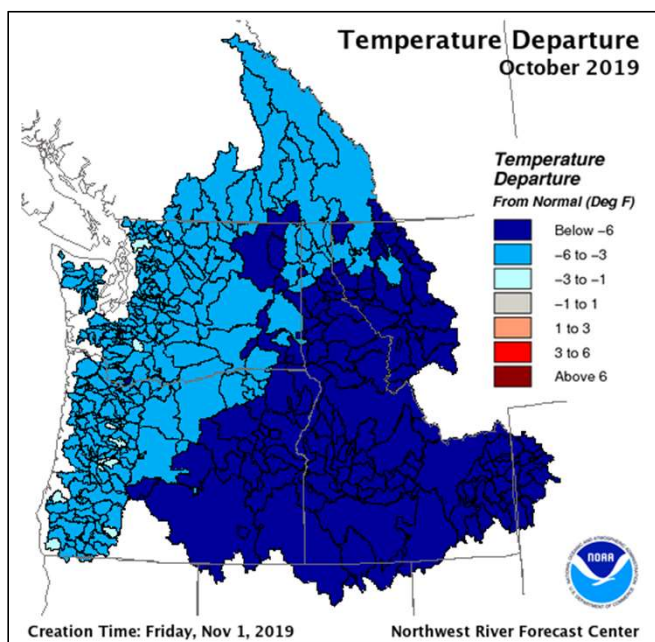


Observed % of Normal Monthly Precipitation



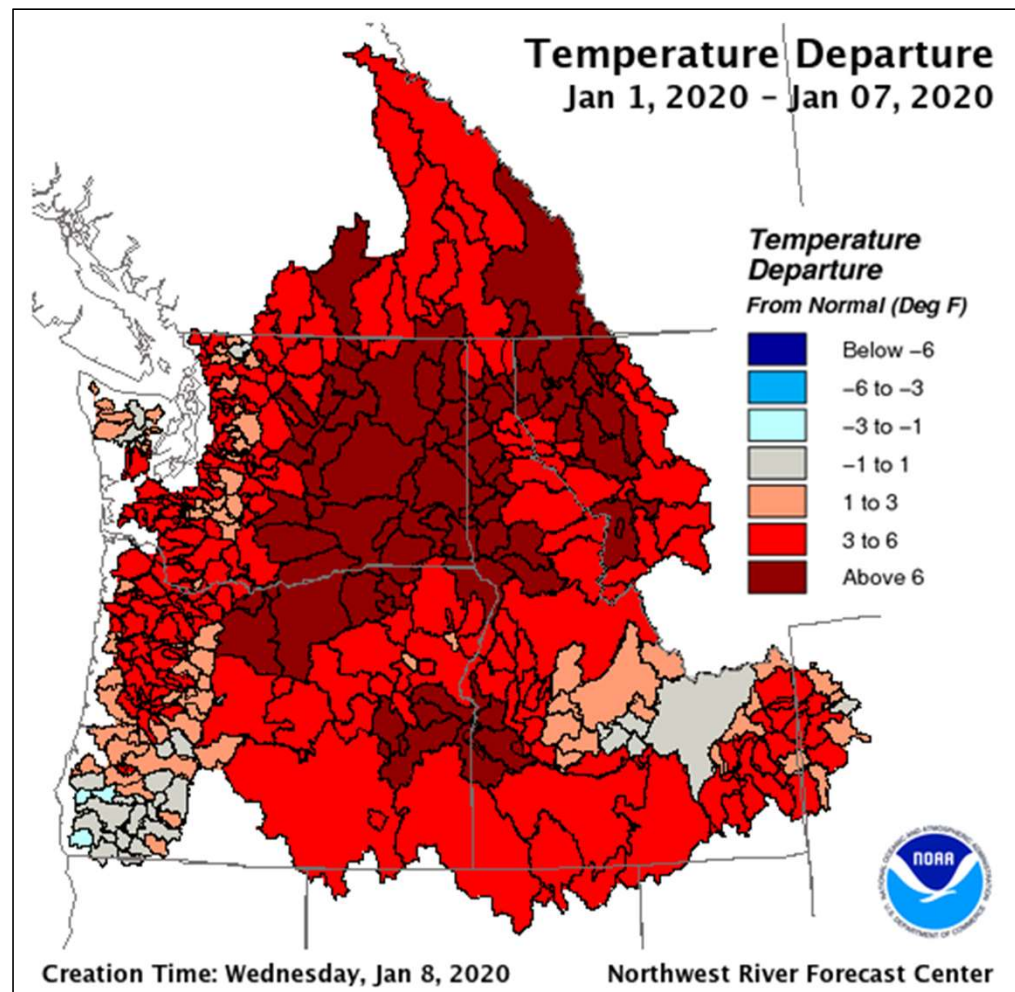
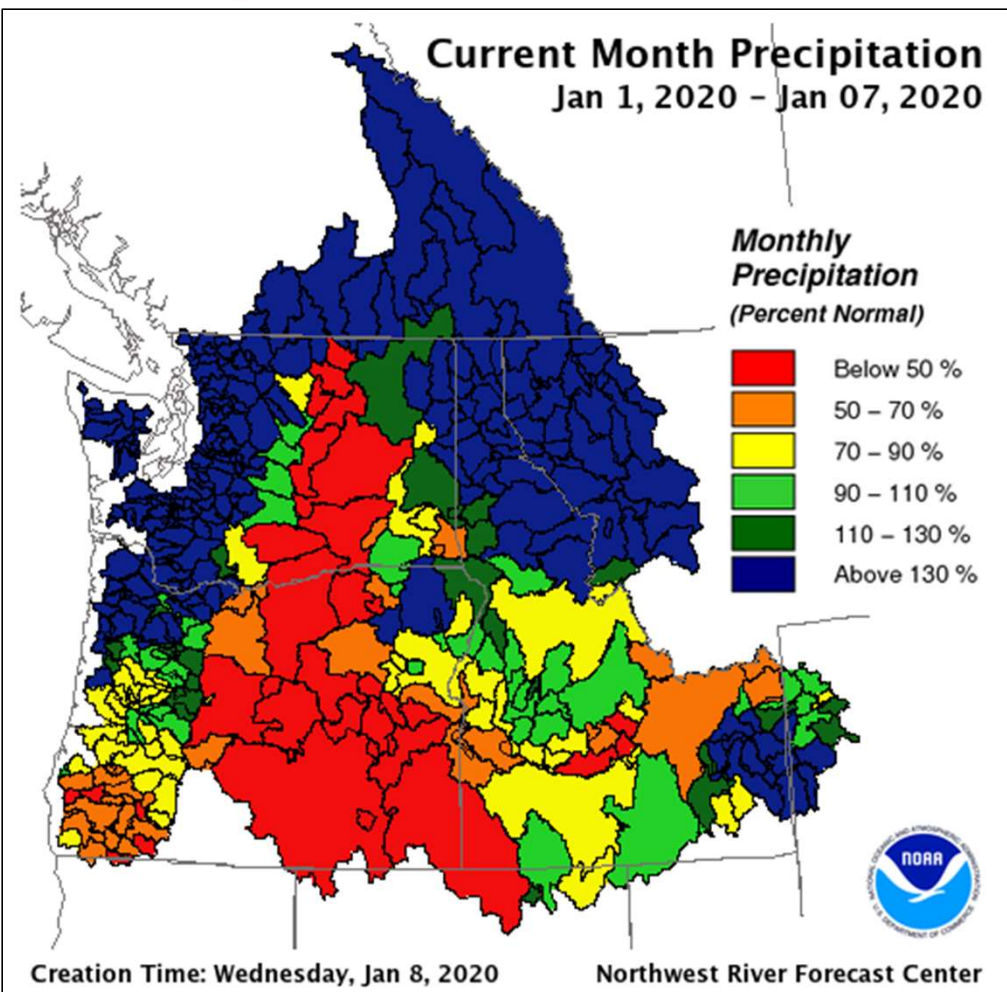


Observed Monthly Temperature Departures

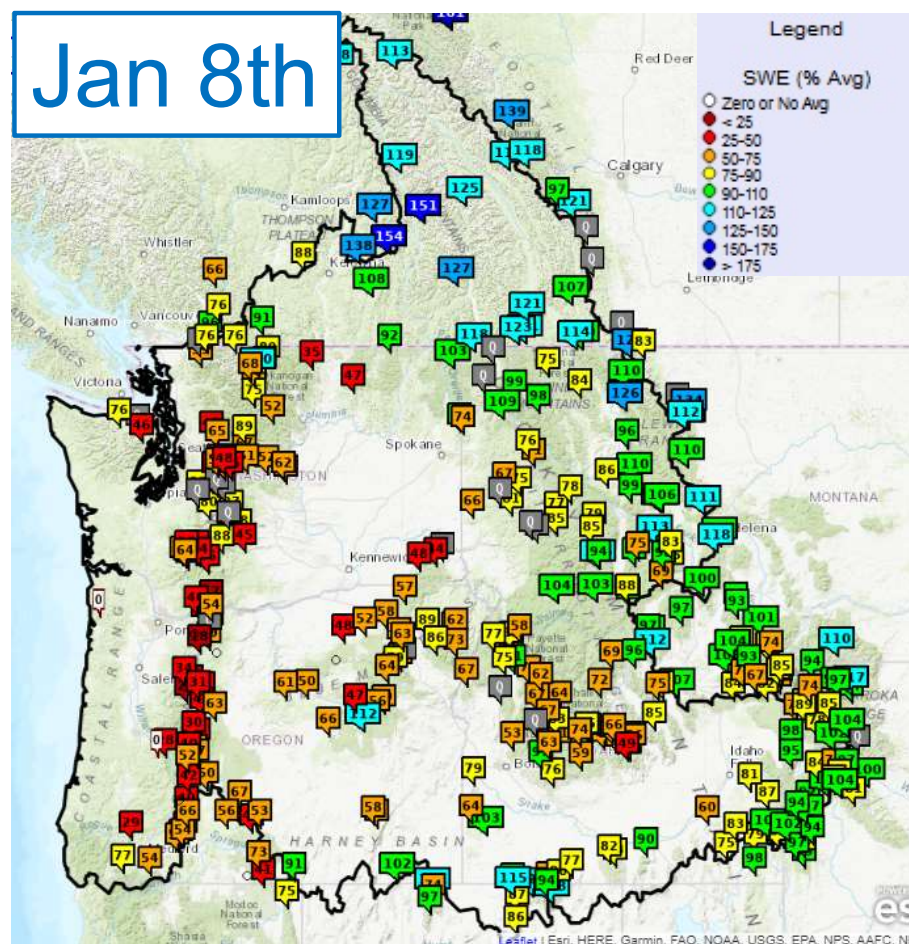




Observed January Temperature and Precipitation



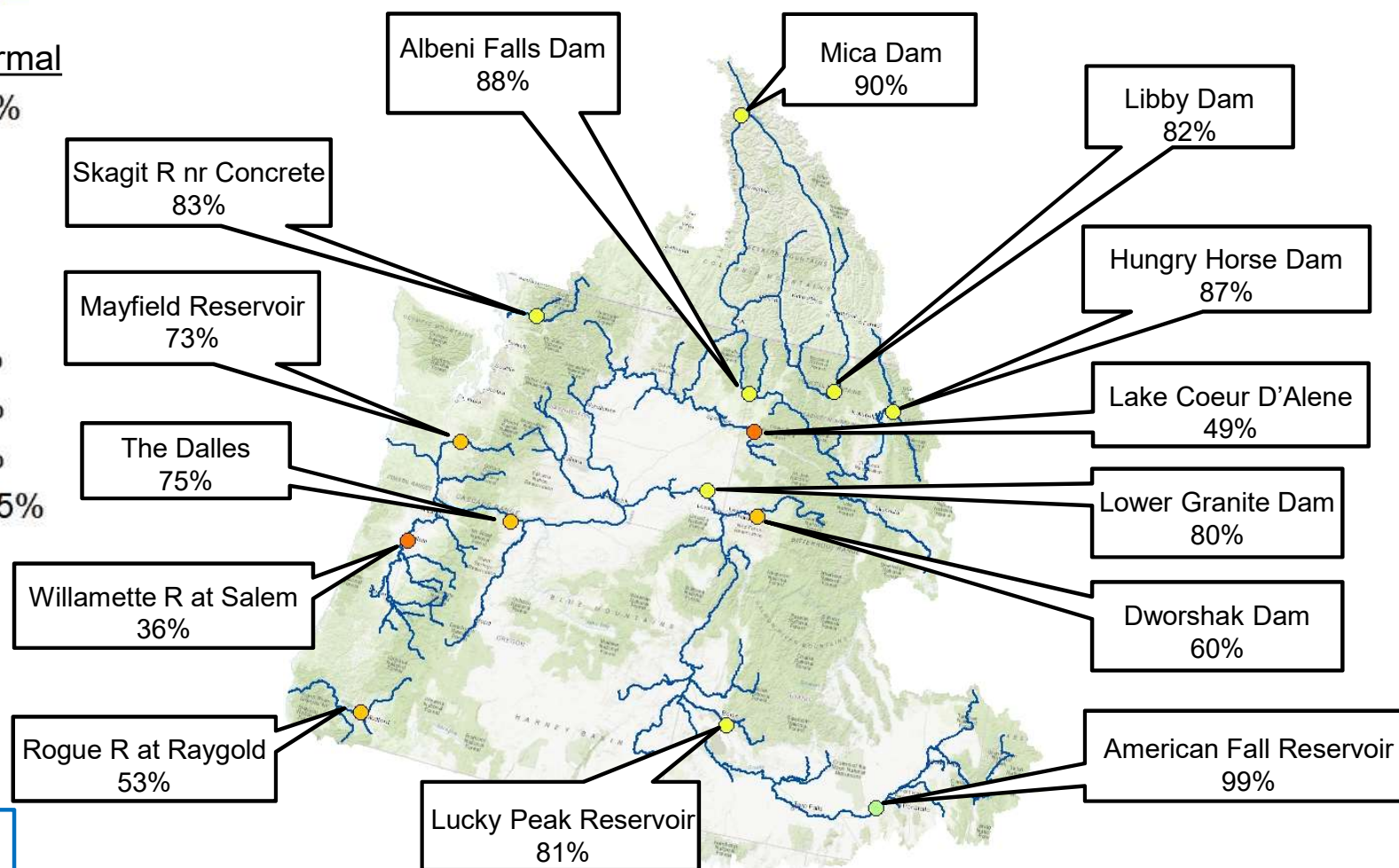
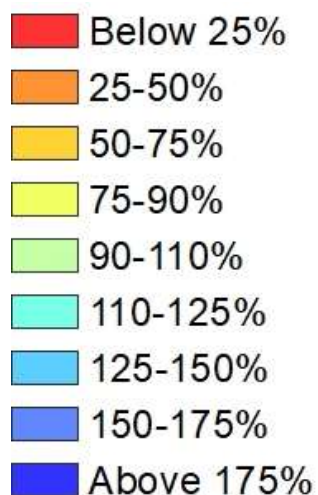
Observed Snowpack (SWE % of Normal)



Snow data from NRCS, BC Hydro, and Alberta Environment and Parks

Current Adjusted Runoff Conditions

Percent of Normal



Jan 8th



Water Supply Forecast Briefing Outline

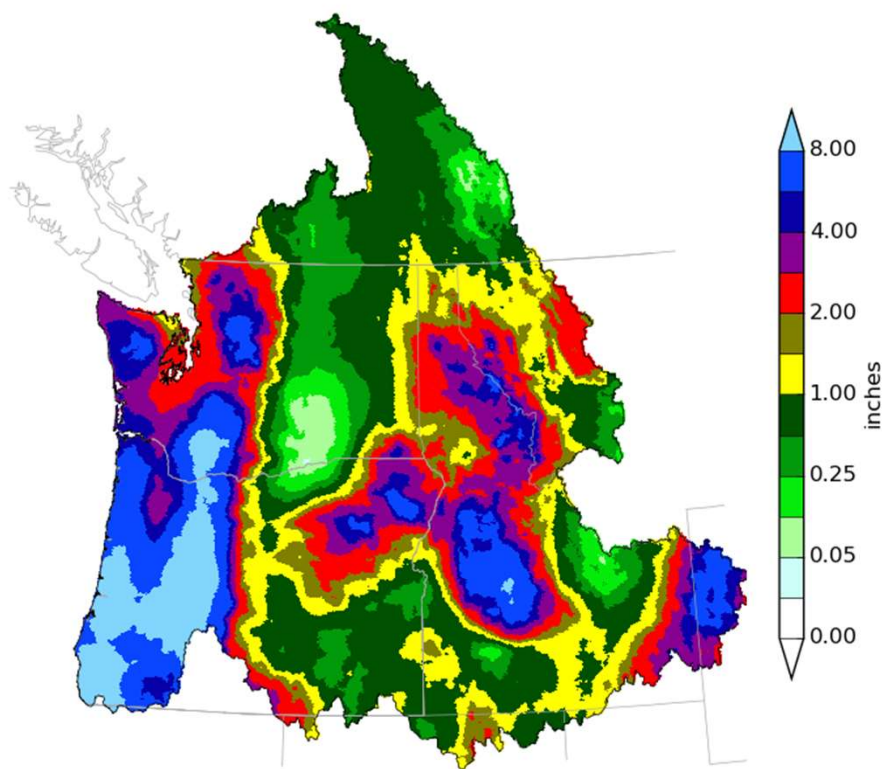
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Cumulative 10 Day Precipitation Forecast



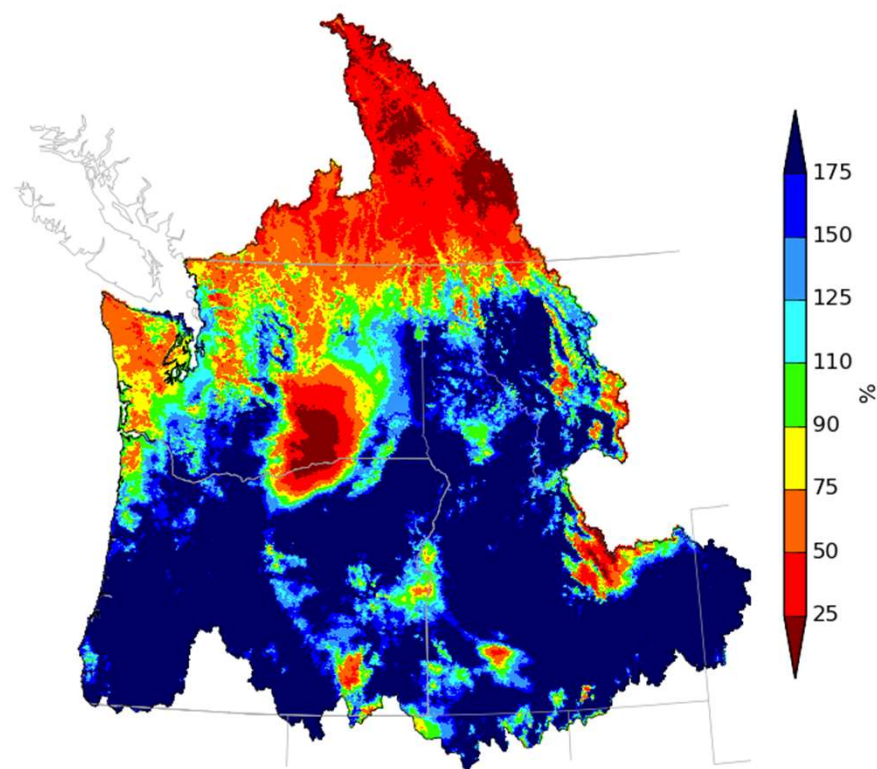
Northwest River Forecast Center
10 Day QPF, Ending 12Z, 01/18/20



Creation Time: Wed Jan 8 15:27:12 UTC 2020



Northwest River Forecast Center
10 Day QPF (Percent of Climatology), Ending 12Z, 01/18/20



Creation Time: Wed Jan 8 15:28:04 UTC 2020



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NWRFC Water Supply Forecast Refresher

- ESP: Ensemble Streamflow Prediction
- Multiple forecast periods: Monthly, Seasonal
- Issued daily
- Two types of ESP forecast:
 - Water supply – developed for Columbia River Treaty
 - ESP natural – anthropogenic conditions removed

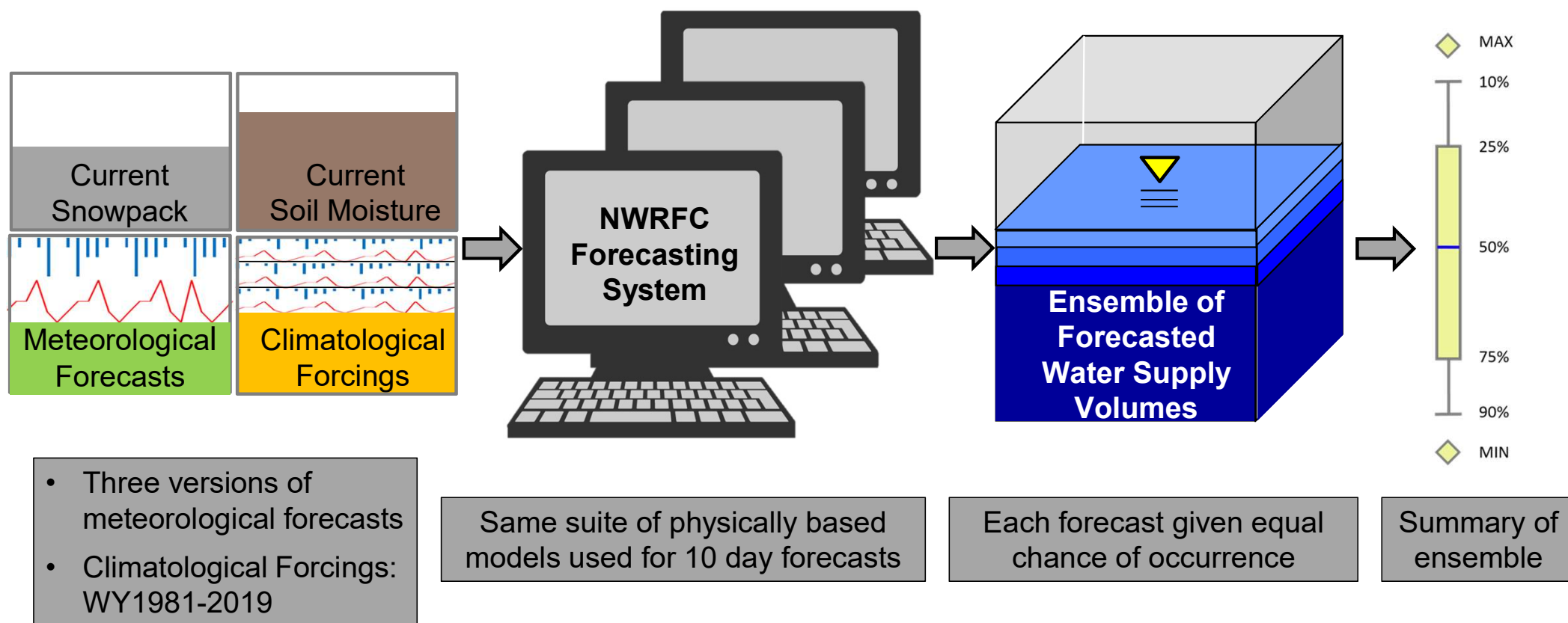
COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2020					
Official Water Supply					
ESP with 10 Days QPF Ensemble: 2020-01-02 Issued: 2020-01-02					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	72947	88939	96	103333	92704
APR-JUL	62063	75828	95	90629	79855
APR-AUG	68299	83664	96	97963	87532
JAN-SEP	89983	109506	96	127446	114216
JAN-JUL	78722	96317	95	115269	101368
OCT-SEP	102306	121828	93	139767	130518
Experimental Water Supply					
HEFS with 15 days EQPF Ensemble: 2020-01-02 Issued: 2020-01-02					
APR-SEP	72185	89895	97	105469	92704
APR-JUL	61481	75830	95	92716	79855
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JAN-SEP	91639	108937	95	127283	114216
JAN-JUL	81409	94436	93	115160	101368
OCT-SEP	103962	121259	93	139605	130518
Reference					
ESP with 0 Days QPF Ensemble: 2020-01-02 Issued: 2020-01-02					
APR-SEP	69305	86525	93	102363	92704
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Overview of recent enhancement/changes to NWRFC water supply forecasts can be found at <https://www.nwrfc.noaa.gov/presentations/presentations.cgi>



NWRFC Water Supply Forecast Refresher

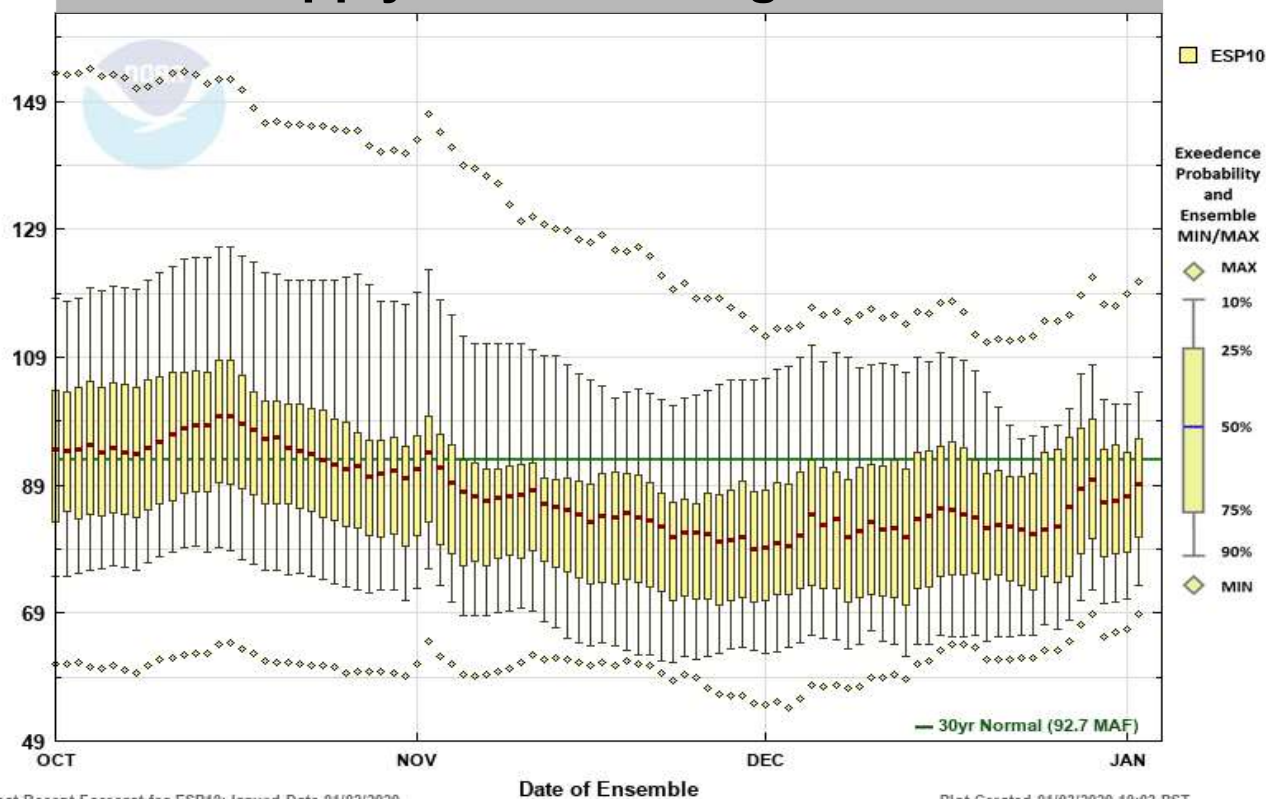
Components of a Water Supply Forecasts





NWRFC Water Supply Forecast Refresher

Water Supply Forecast Progression Plots



COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2020

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Exceedance probabilities ONLY quantify uncertainty in future precipitation and temperature



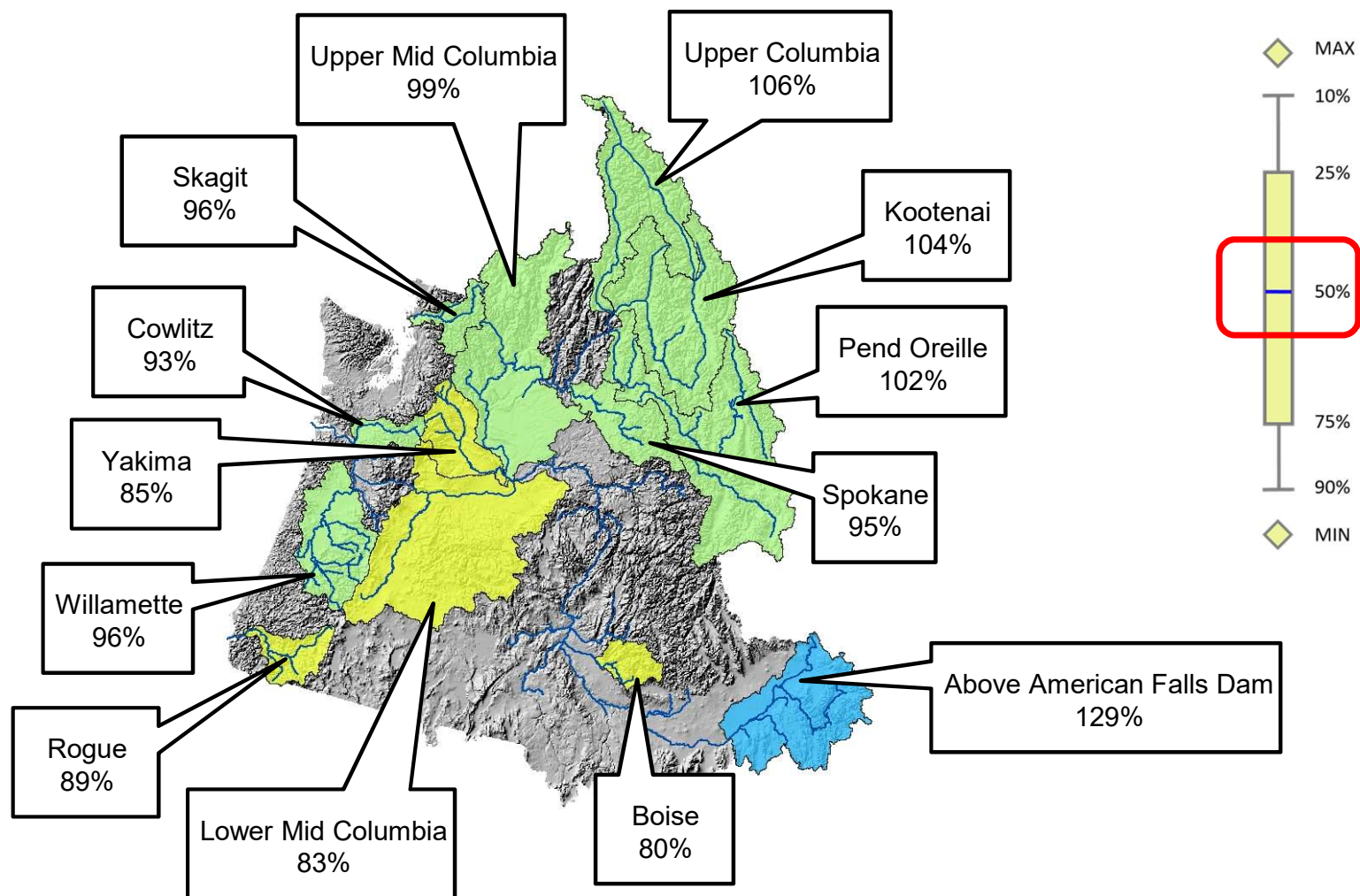
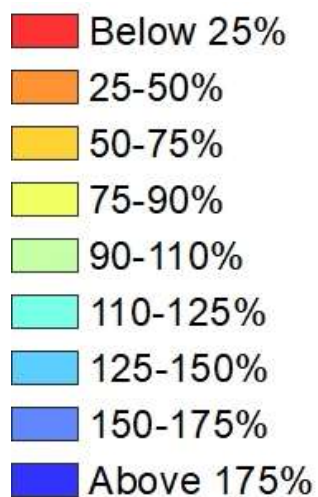
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April-September Water Supply Forecasts

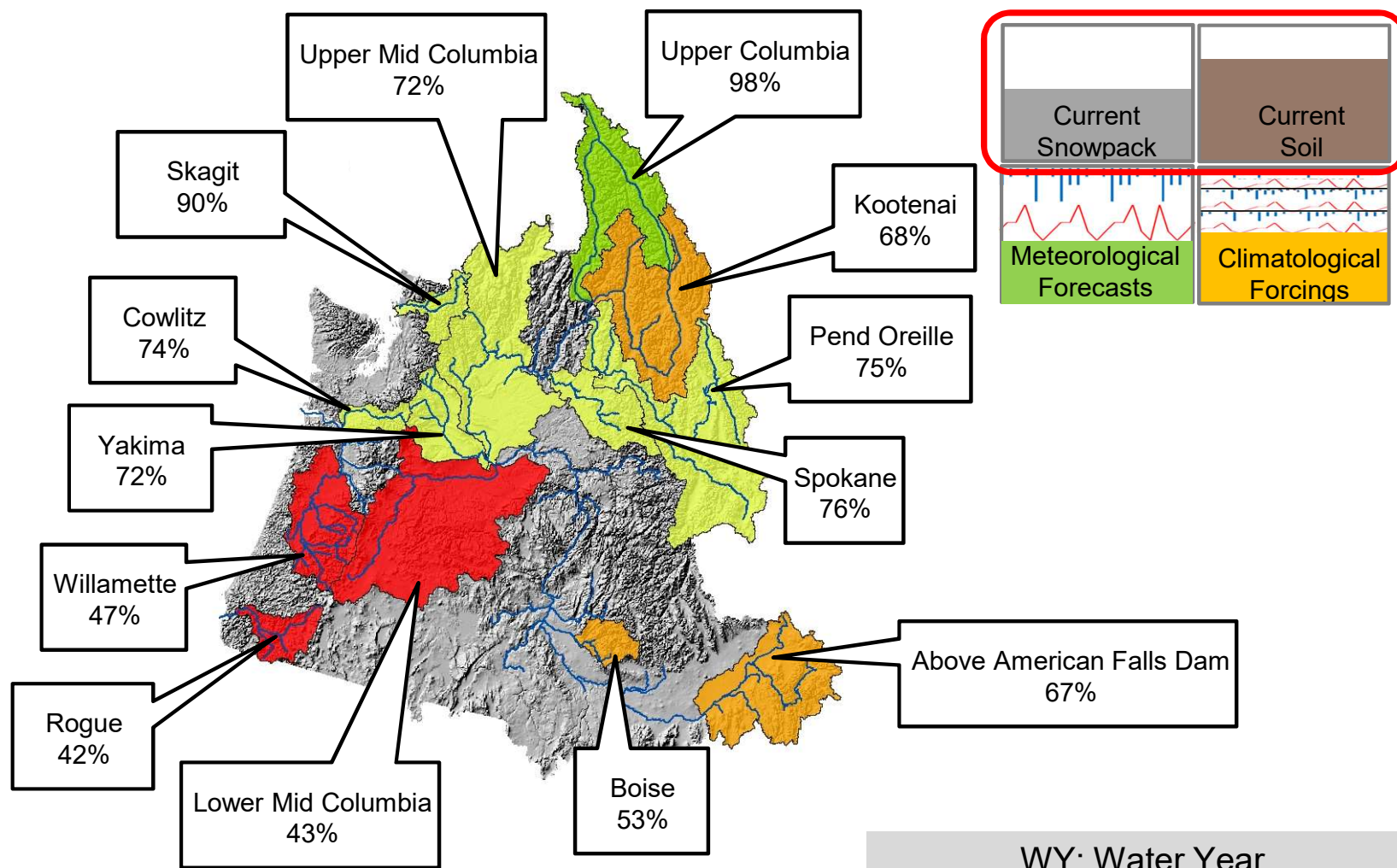
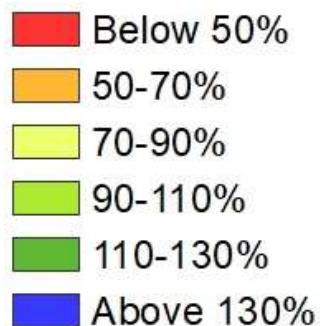
Percent of Normal





Water Supply Component (WY Precipitation)

Percent of Normal

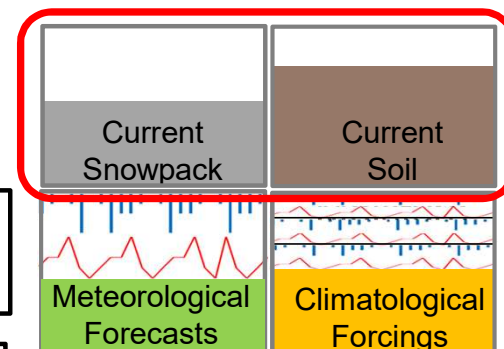
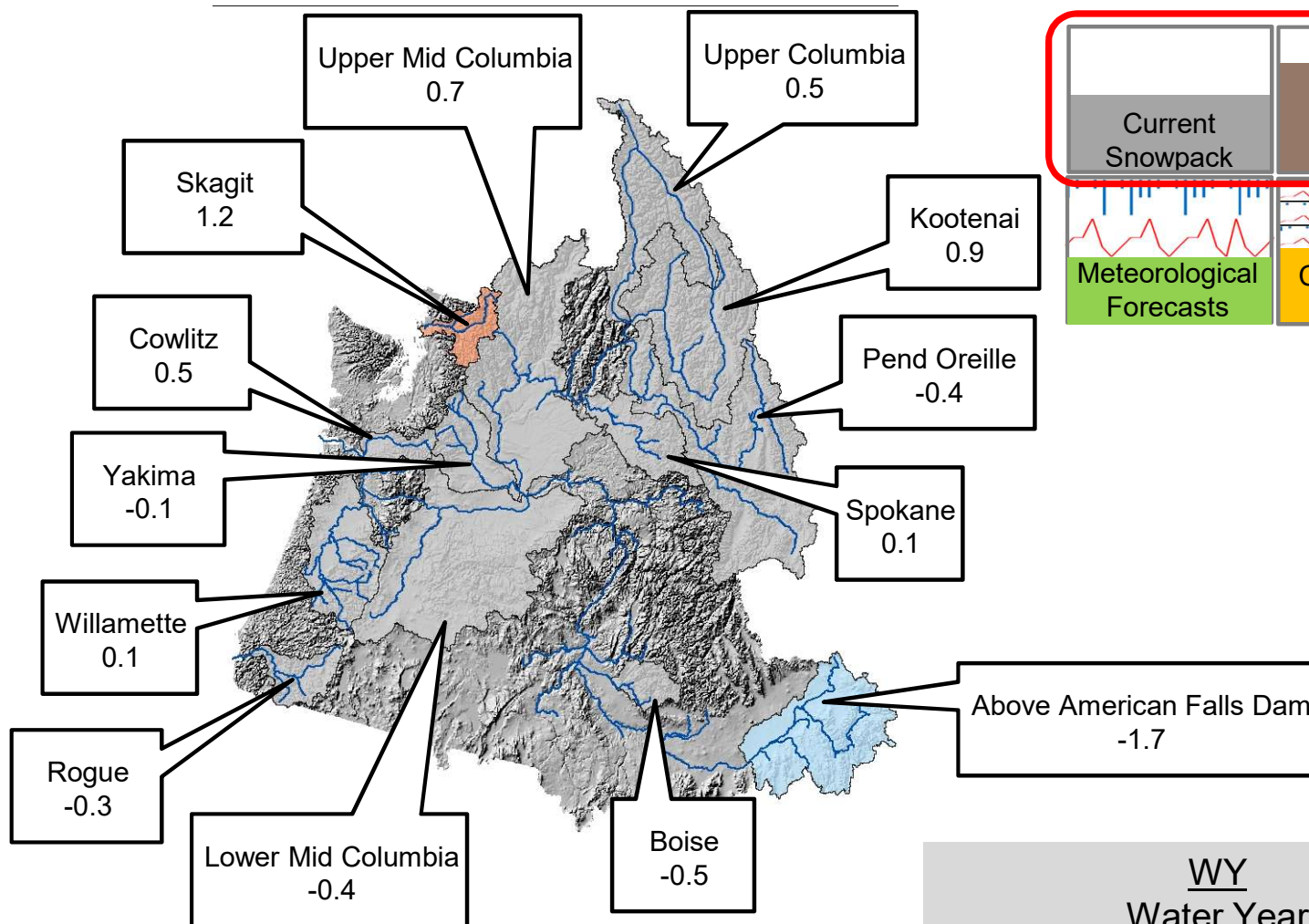
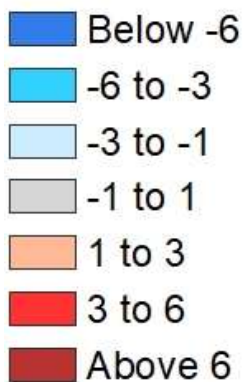


WY: Water Year



Water Supply Component (WY Temperature)

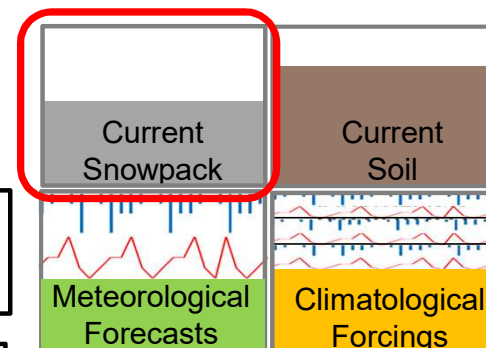
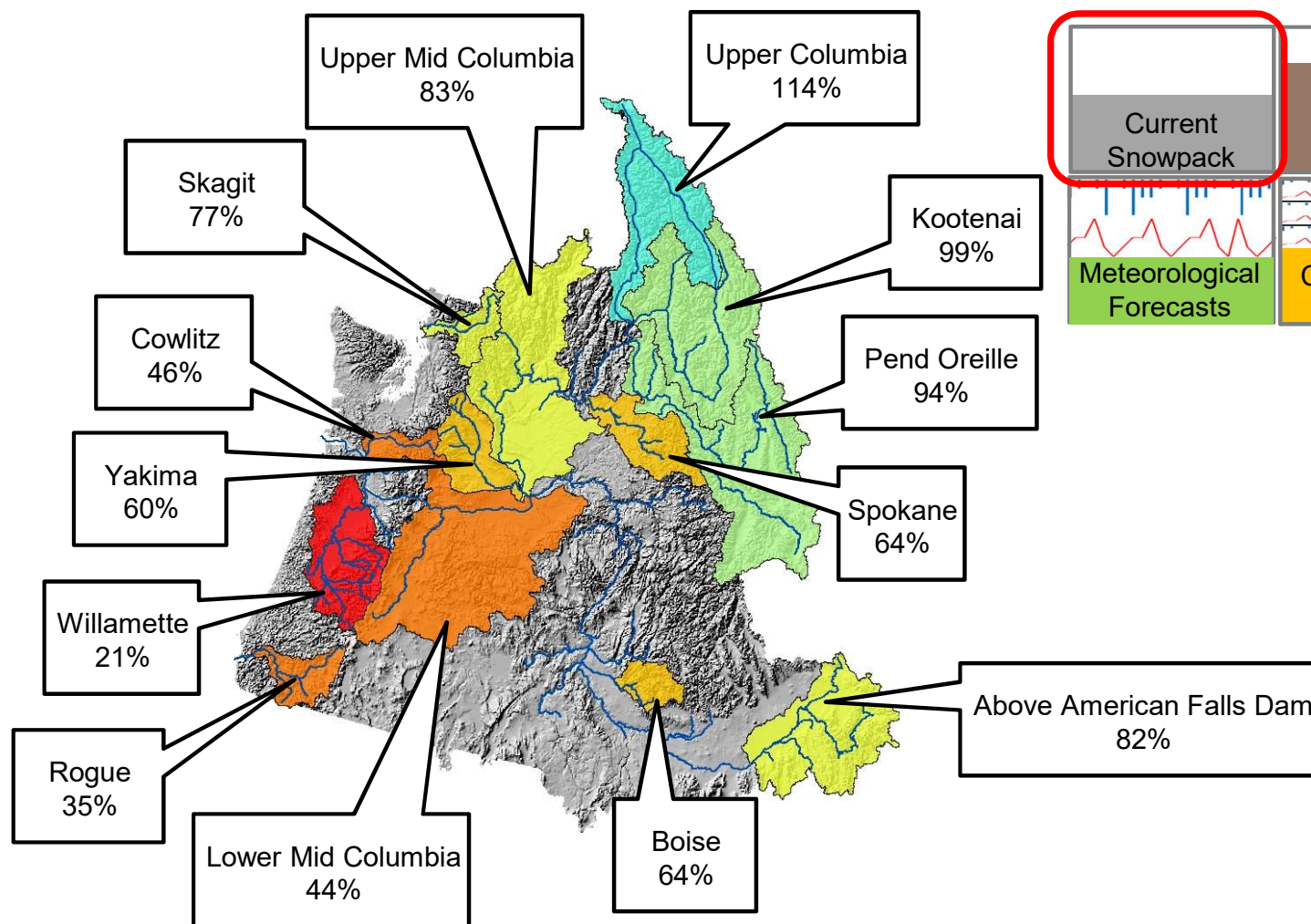
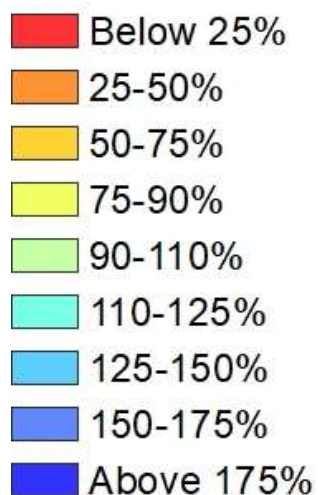
Deviation (DegF)



WY
Water Year

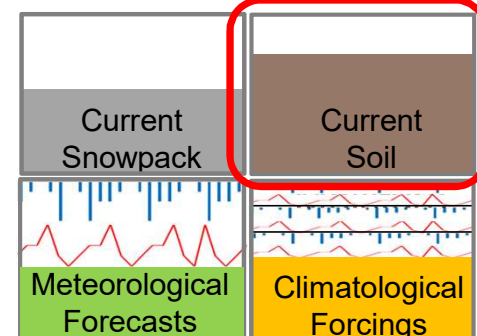
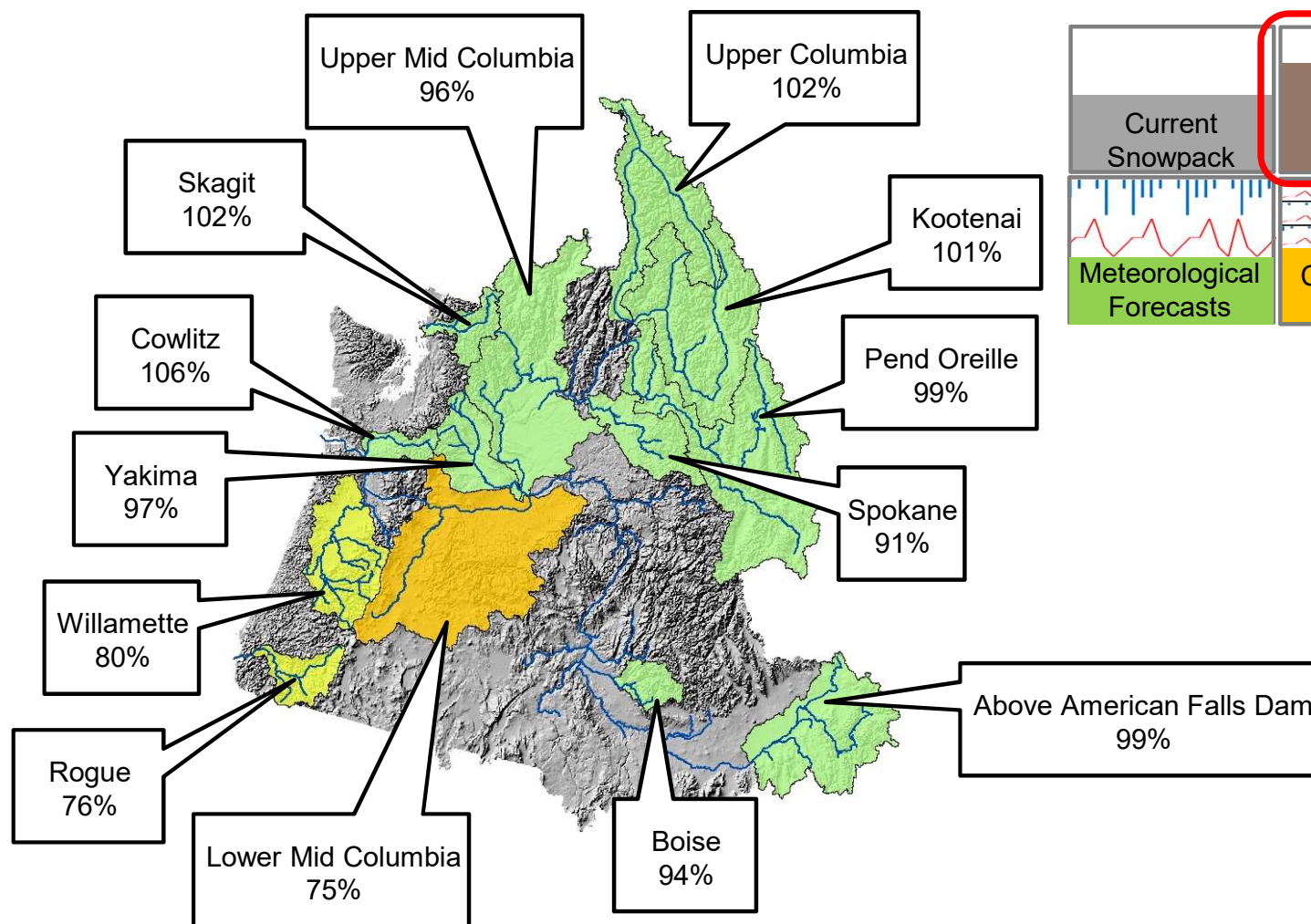
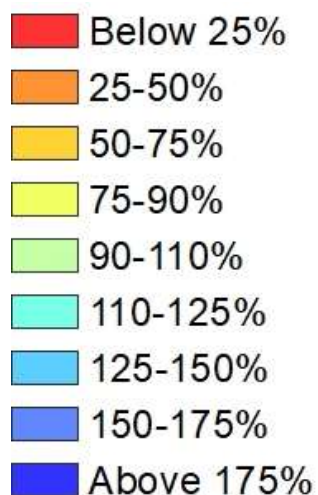
Water Supply Component (Snowpack)

Percent of Normal



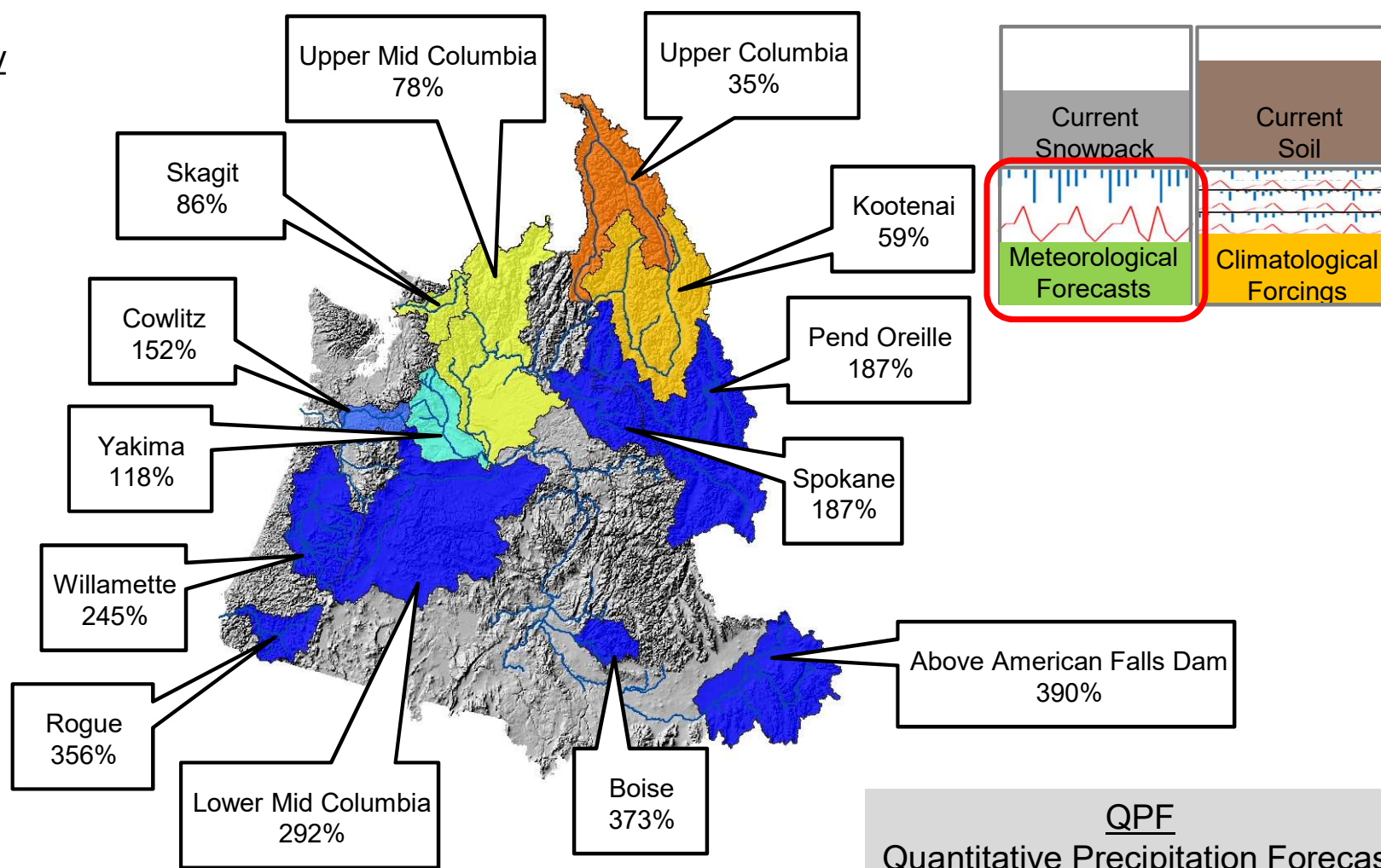
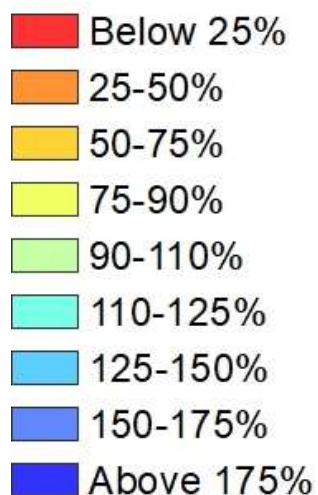
Water Supply Component (Soil)

Percent of Normal



Water Supply Component (10 Day QPF)

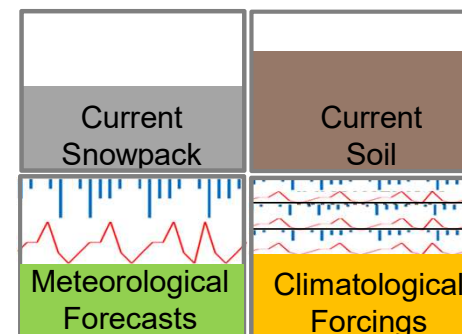
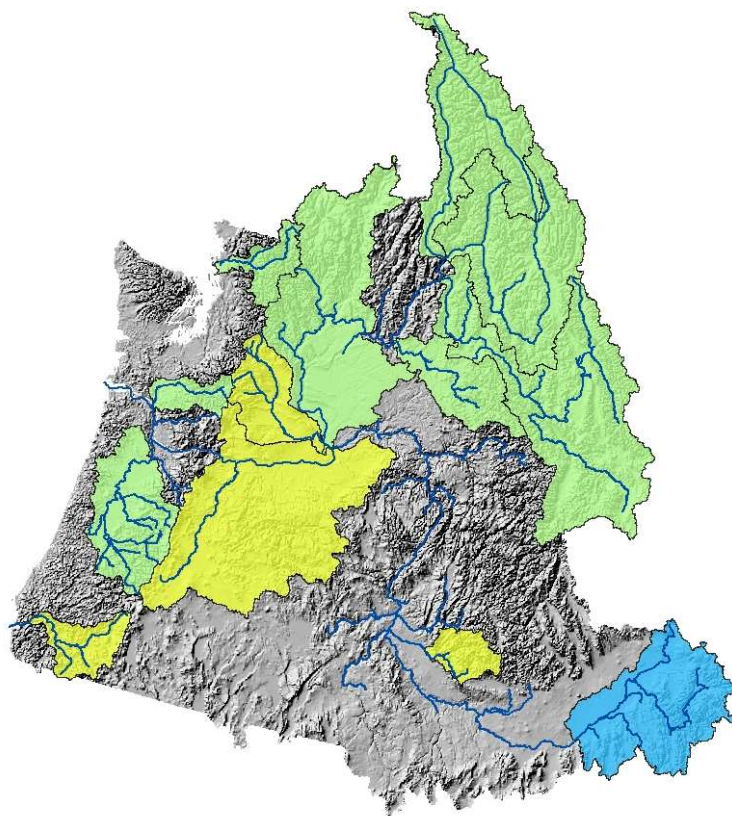
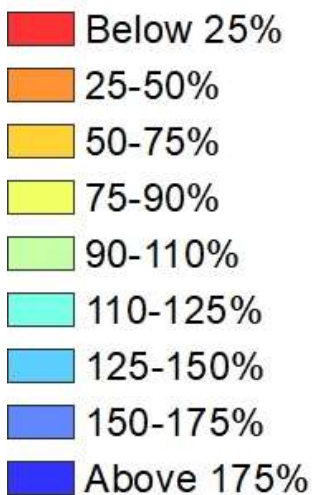
Percent of Climatology





April-September Water Supply Forecasts

Percent of Normal



Notes

- Water supply forecasts near normal (*exception Upper Snake*)
- SWE low in West & Snake
- Soil moisture low in Oregon
- 10 day QPF buoying water supply forecasts in south



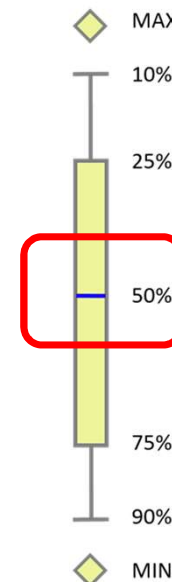
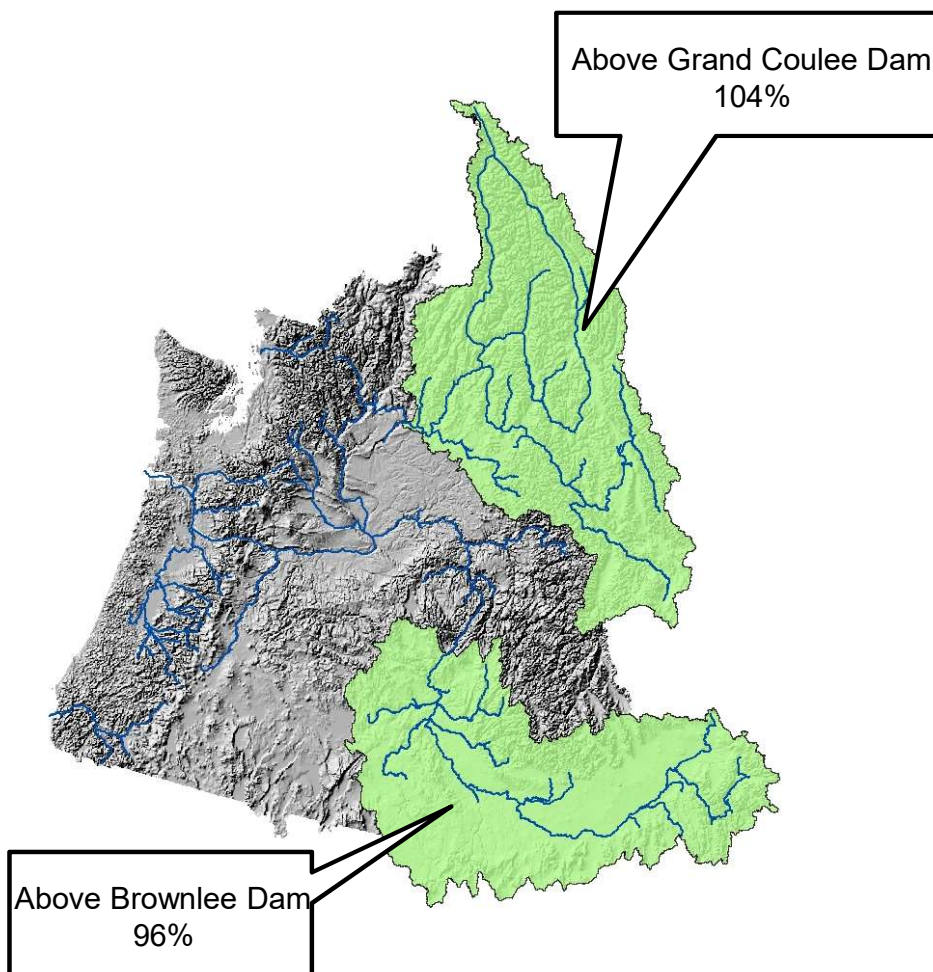
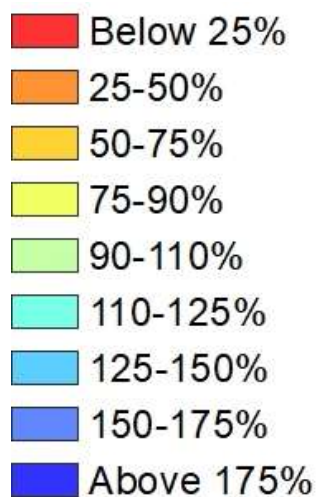
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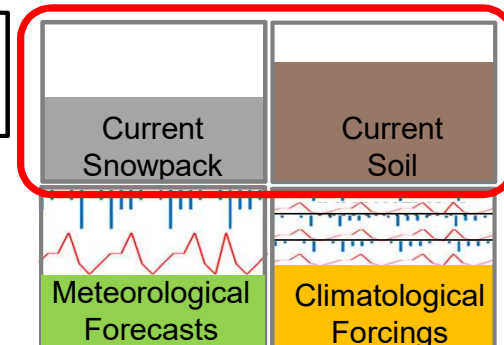
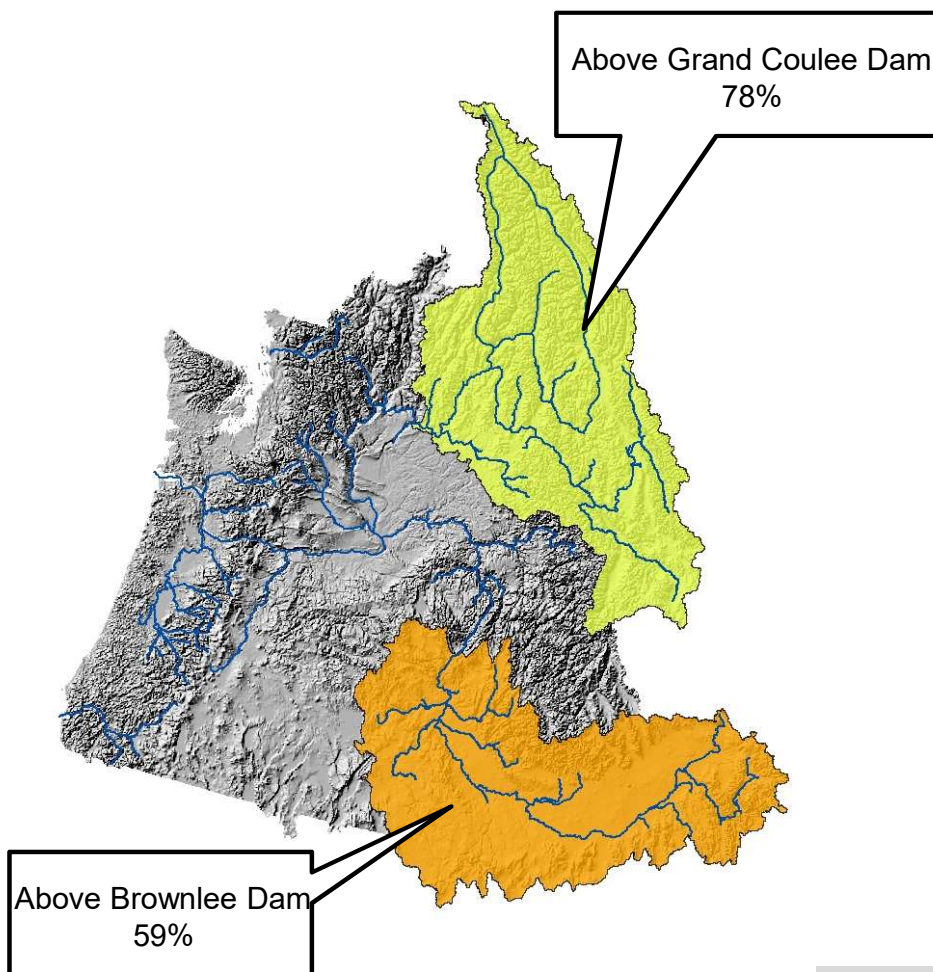
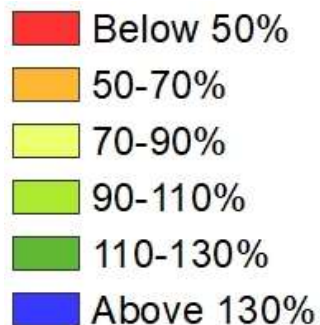
Percent of Normal





Water Supply Component (WY Precipitation)

Percent of Normal

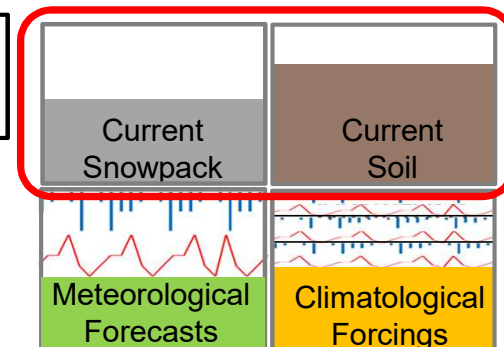
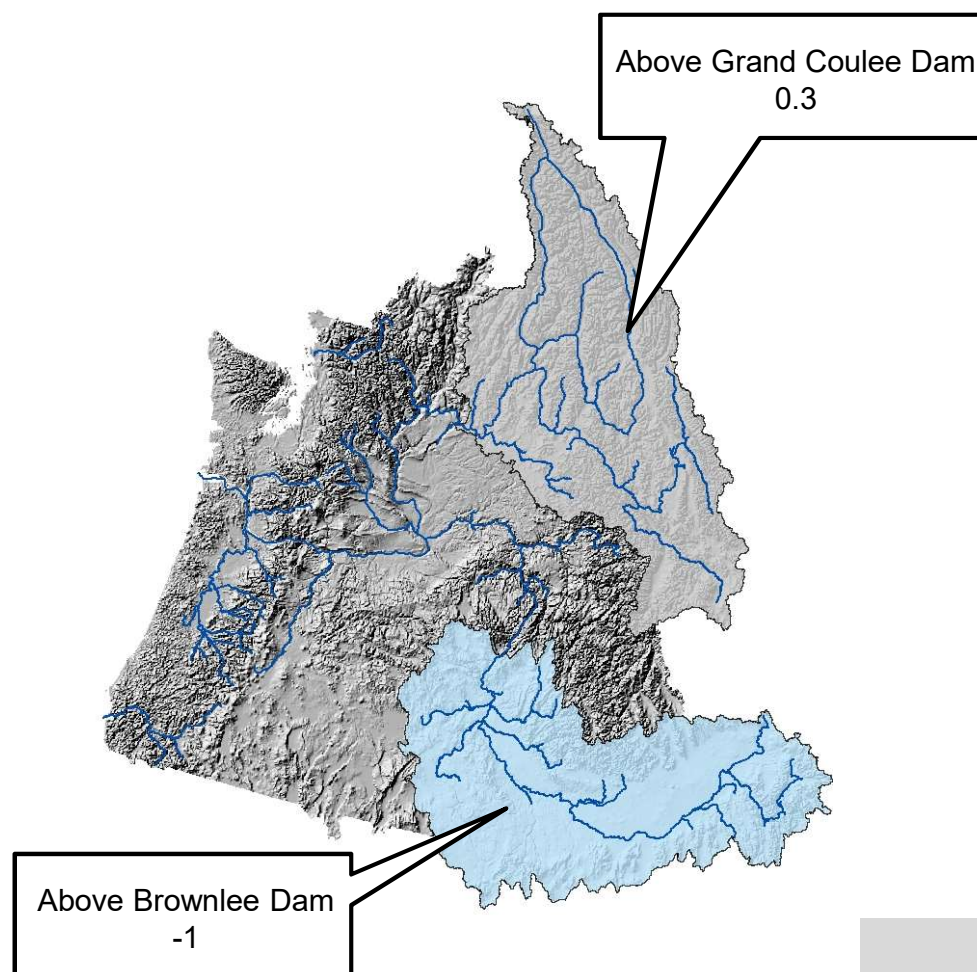
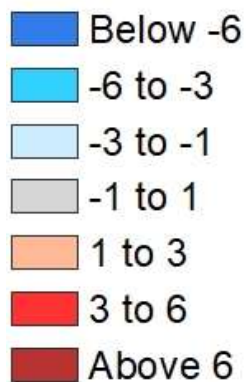


WY: Water Year



Water Supply Component (WY Temperature)

Deviation (DegF)

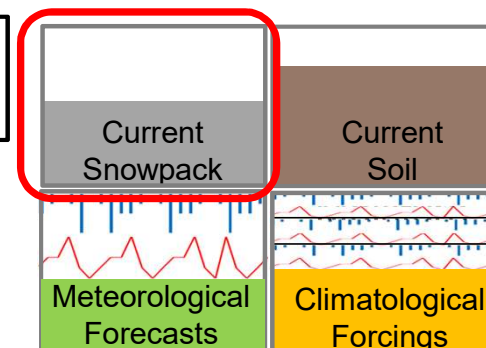
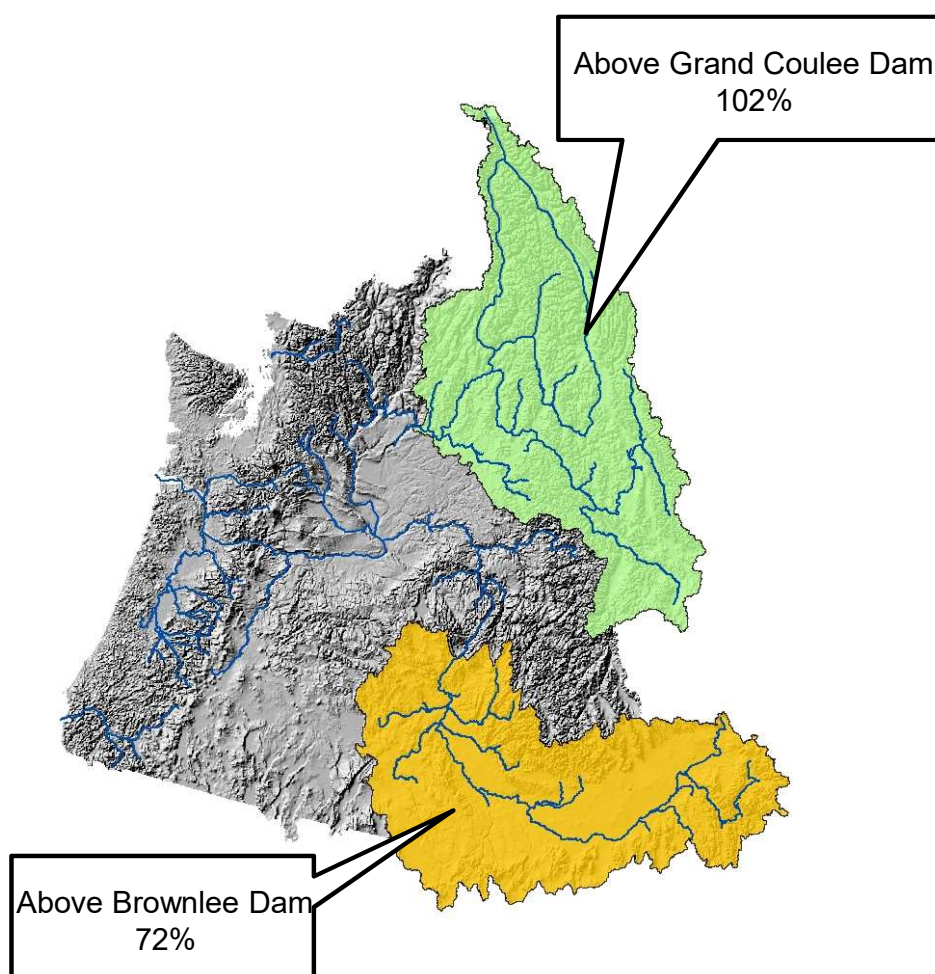
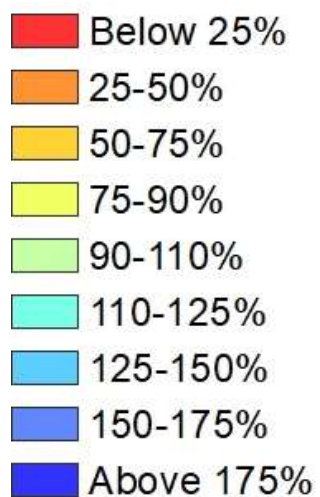


WY
Water Year



Water Supply Component (Snowpack)

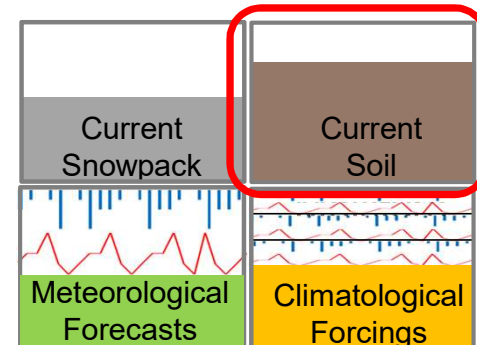
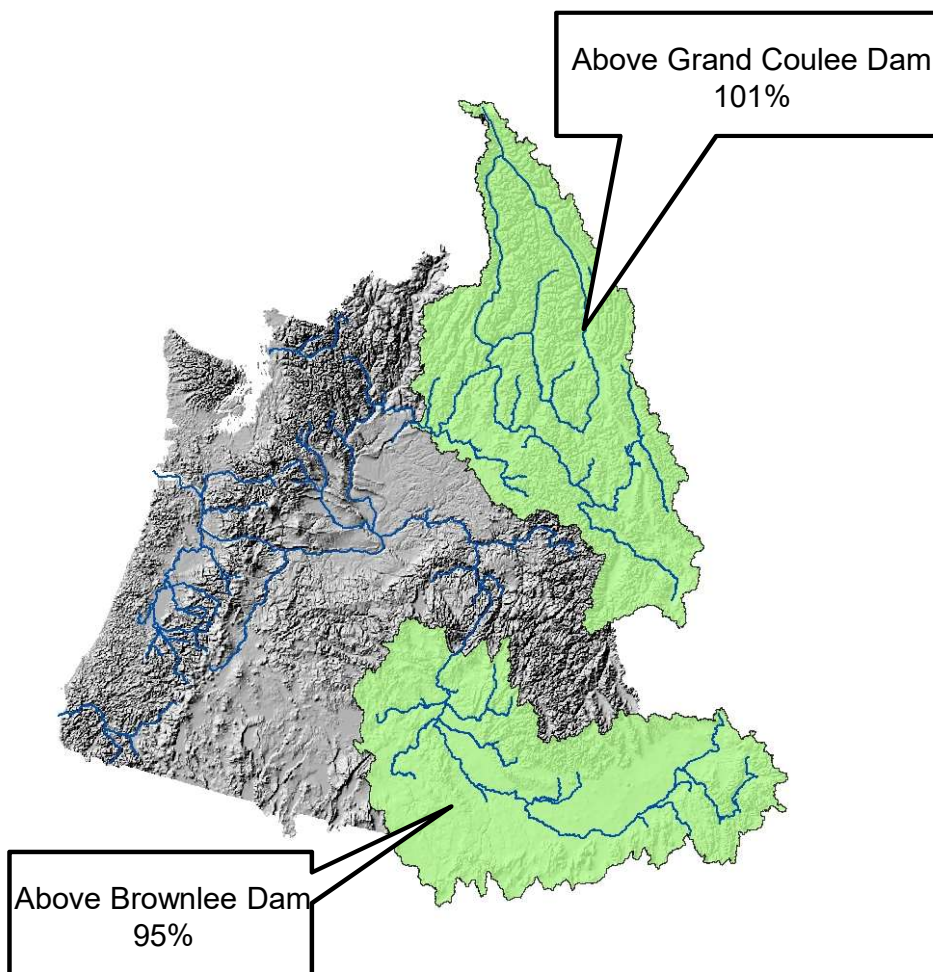
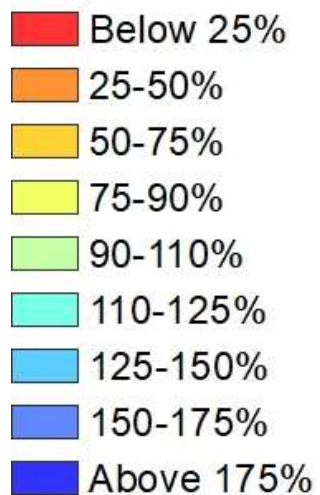
Percent of Normal





Water Supply Component (Soil)

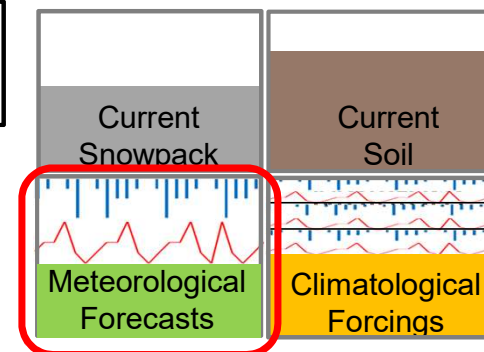
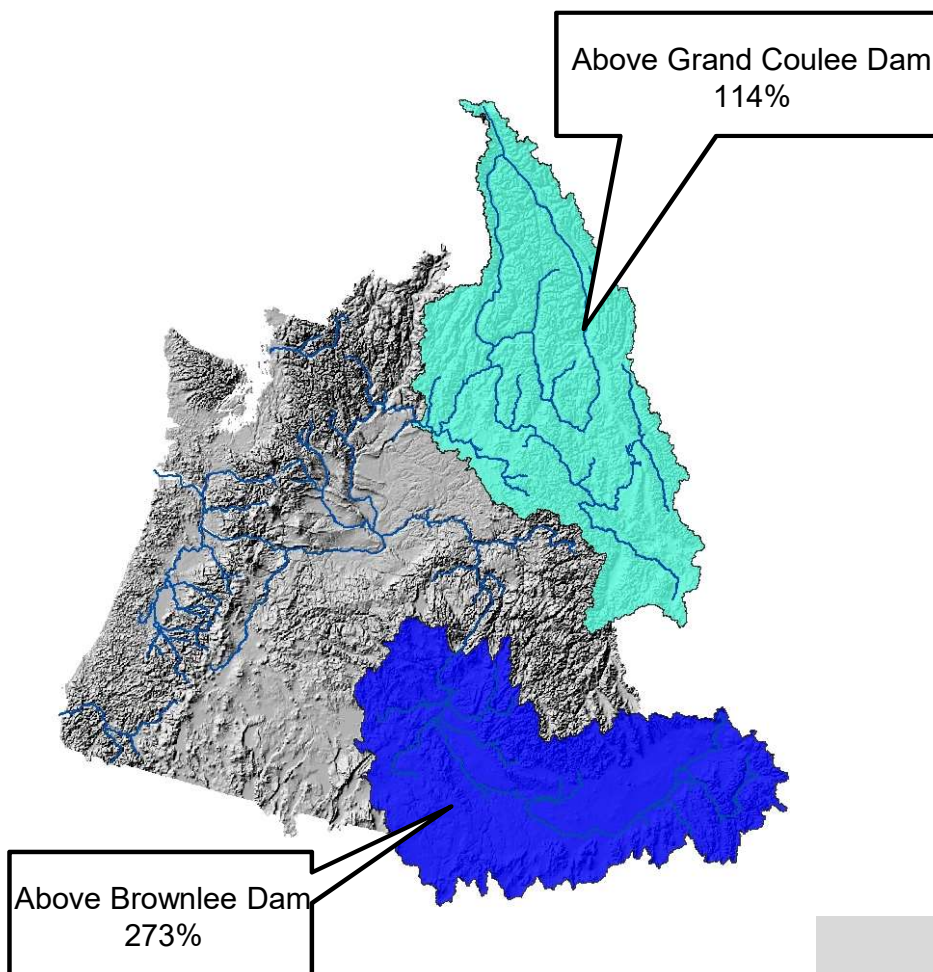
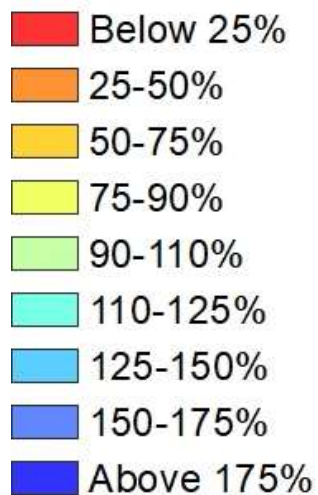
Percent of Normal





Water Supply Component (10 Day QPF)

Percent of Climatology

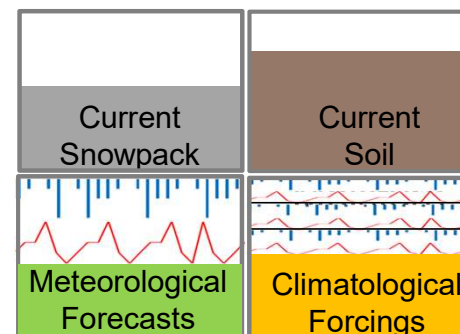
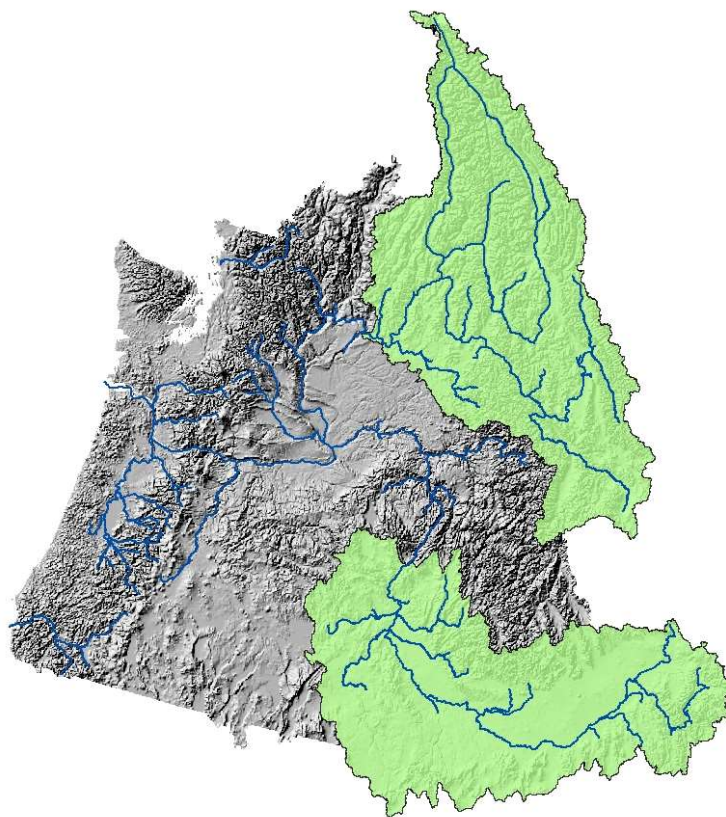
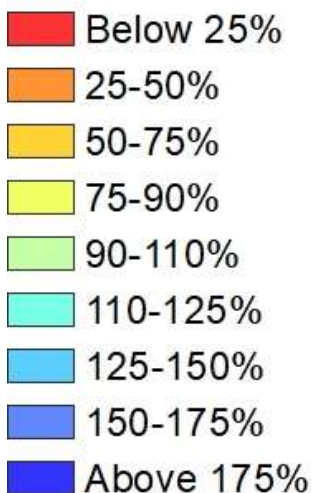


QPF
Quantitative Precipitation Forecast



April-September Water Supply Forecasts

Percent of Normal



Notes

- Water supply forecasts near normal
- Antecedent conditions:
SWE low in Snake Basins
Soils near normal
- 10 day QPF buoying water supply forecast above Brownlee Dam



Water Supply Forecast Briefing Outline

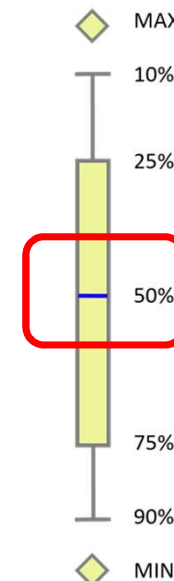
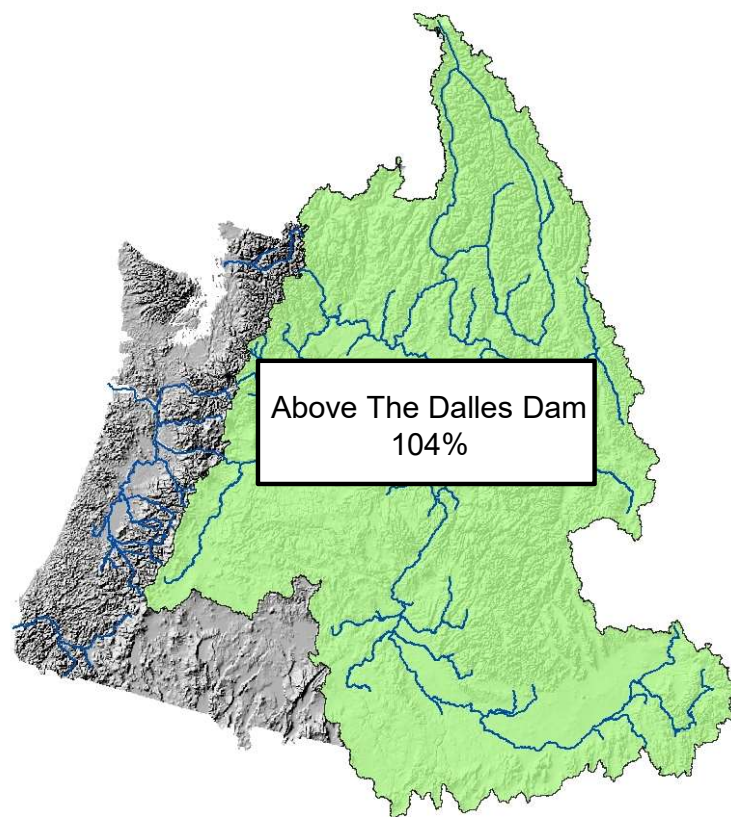
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Percent of Normal

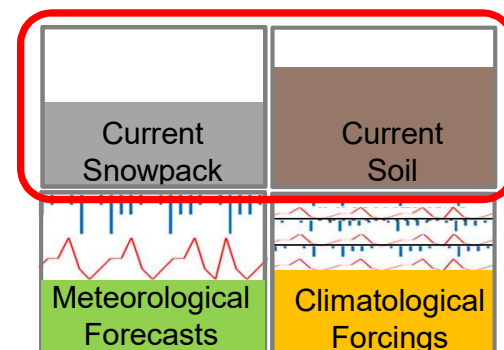
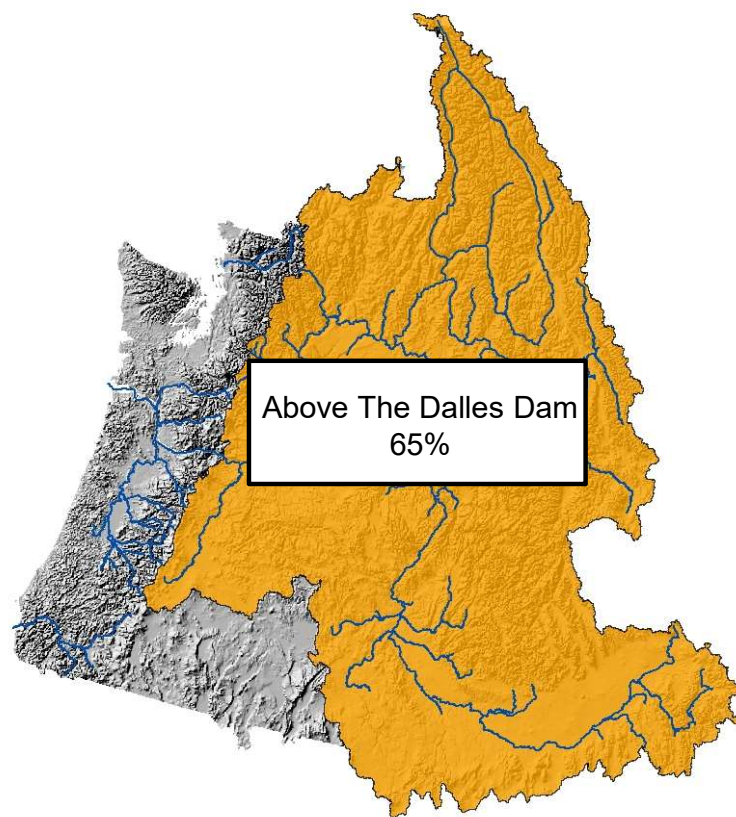
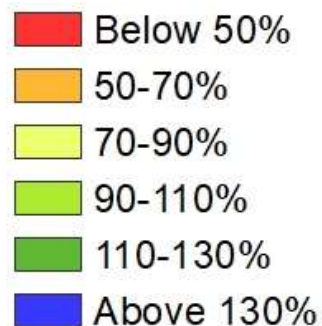
- Below 25%
- 25-50%
- 50-75%
- 75-90%
- 90-110%
- 110-125%
- 125-150%
- 150-175%
- Above 175%





Water Supply Component (WY Precipitation)

Percent of Normal

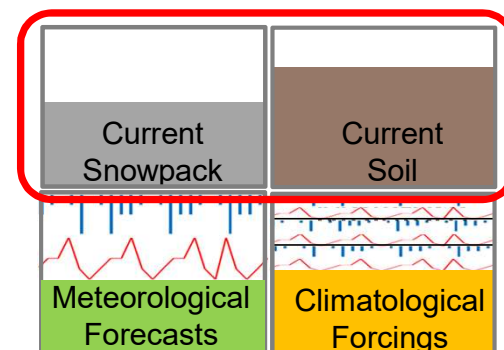
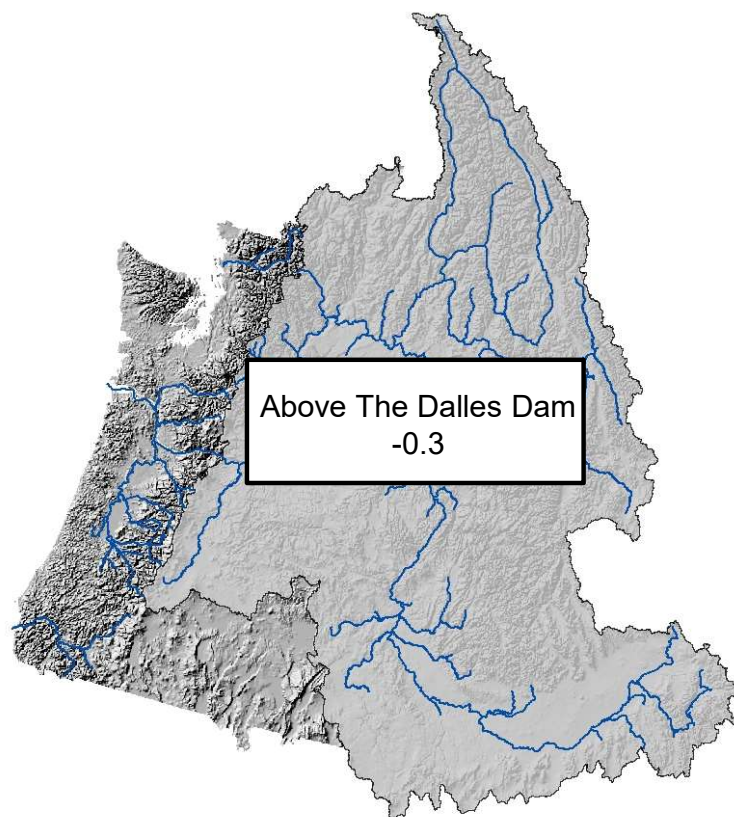
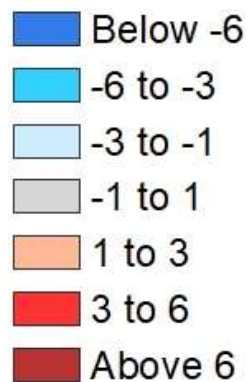


WY: Water Year



Water Supply Component (WY Temperature)

Deviation (DegF)

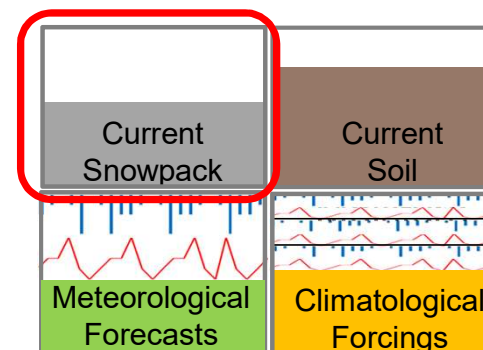
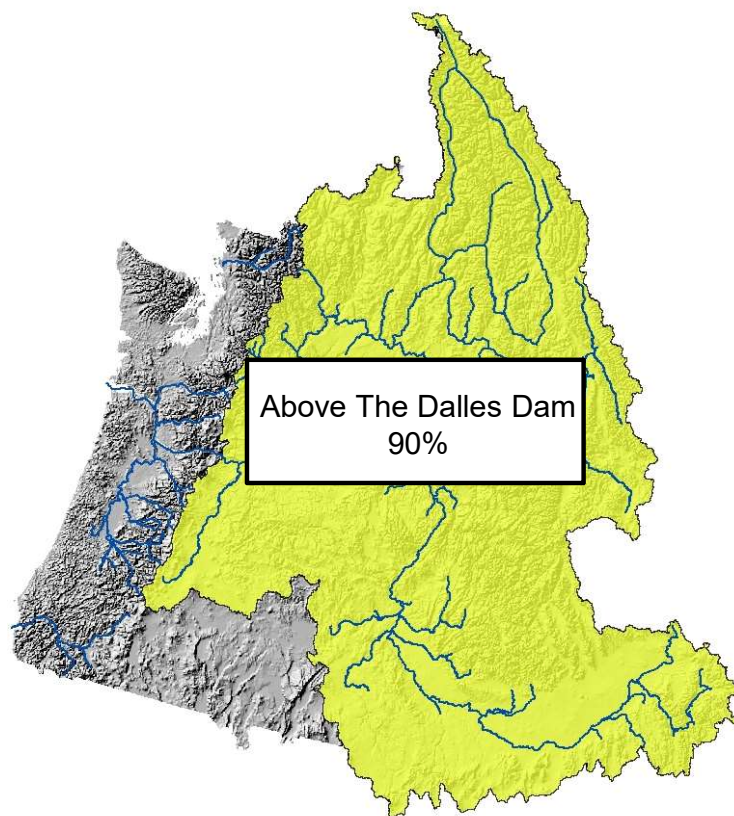
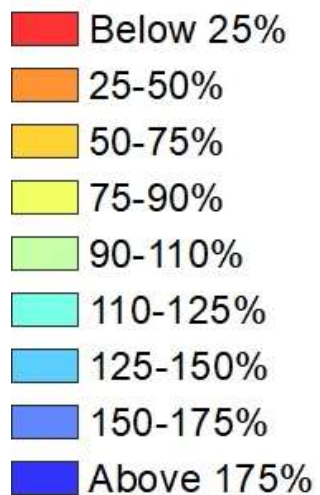


WY
Water Year



Water Supply Component (Snowpack)

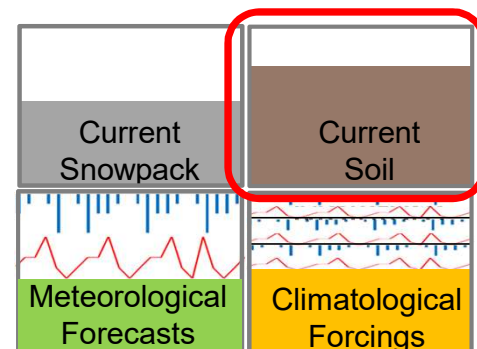
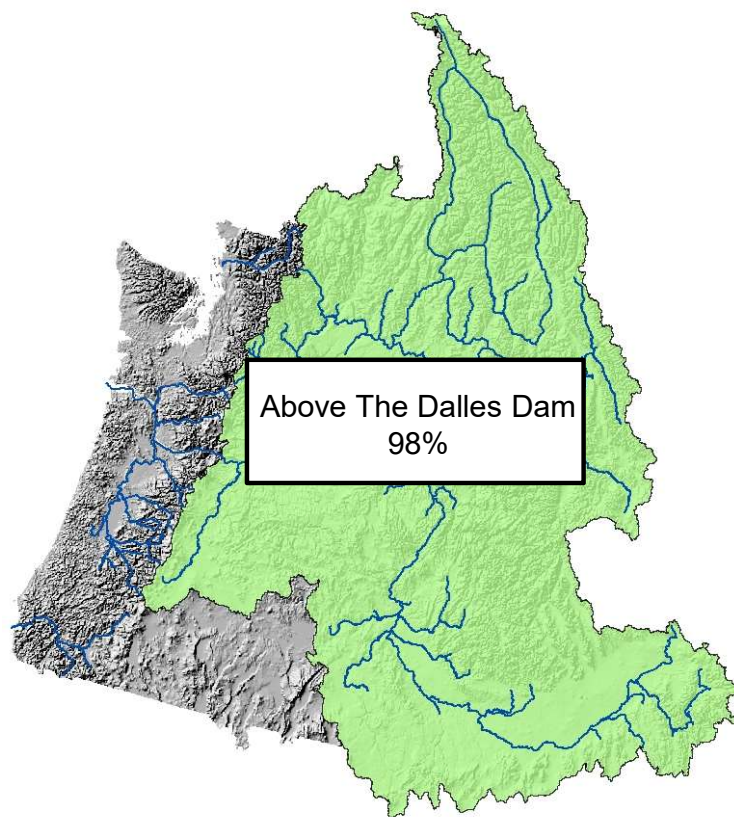
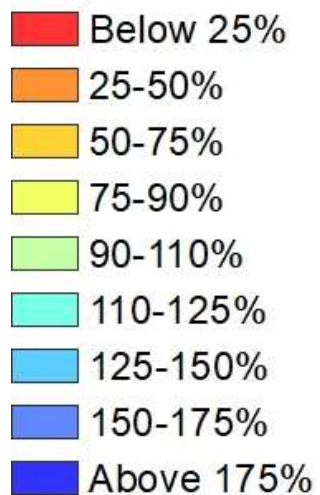
Percent of Normal





Water Supply Component (Soil)

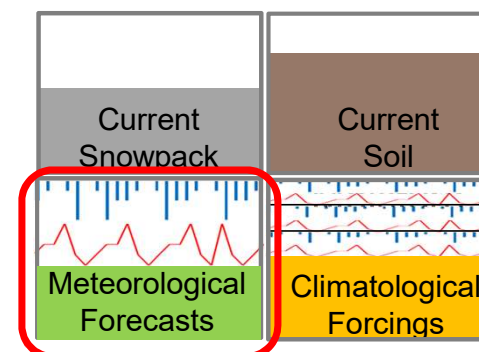
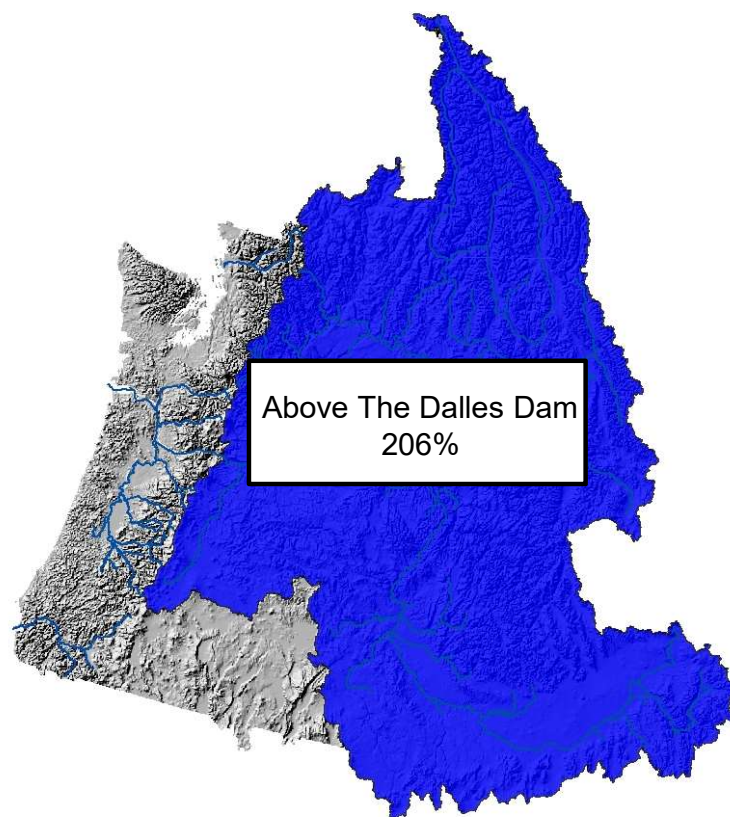
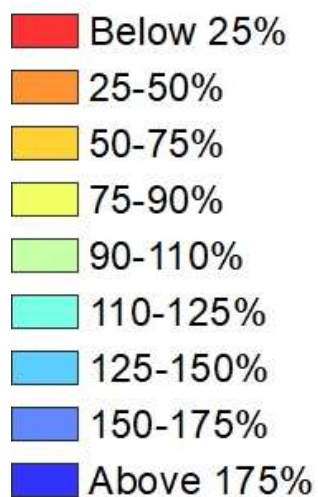
Percent of Normal





Water Supply Component (10 Day QPF)

Percent of Climatology

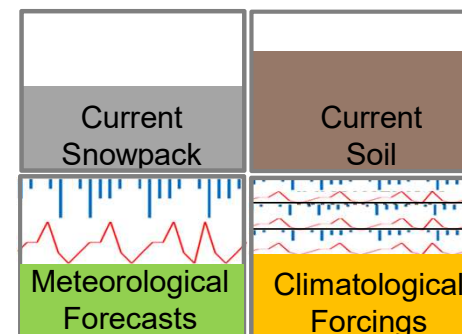
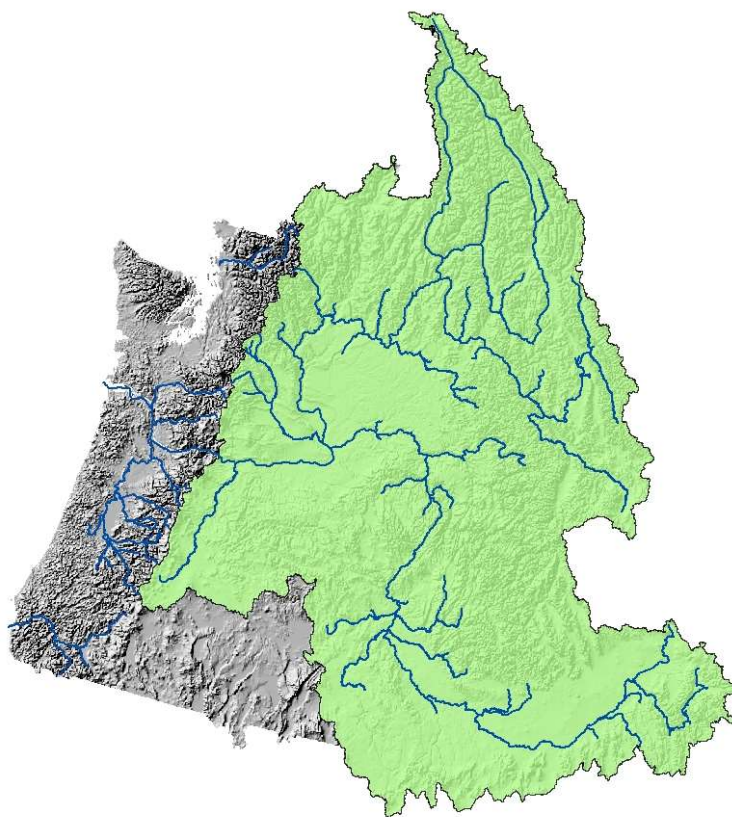
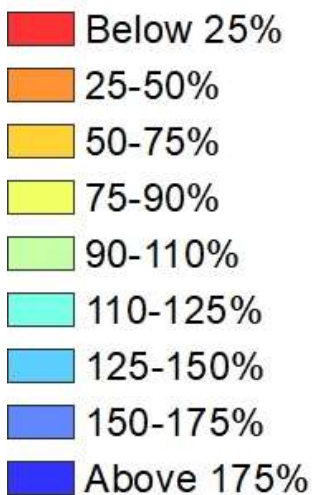


QPF
Quantitative Precipitation Forecast



April-September Water Supply Forecasts

Percent of Normal



Notes

-Water supply forecasts slightly above normal

-Antecedent conditions:
SWE slightly below normal
Soil near normal

-10 day QPF buoying water supply forecasts



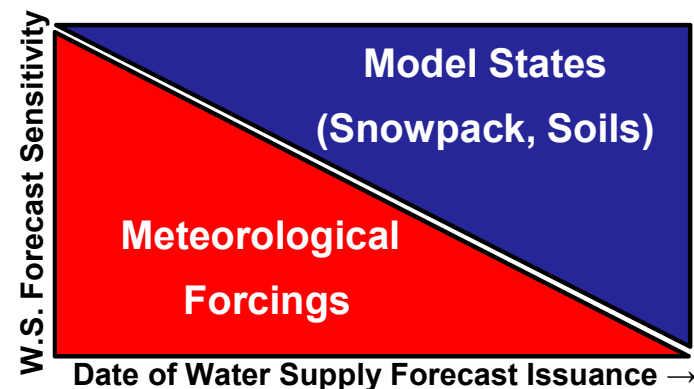
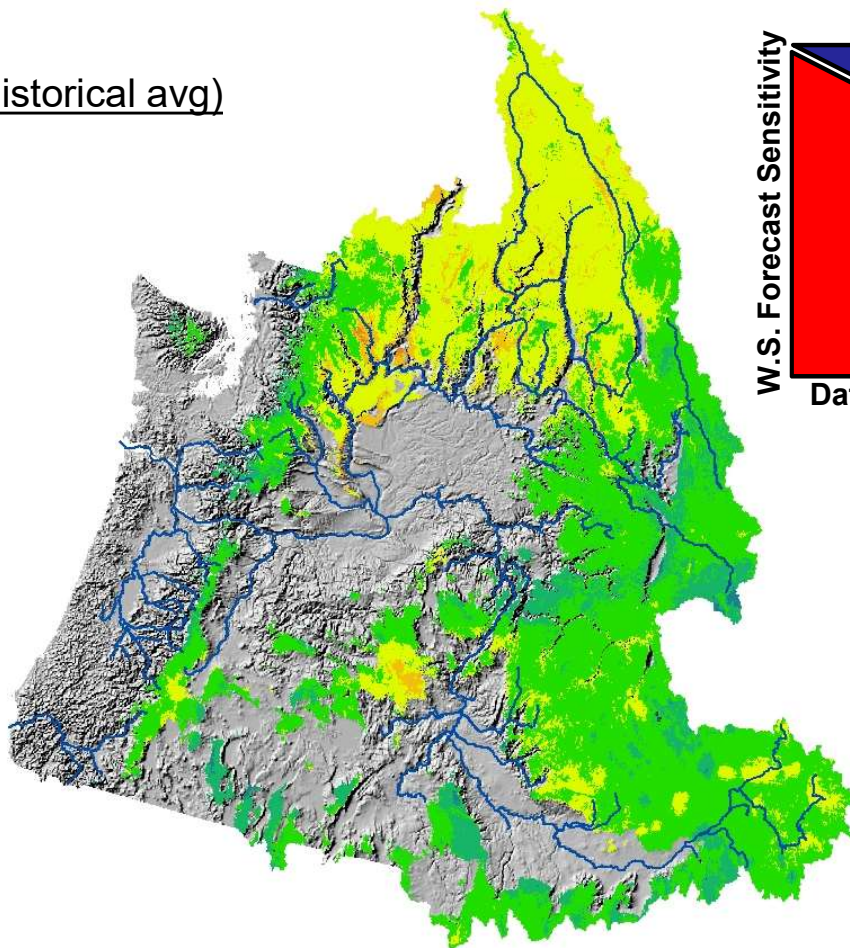
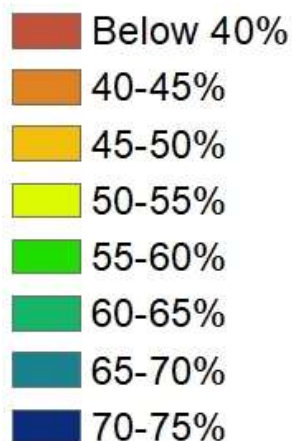
Water Supply Forecast Briefing Outline

- Meteorological/hydrological observations WY2020
- 10 day NWRFC precipitation forecast
- NWRFC water supply forecast refresher
- Current water supply forecasts and model states
 - Select local regions
 - Above Grand Coulee and Brownlee Dam
 - Above The Dalles Dam
- Chalk talk: Critical snow building months
- Summary



Chalk Talk: Critical Snow Building Months

% SWE contribution Jan-Mar (historical avg)



Historical (WY1981-2017) percent SWE contribution from Jan, Feb, Mar to the Nov-Mar period



Water Supply Forecast Briefing Outline

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Water Supply Forecast Briefing Summary

- Below normal observed precipitation and snowpack
- 10 day forecast calls for well above normal seasonal precipitation
- April-September Water supply forecasts are near normal at The Dalles
- Current model antecedent SWE is below normal, outside of the Upper Columbia
- Above normal forecast precipitation is driving water supply forecast upward in southern half of NWRFC region
- Historically, on average, the remaining months accounts for greater than half of the winter snowpack building



Questions

In order to ask questions using your phone, you will need to enter the **AUDIO PIN** followed by the **#** sign using your phone keypad. The **AUDIO PIN** was provided when you logged into the webinar.

You will be muted until the presenter unmutes you. If you have a question, use the 'Raise Hand' function to let us know to unmute your phone.

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