



February 2019 Water Supply Briefing

National Weather Service / Northwest River Forecast Center

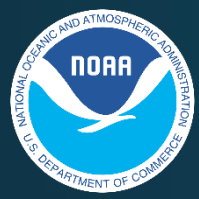


Telephone Conference : (415) 655-0060

Pass Code : 217-076-304#

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

Ryan Lucas, NWRFC
W-ptr.Webmaster@noaa.gov
(503)326-7291



Water Supply Forecast Briefing Outline



- Observed Conditions WY2019:

- Temperature
- Precipitation
- Snowpack
- Runoff

Model States

- Future Conditions:

- 10 days of quantitative forecast precipitation (QPF)
- 10 days of quantitative forecast temperature (QTF)
- Historical climate forcings appended thereafter
- Water Supply Forecasts

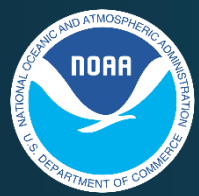
Model Forcings

Model Inputs

- Additional Guidance

- CPC Climate Outlook

- Summary



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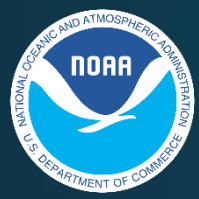
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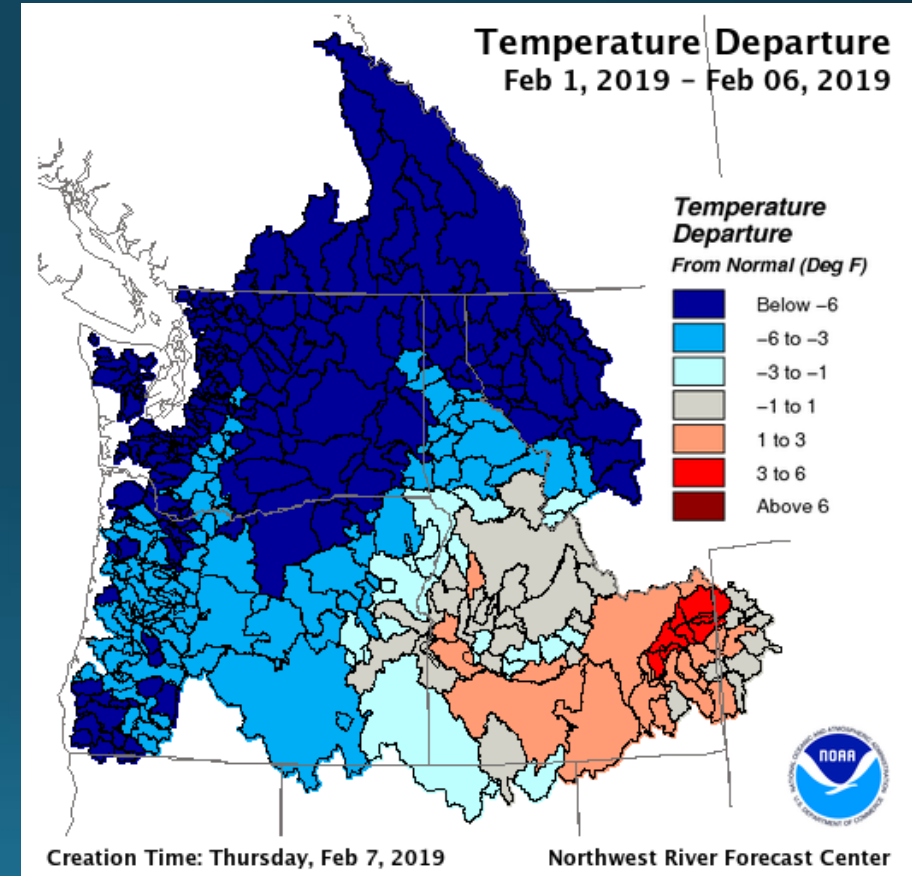
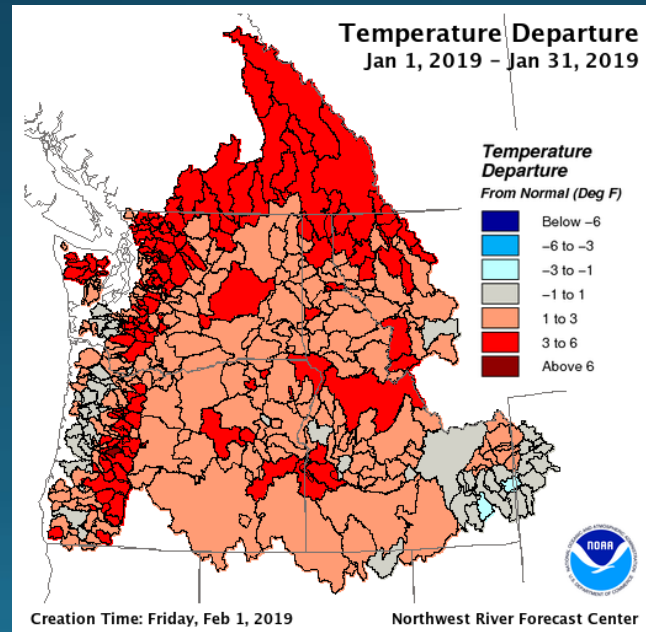
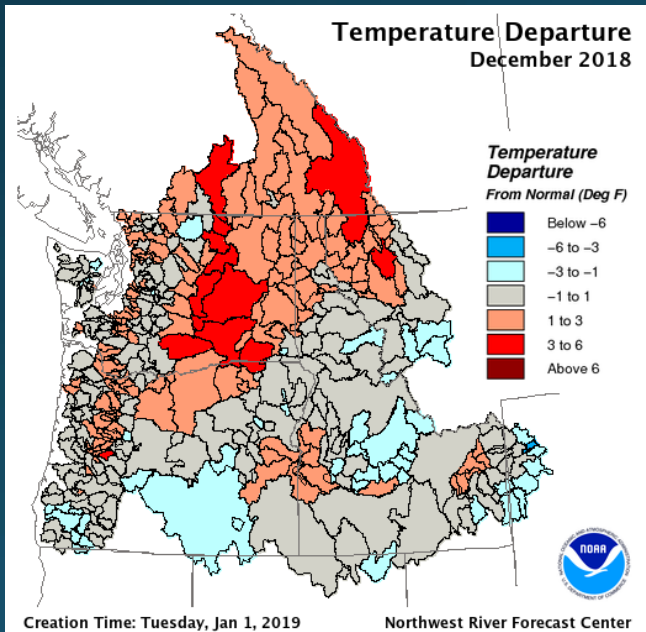
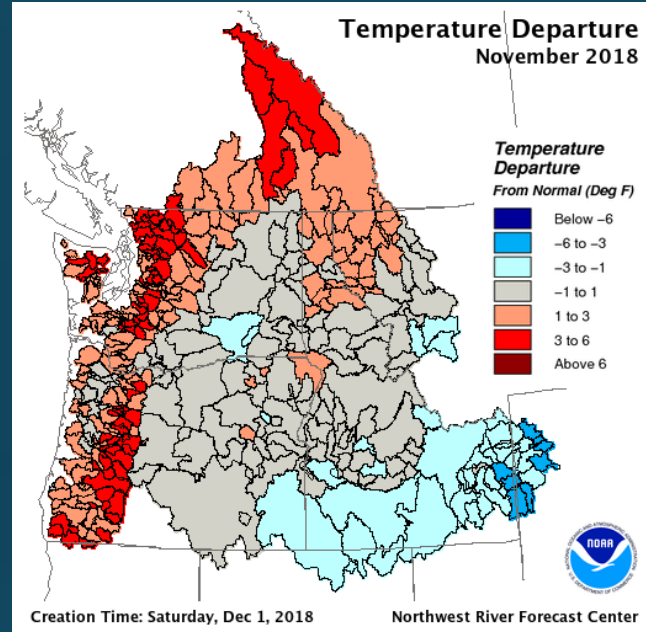
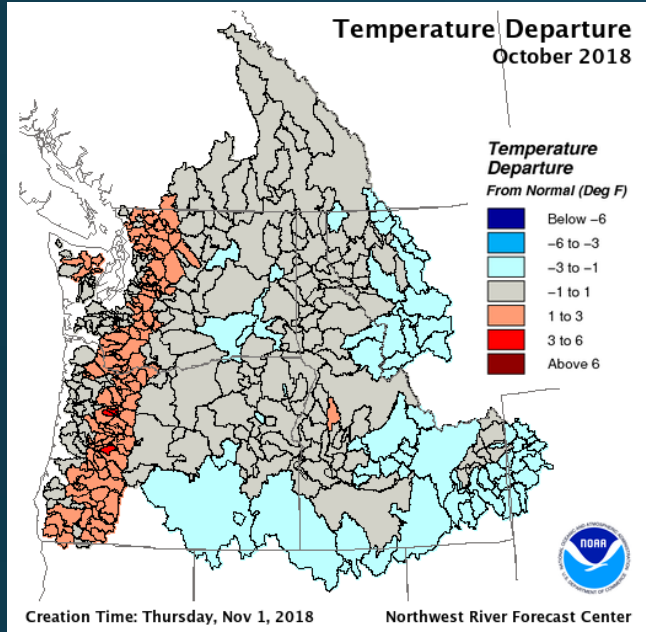
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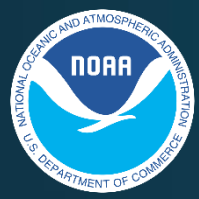
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Monthly Temperature Departure

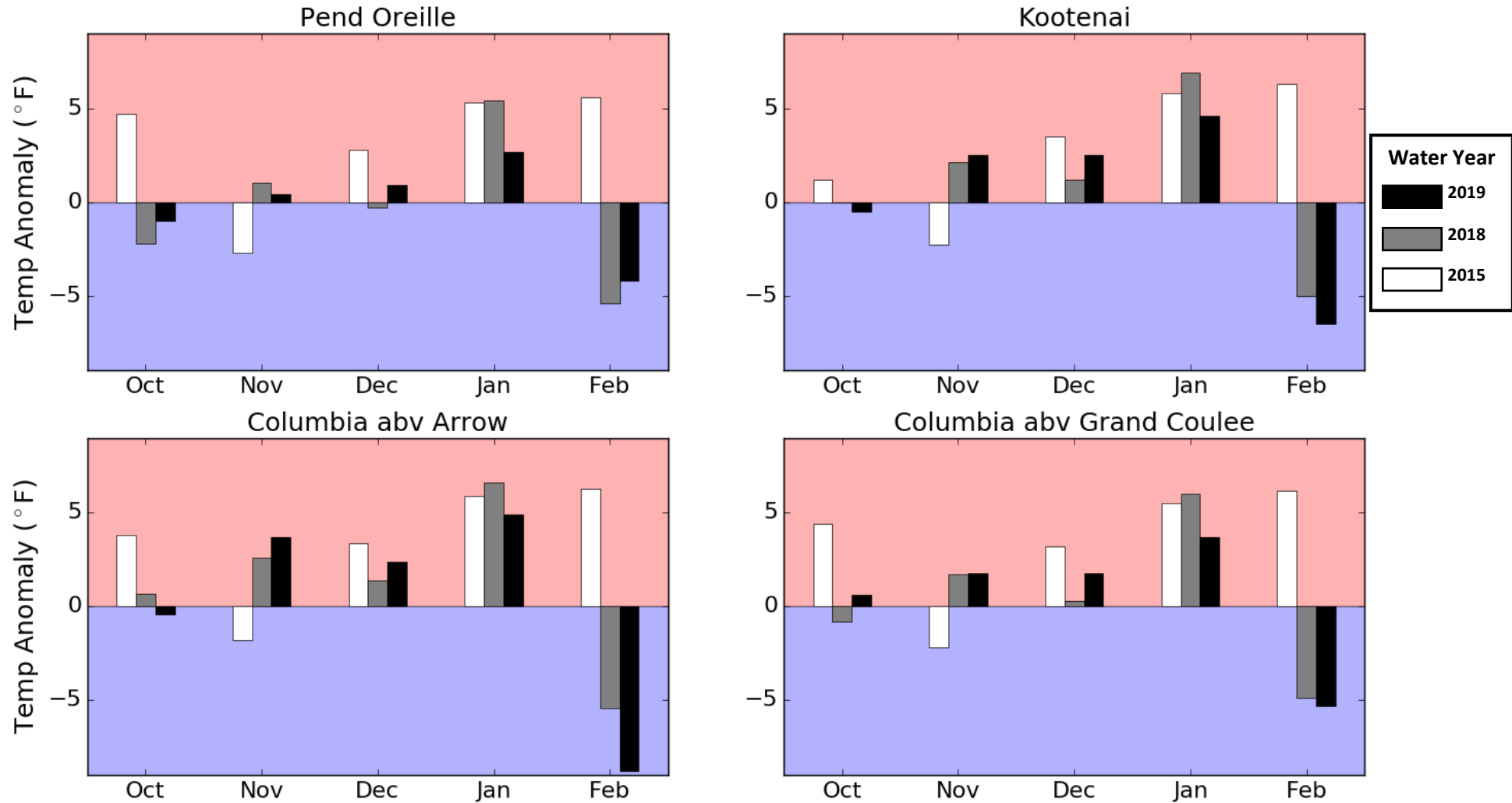


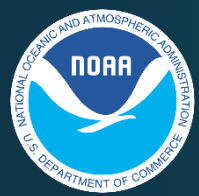


Monthly Temperature Anomaly



Upper Columbia

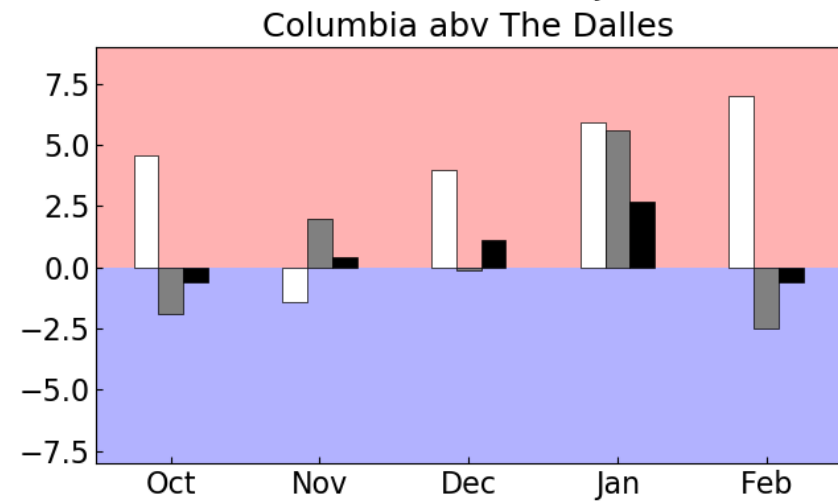
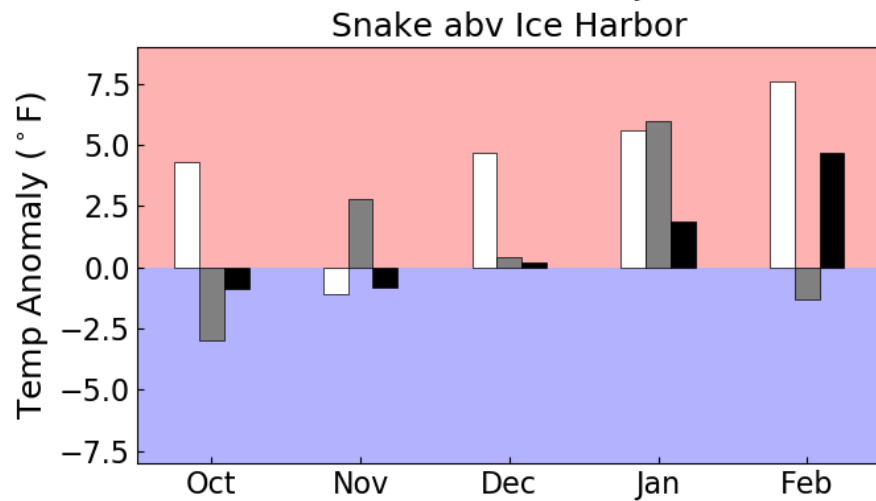
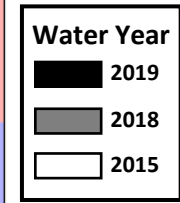
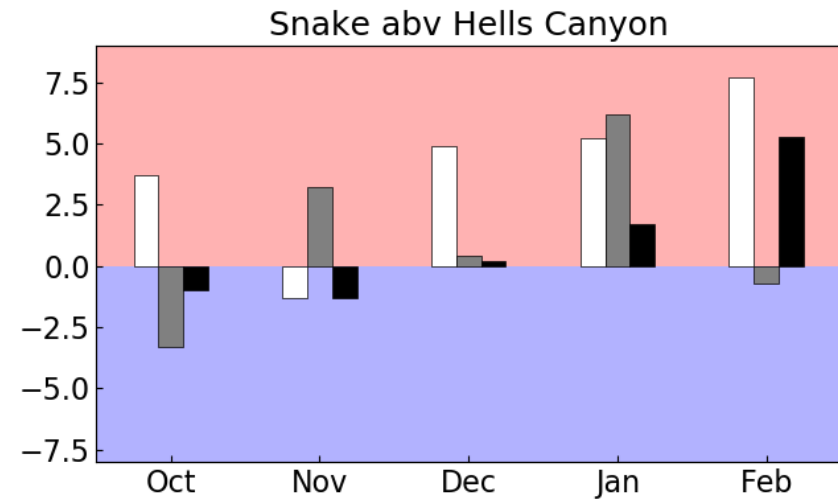
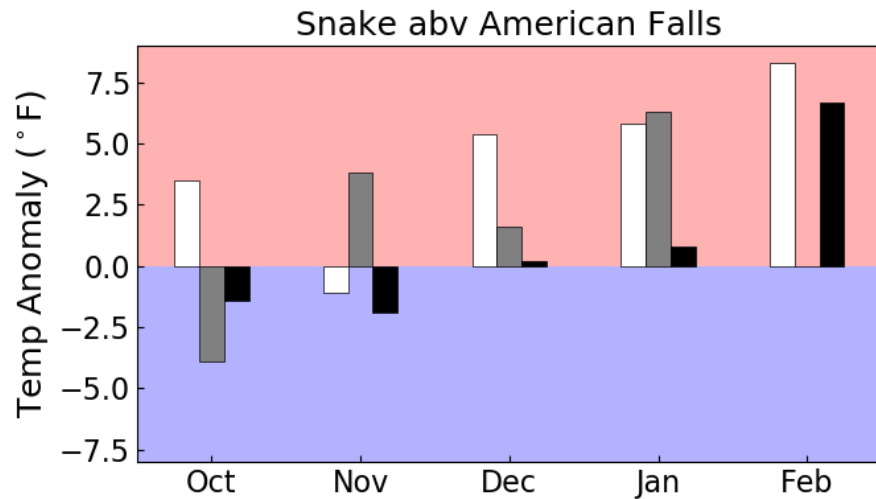


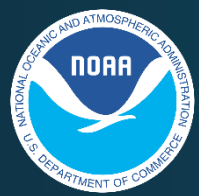


Monthly Temperature Anomaly



Snake River

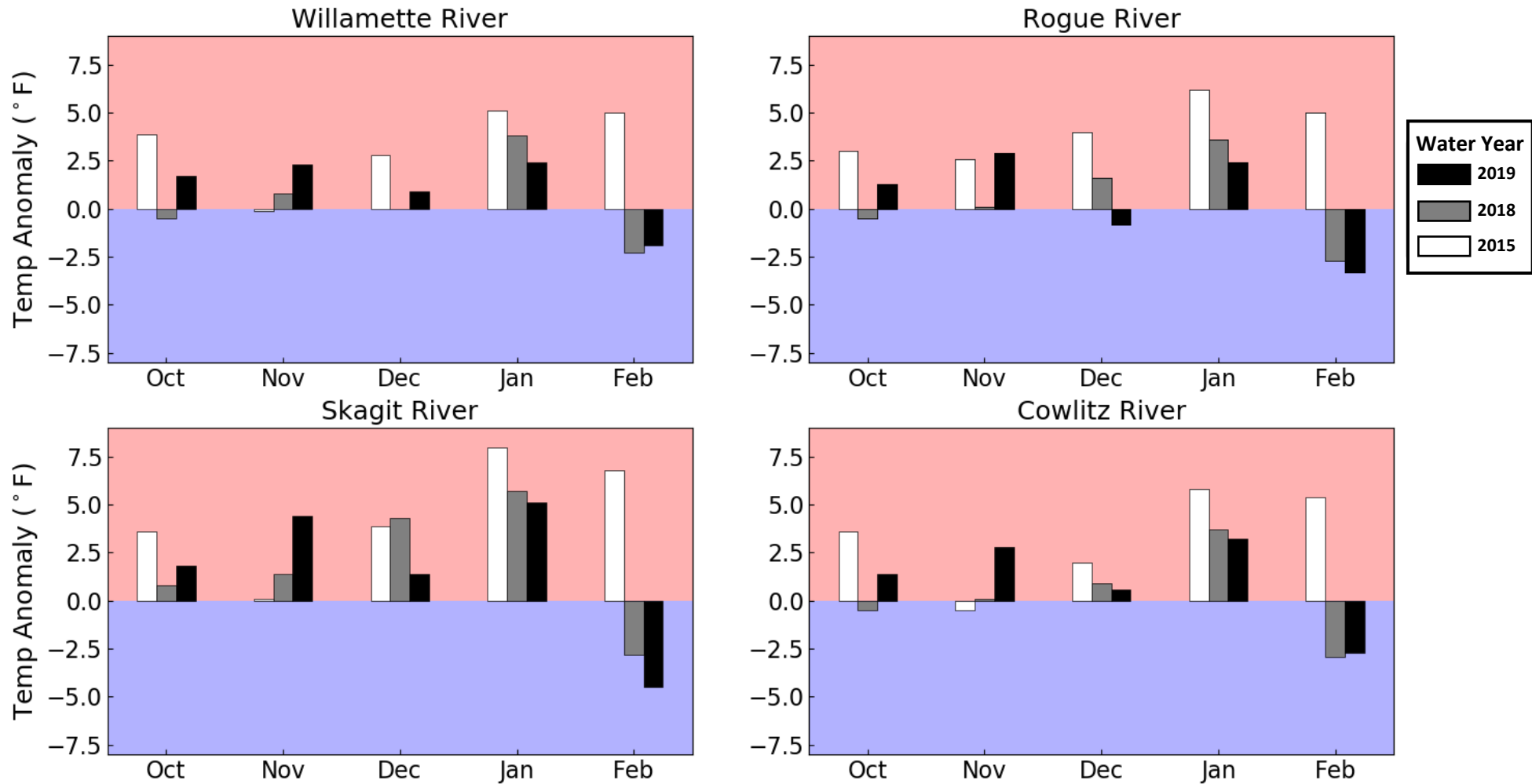




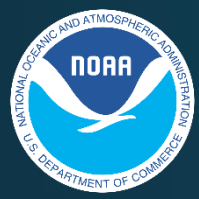
Monthly Temperature Anomaly



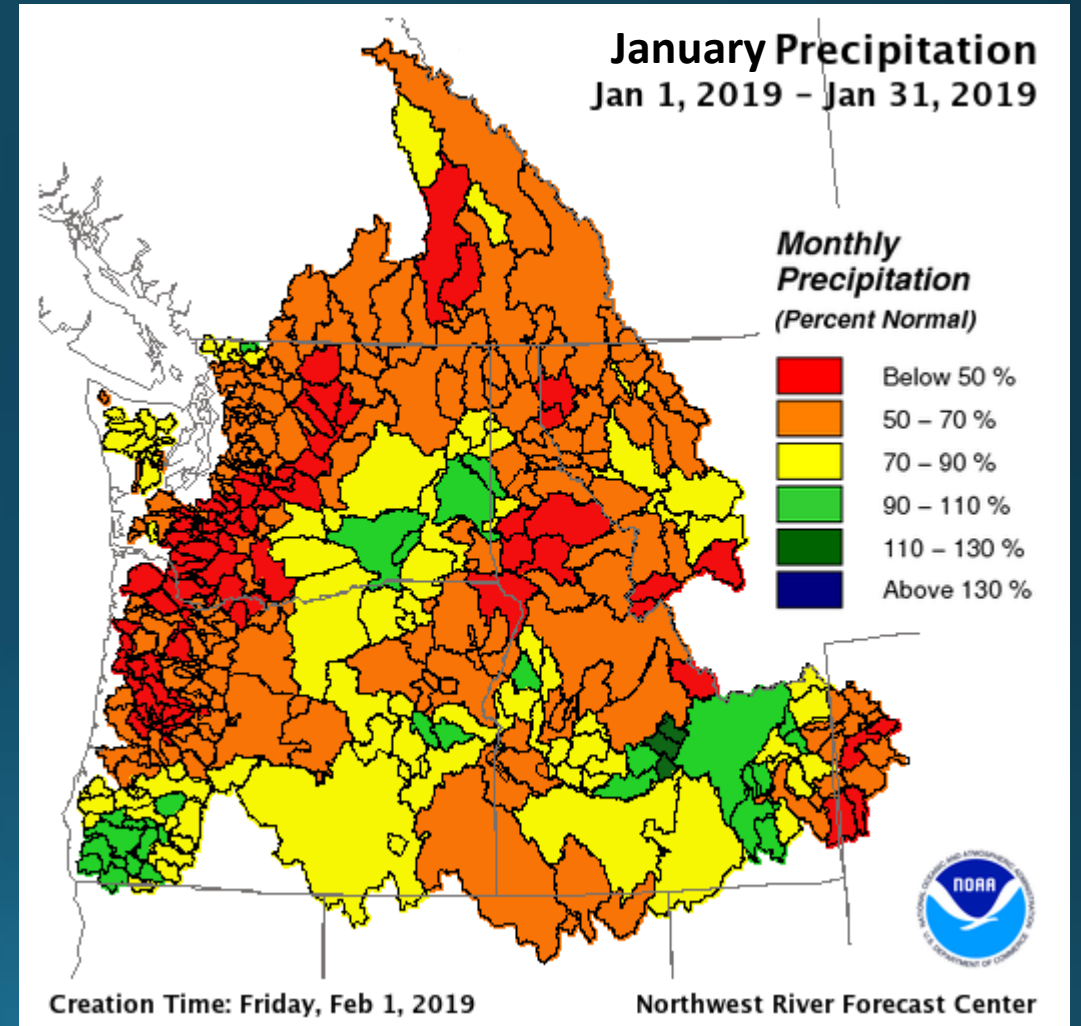
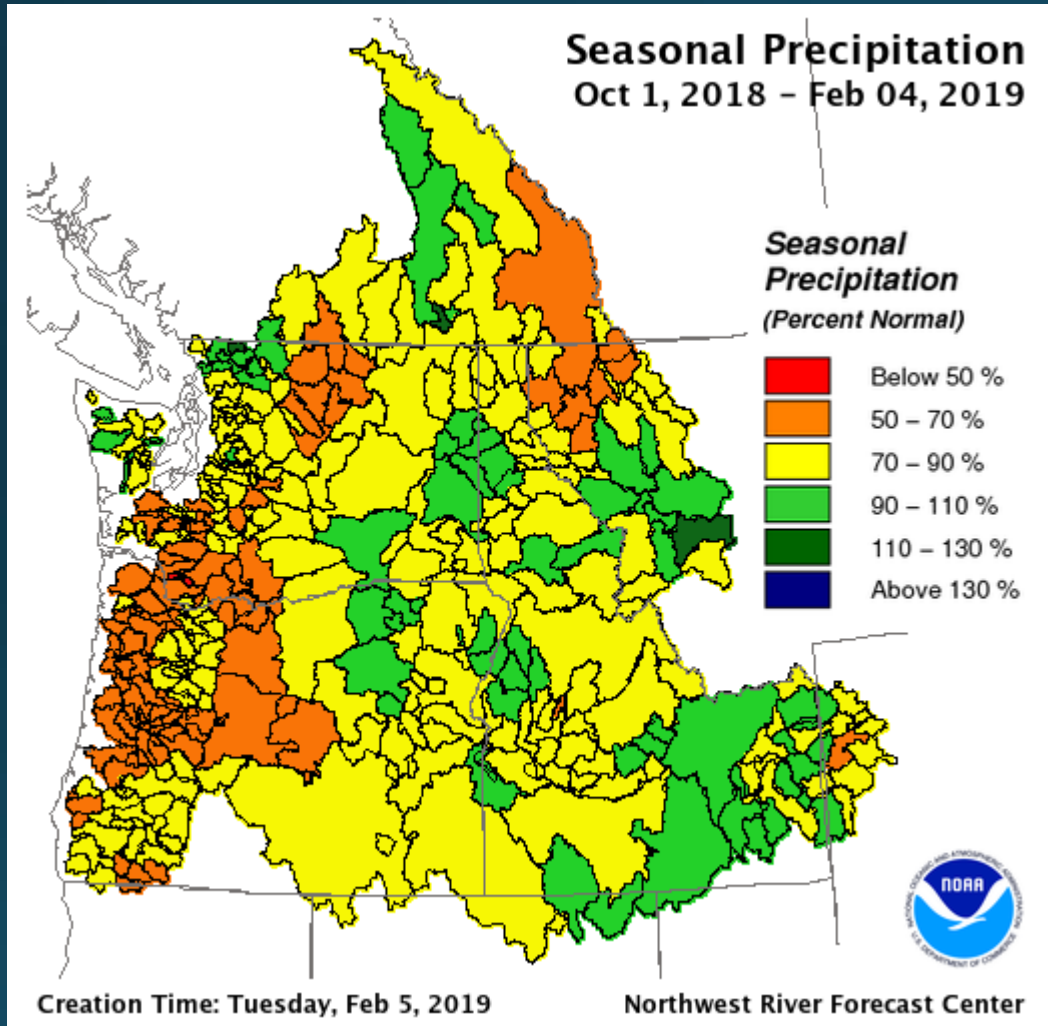
Westside Basins

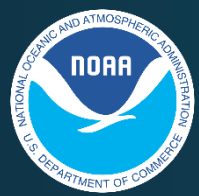


Data as of Feb. 6, 2019

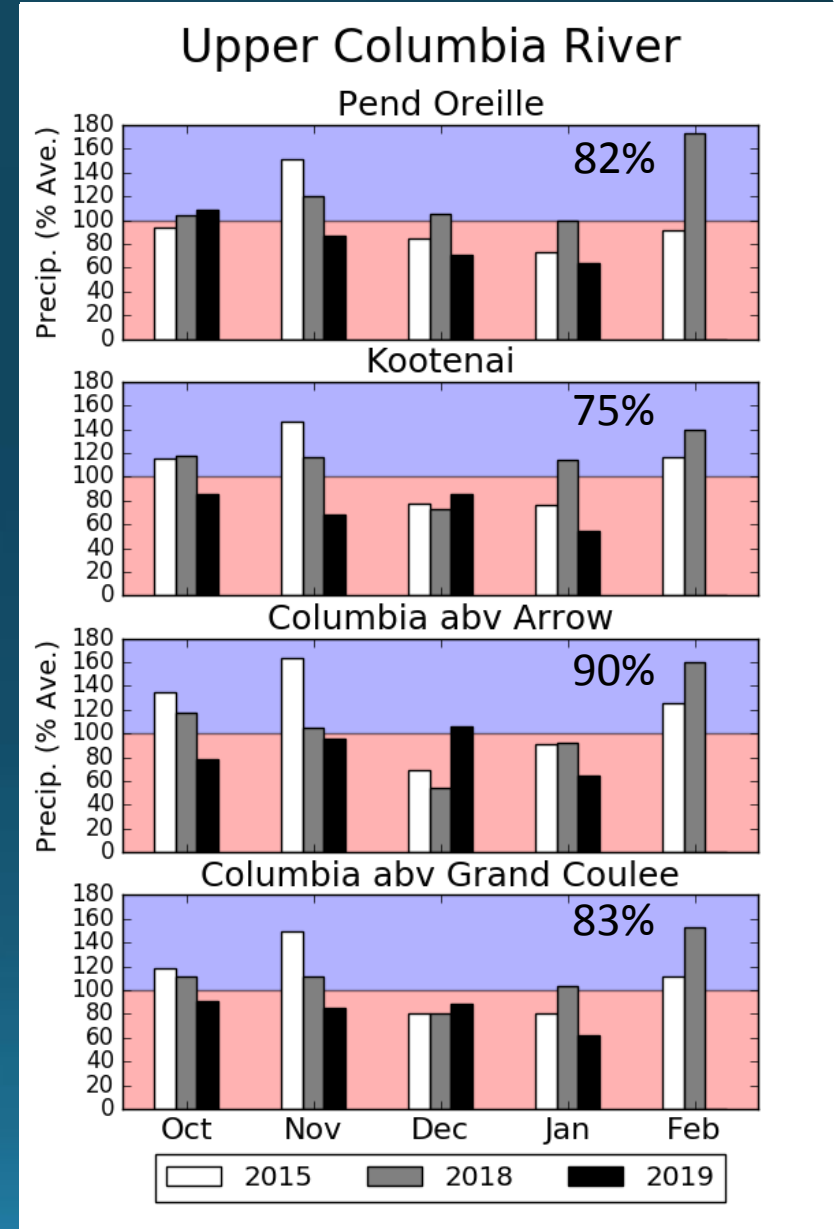
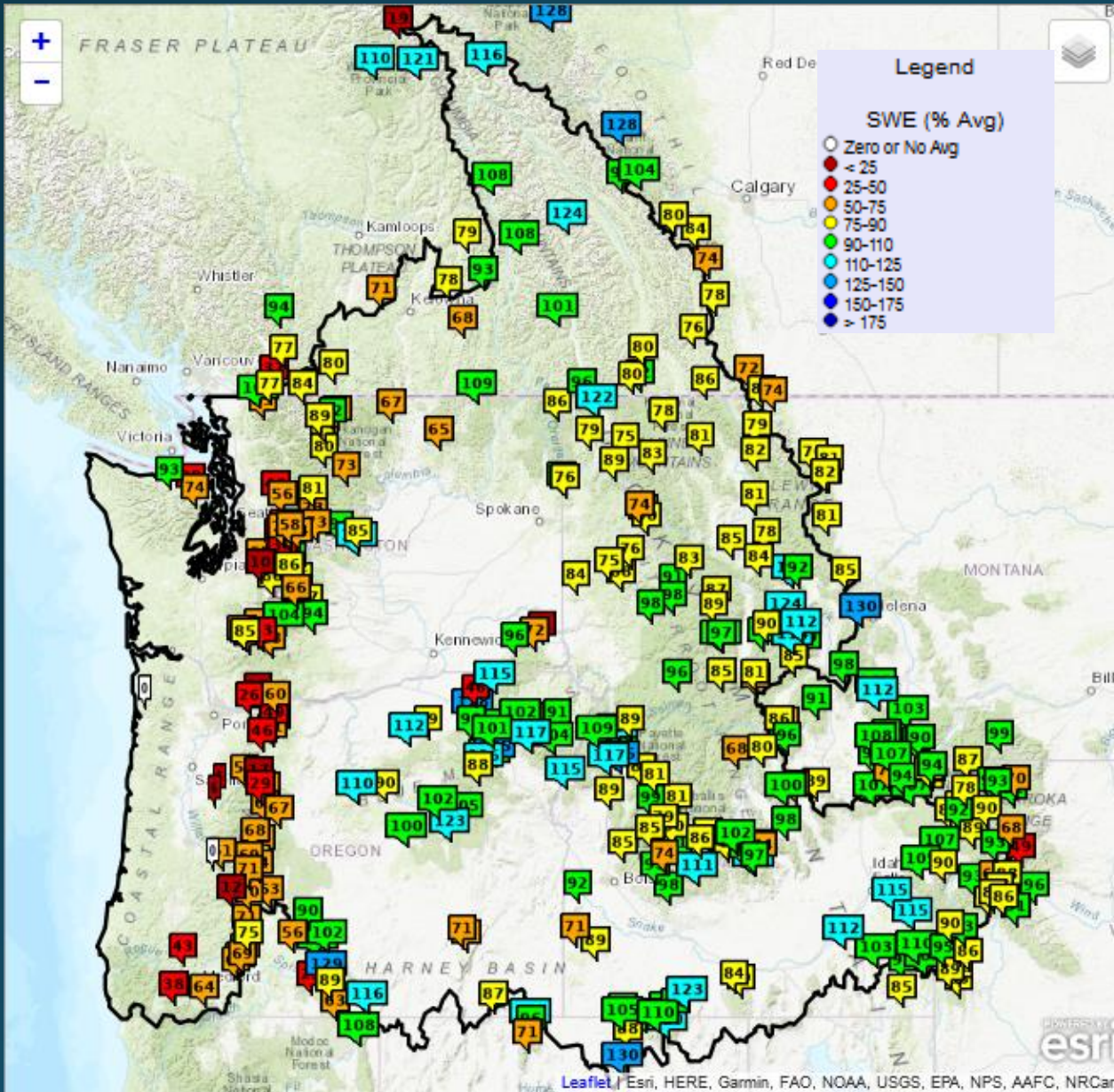


Observed % Normal Seasonal Precipitation

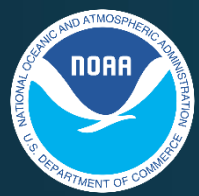




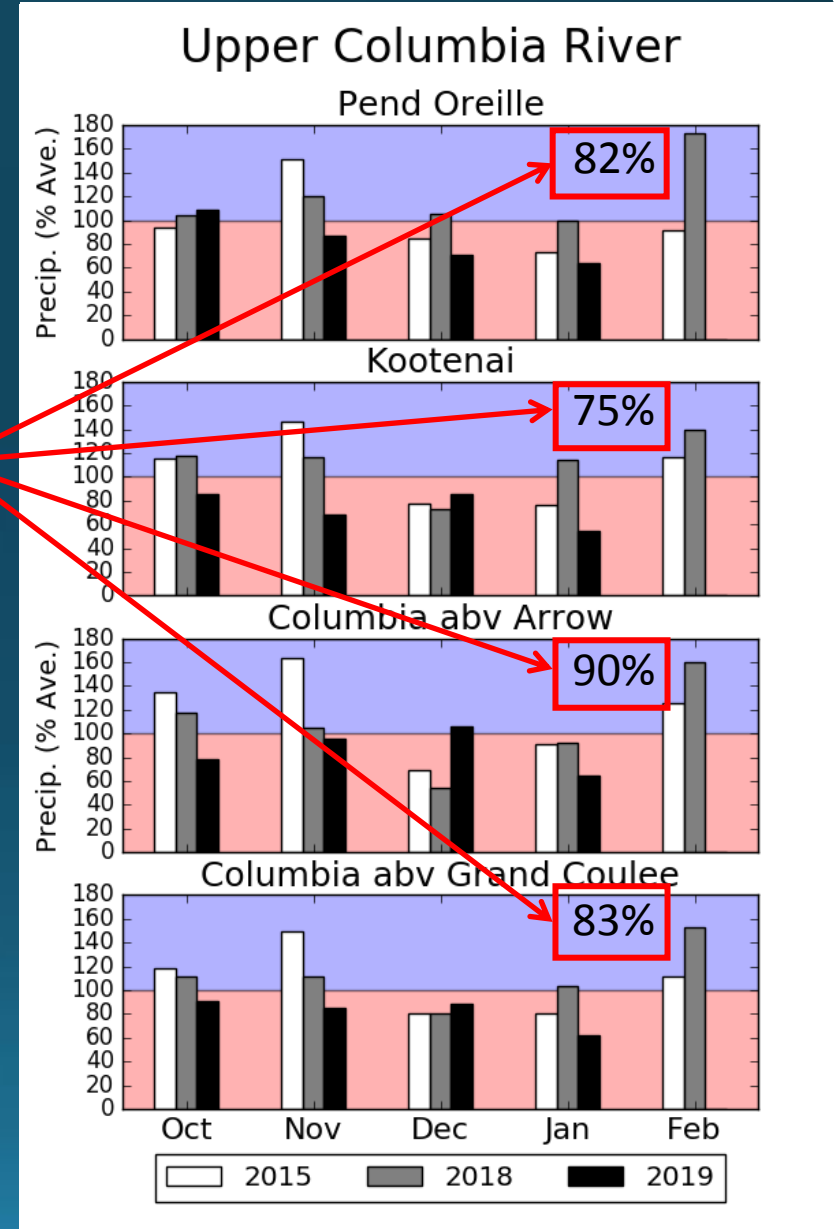
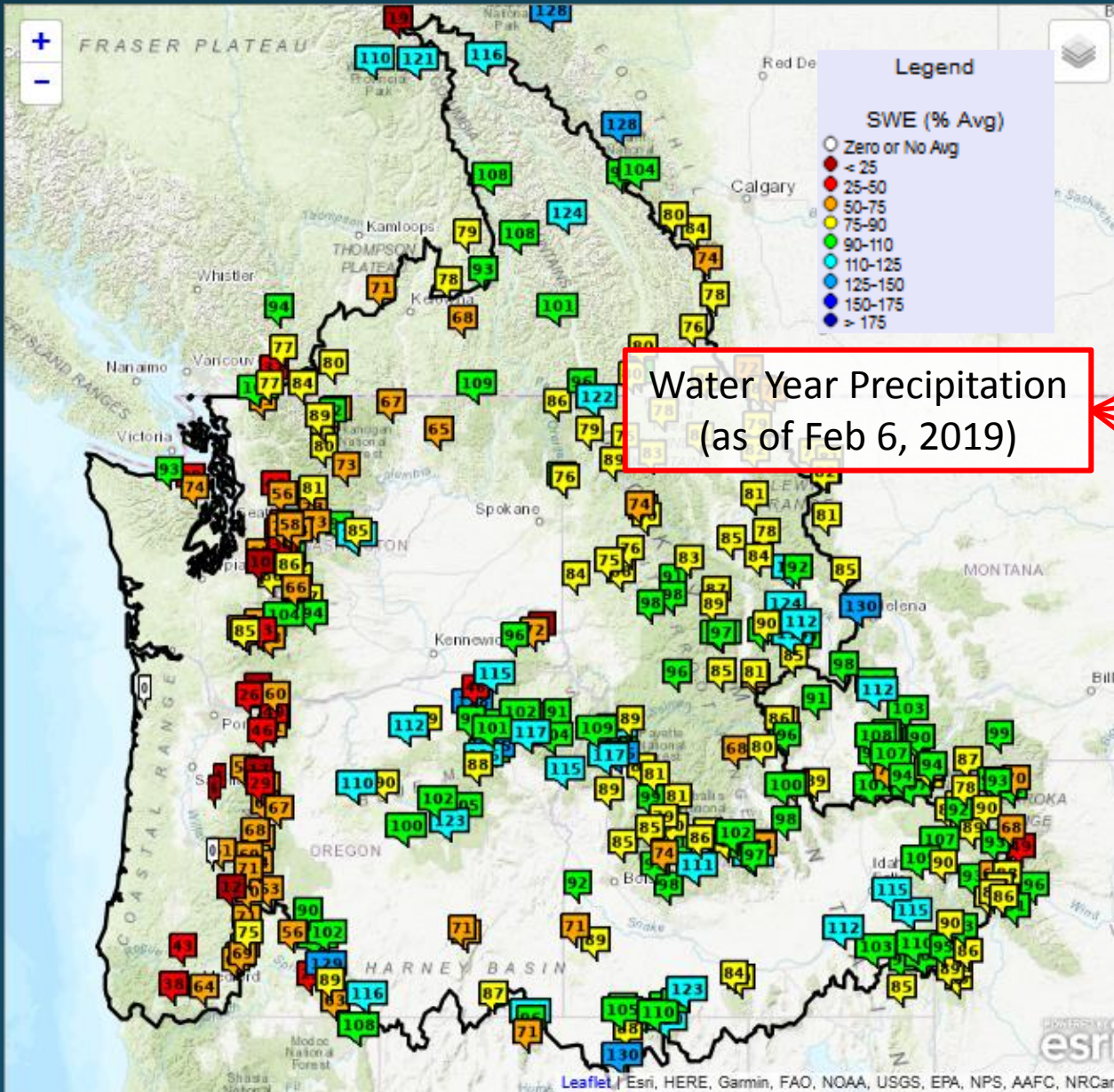
Snowpack and Seasonal Precipitation



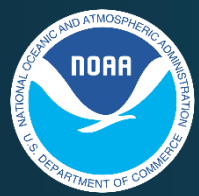
Data as of Feb 6, 2019. Snow data from NRCS, BC Hydro, and Alberta EP.



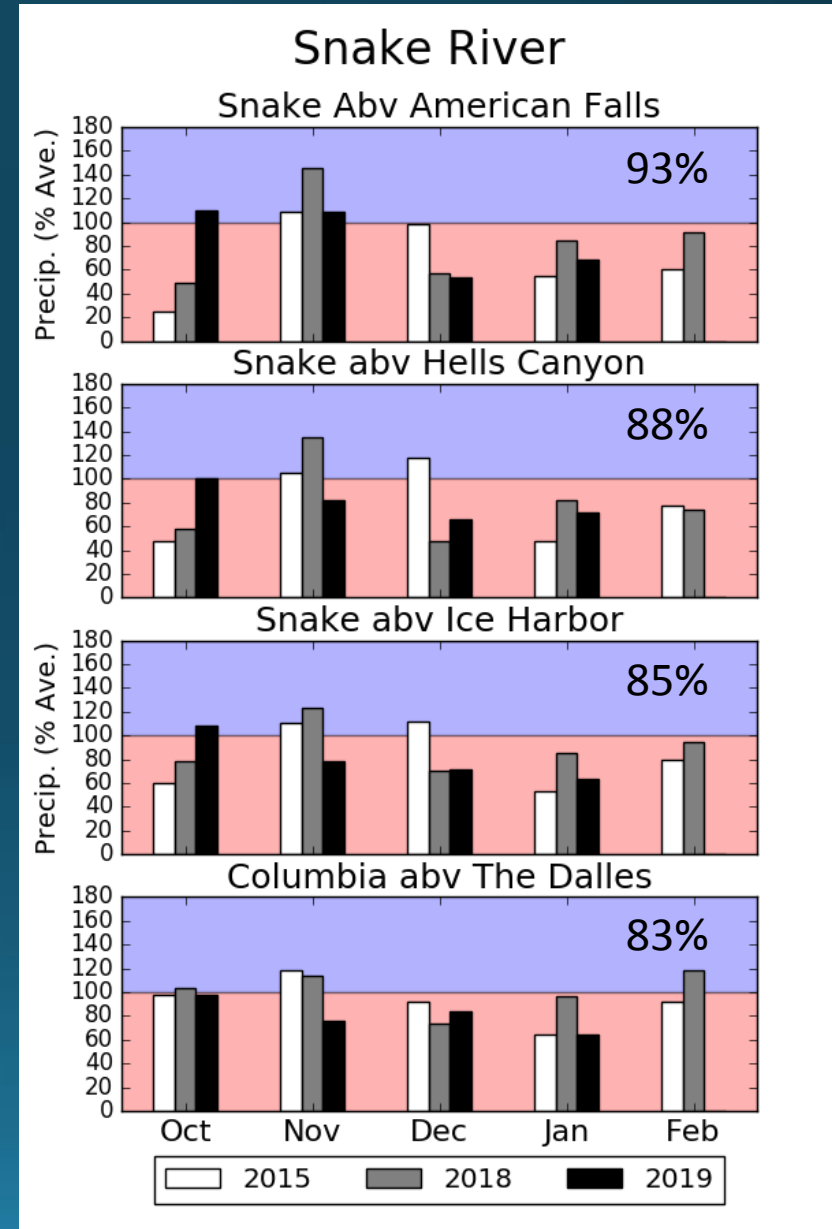
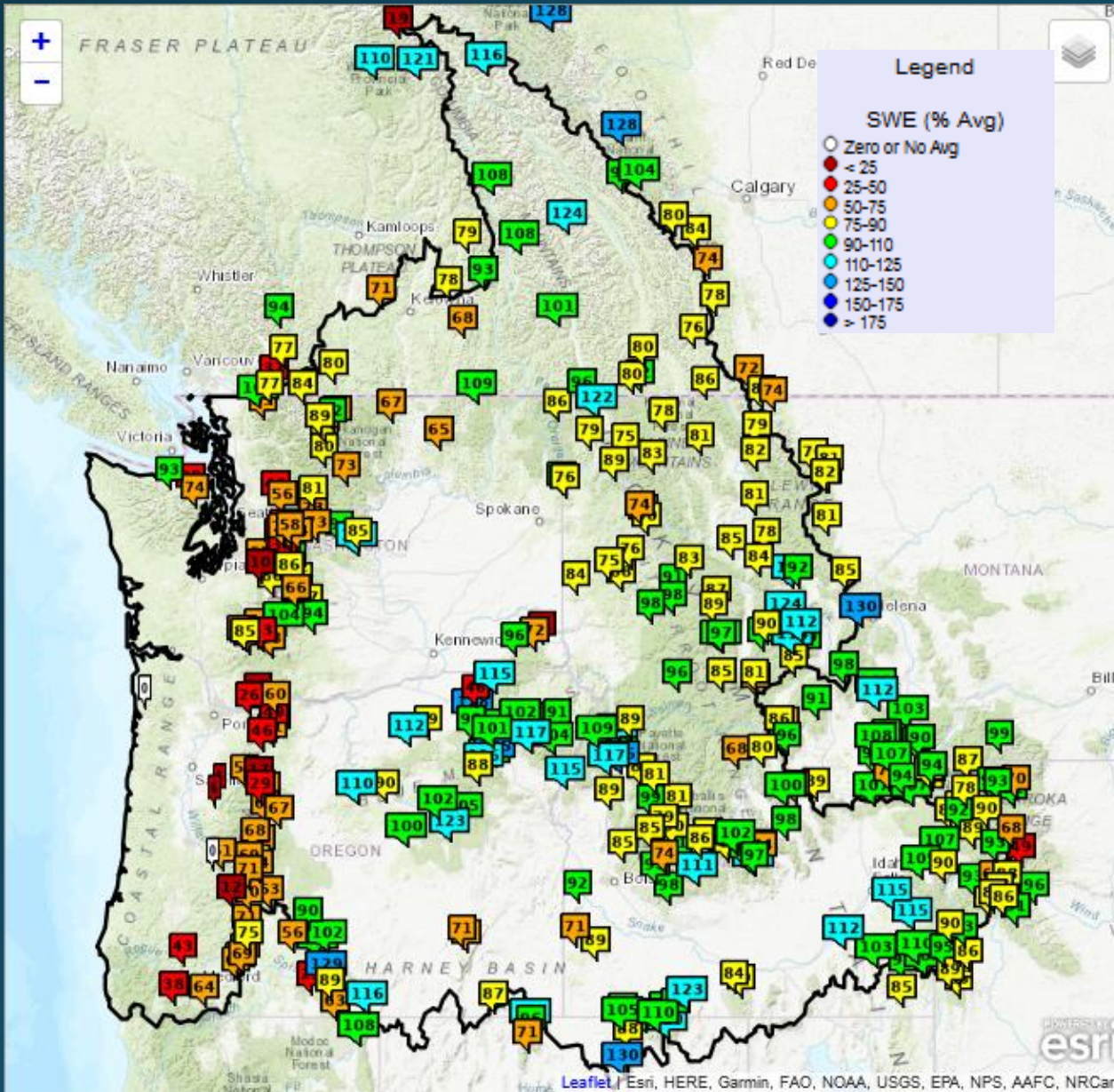
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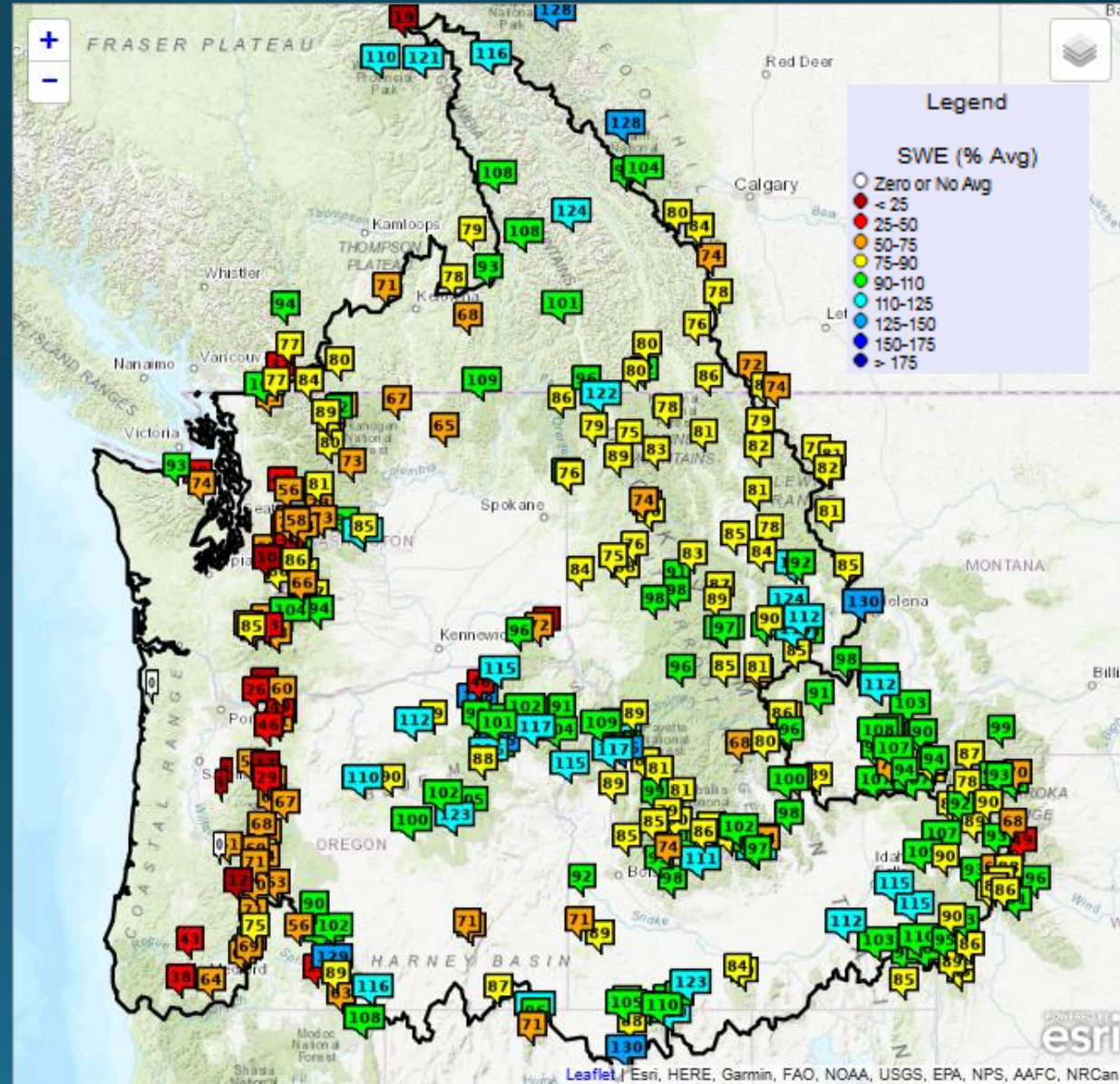
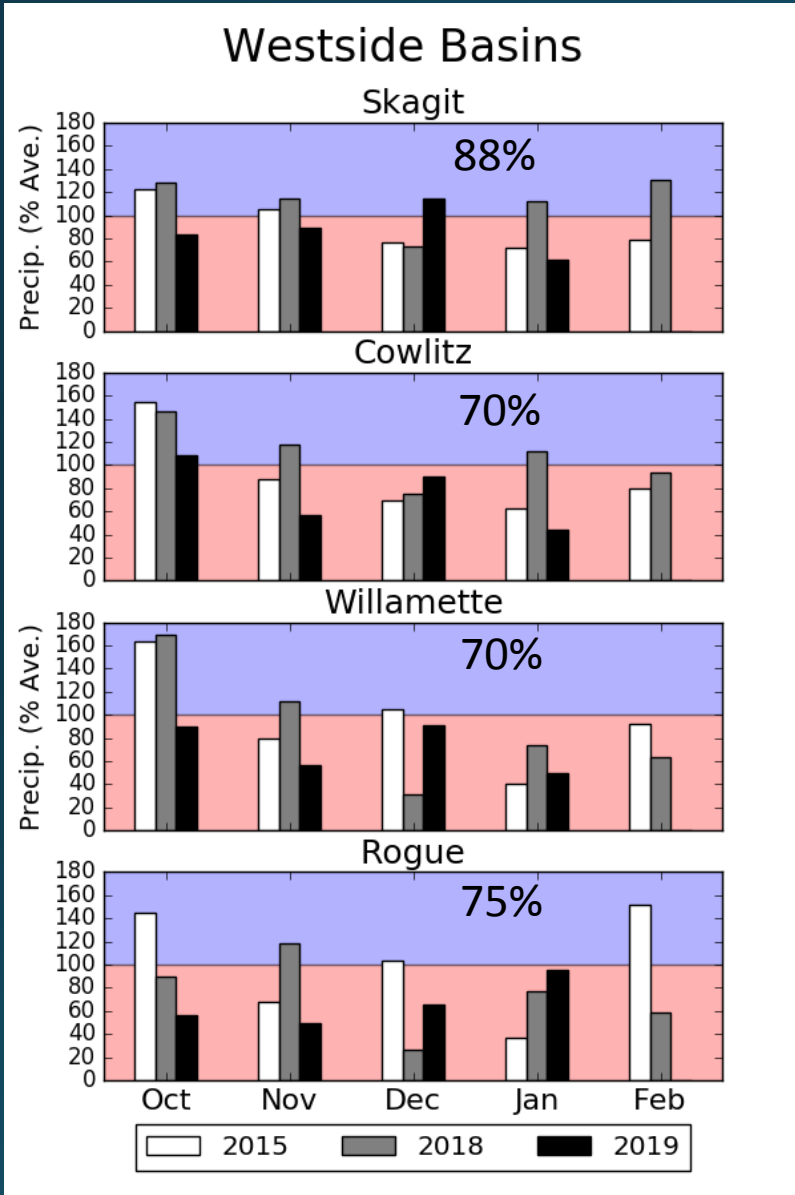


Snowpack and Seasonal Precipitation

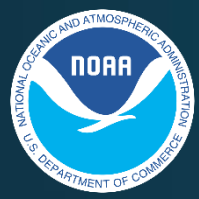


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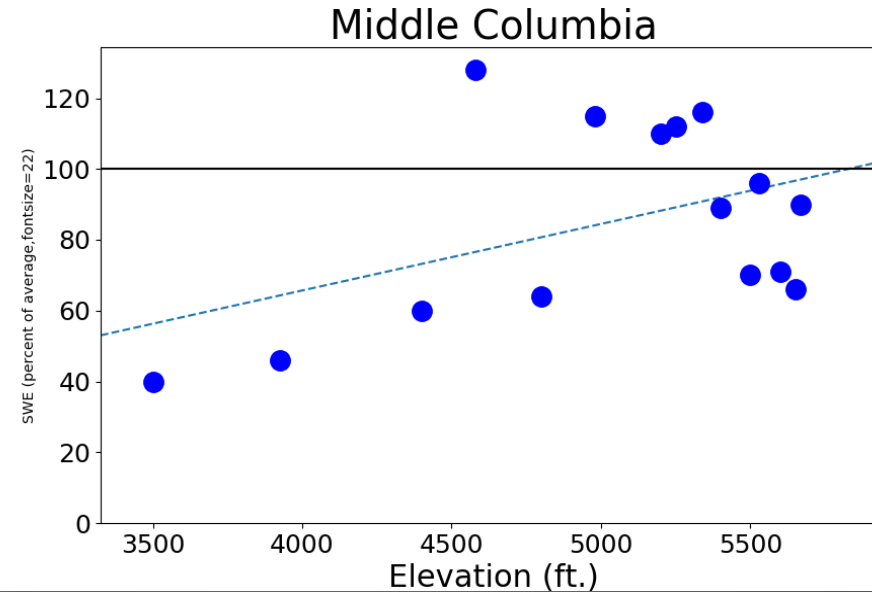
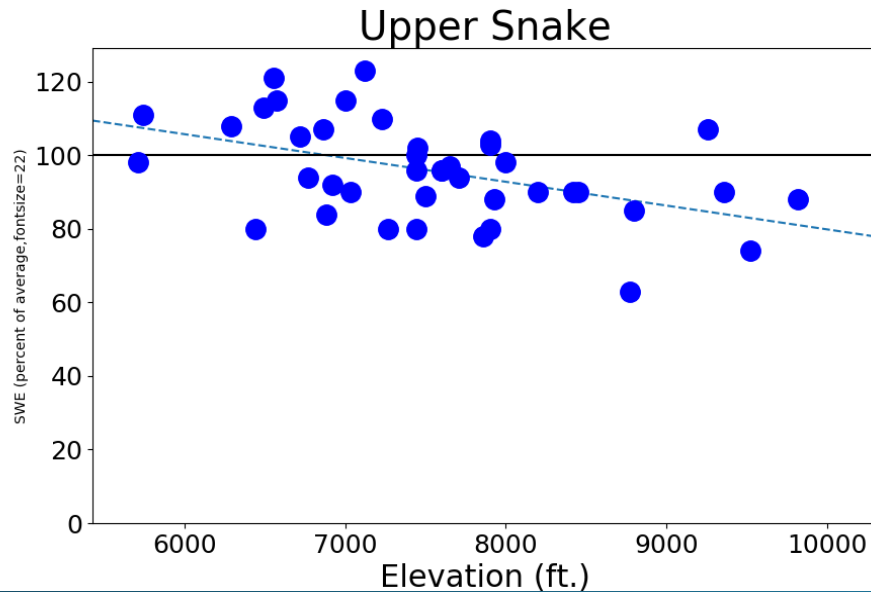
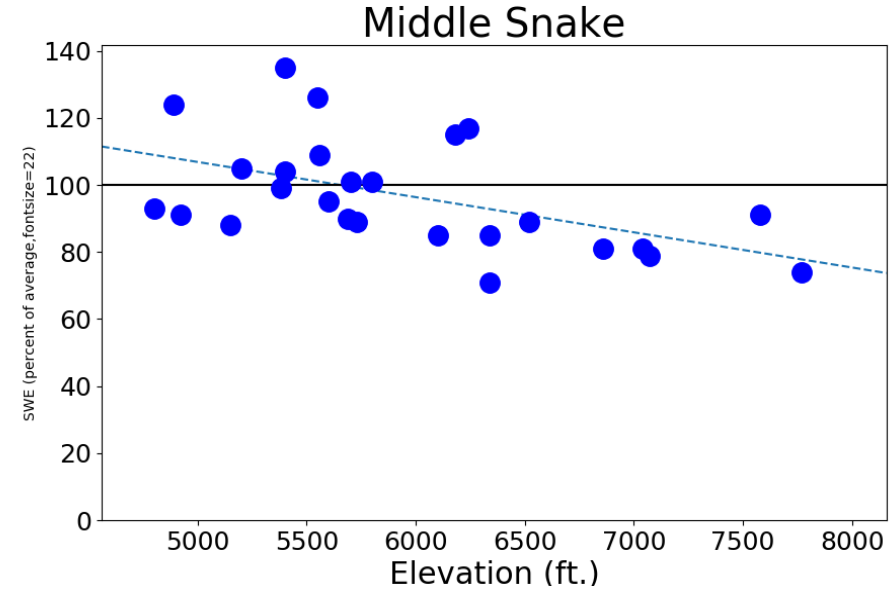
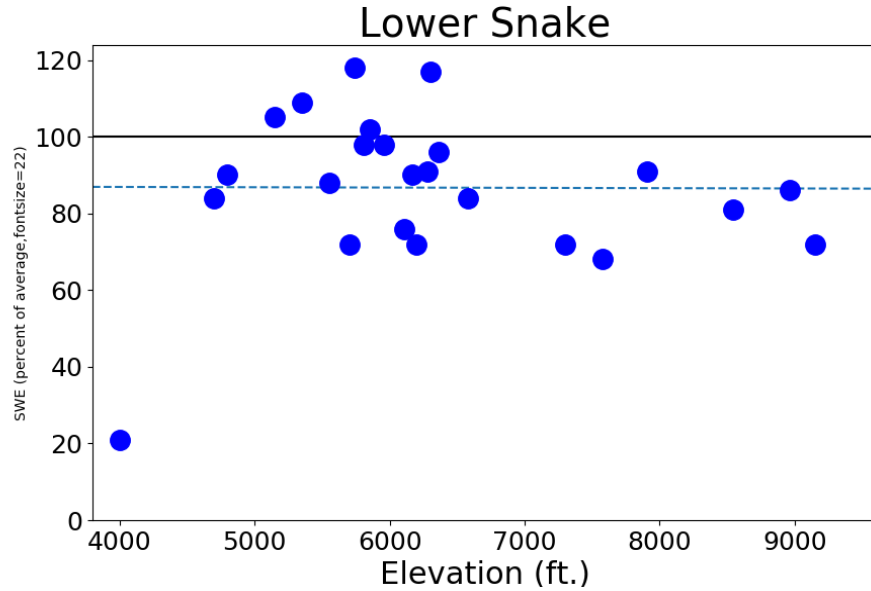
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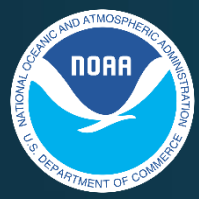
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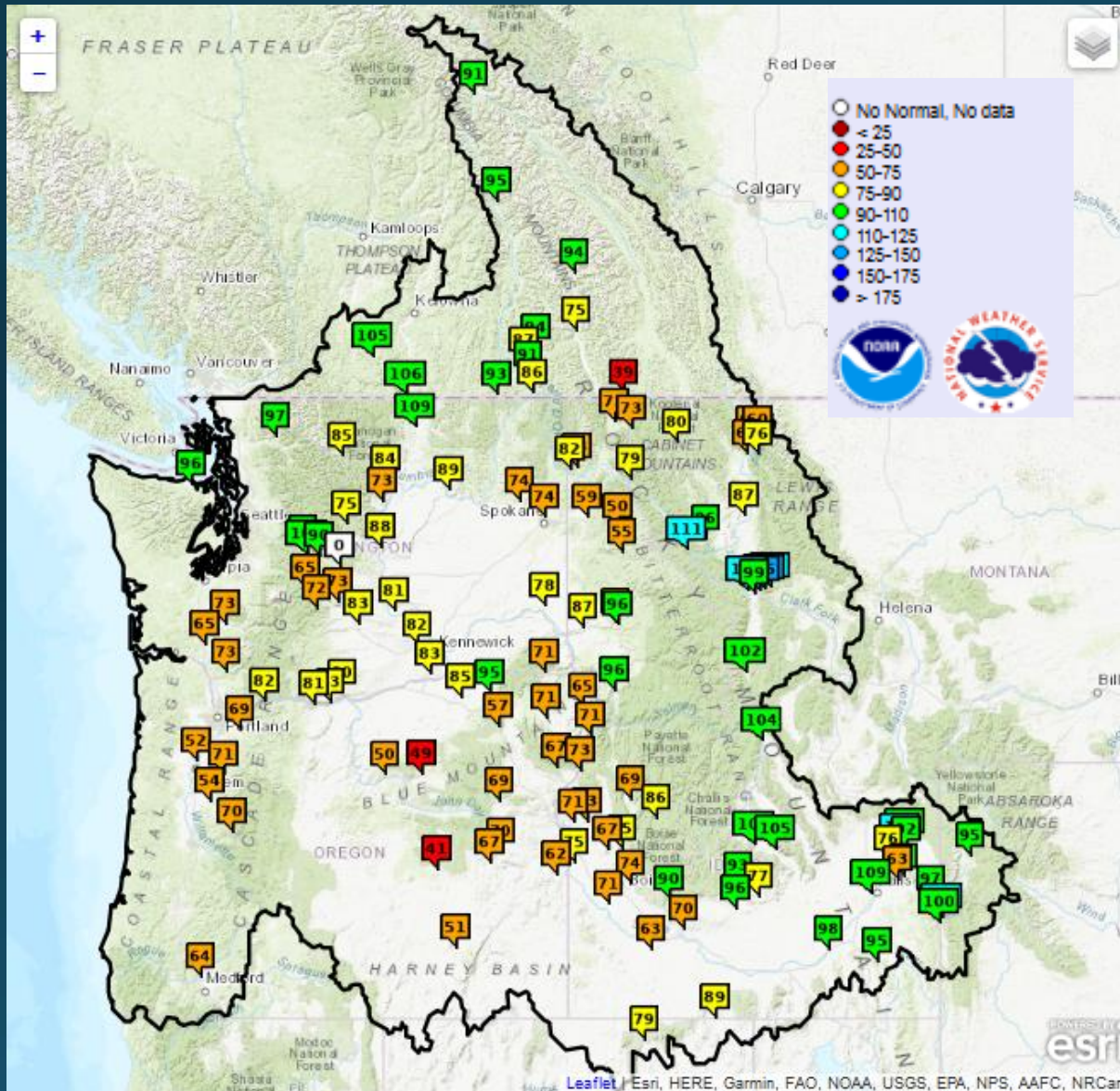
SWE vs. Elevation (Feb 6, 2019)



Data as of Feb. 6, 2019. Snow data from NRCS, BC Hydro, and Alberta EP.



Current Adjusted Runoff Conditions



% of Normal Oct 1– Feb 5

UPPER COLUMBIA BASIN

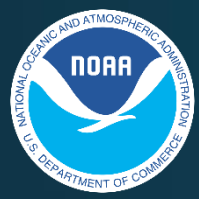
MICA	91
DUNCAN	93
QUEENS BAY	75
LIBBY	80
HUNGRY HORSE	76
GRAND COULEE	89

SNAKE RIVER BASIN

JACKSON LAKE	96
PALISADES	100
DWORSHAK	72
LOWER GRANITE	78

LOWER COLUMBIA BASIN

THE DALLES	81
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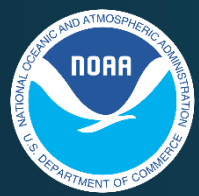
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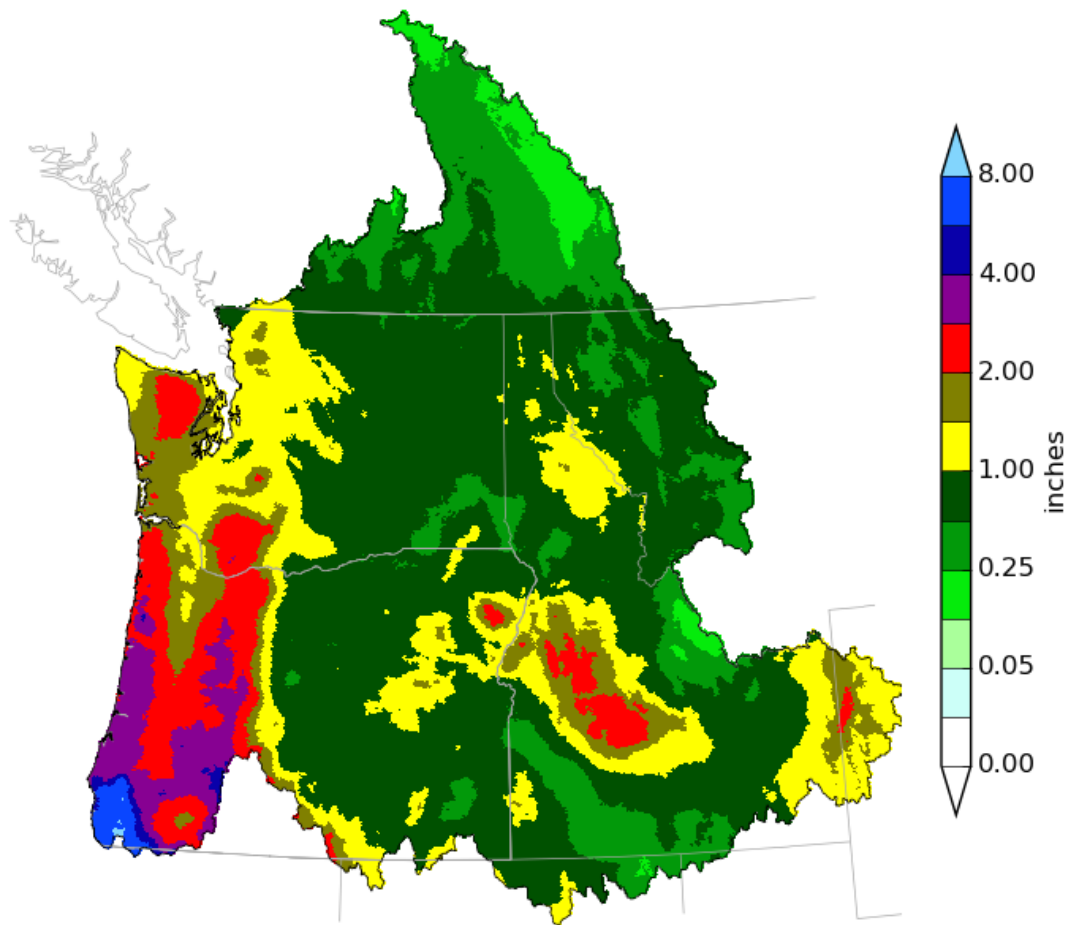


Cumulative 10 Day Precipitation Forecast

February 7-17, 2019



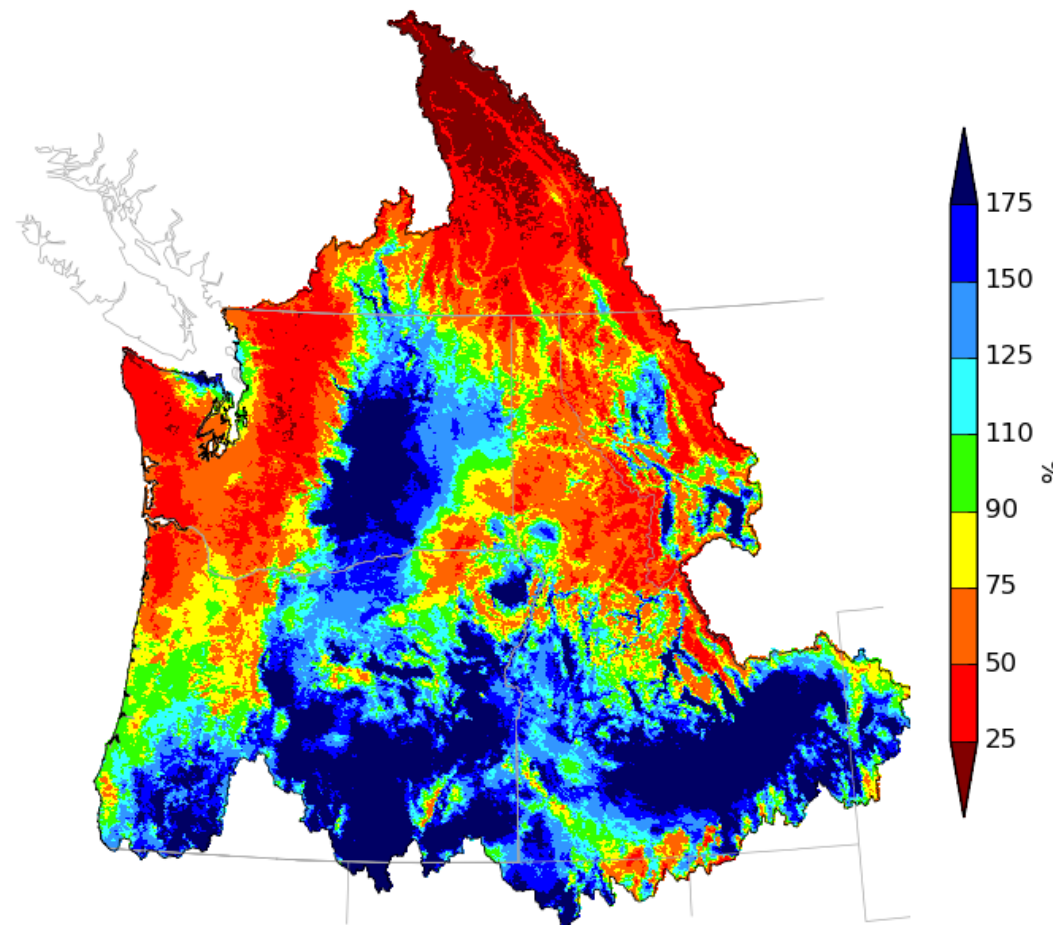
Northwest River Forecast Center
10 Day QPF, Ending 12Z, 02/17/19



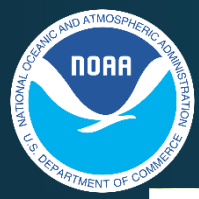
Creation Time: Thu Feb 7 15:32:50 UTC 2019



Northwest River Forecast Center
10 Day QPF (Percent of Climatology), Ending 12Z, 02/17/19



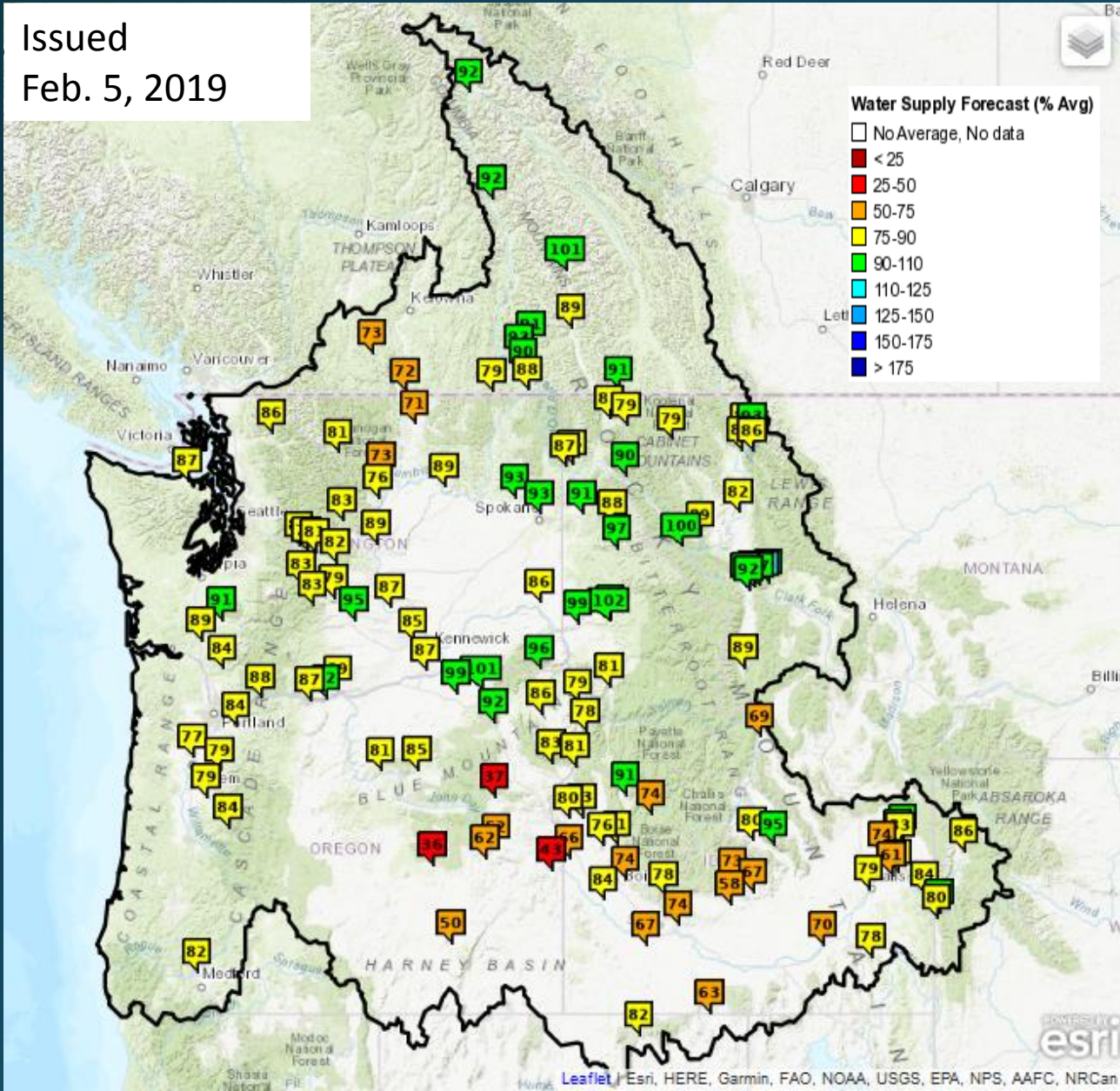
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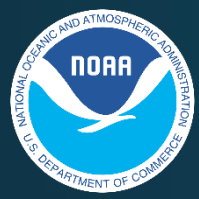
ESP10 Apr-Sep Water Supply Forecasts



Issued
Feb. 5, 2019



Basin	% 30 yr Normal
Columbia River - Mica Dam	92%
Kootenai River - Libby Dam	79%
Coeur d'Alene R - Coeur d'Alene Lake	91%
SF Flathead River - Hungry Horse Dam	86%
Clark Fork River - Above Missoula	107%
Bitterroot R - Above Missoula	92%
Pend Oreille R-Albeni Falls Dam	87%
Columbia River - Grand Coulee Dam	89%
Upper Snake River	
- Jackson Lake Dam	86%
- Palisades Dam	84%
- at Heise	84%
Middle Snake Tribs	
- Lucky Peak Dam	74%
- Owyhee Dam	43%
- Bruneau R nr Hot Springs	67%
NF Clearwater River-Dworshak Dam	94%
Lower Snake River-Lower Granite Dam	86%
Lower Columbia - The Dalles Dam	87%

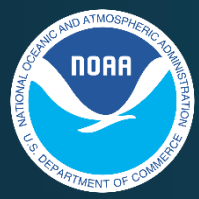


ESP10 Natural Apr-Sep Forecasts

ESP Natural - Western Oregon and Washington



<u>Basin</u>	<u>% 30 yr Normal</u>
Skagit River near Concrete	87%
Green River Howard Hanson Res	85%
Cowlitz River Mossyrock Reservoir	89%
Cowlitz River Mayfield Reservoir	89%
North Santiam At Mehama	82%
Willamette River At Salem	74%
Rogue River Applegate Reservoir	85%



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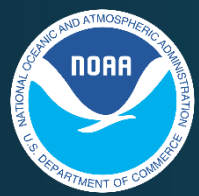
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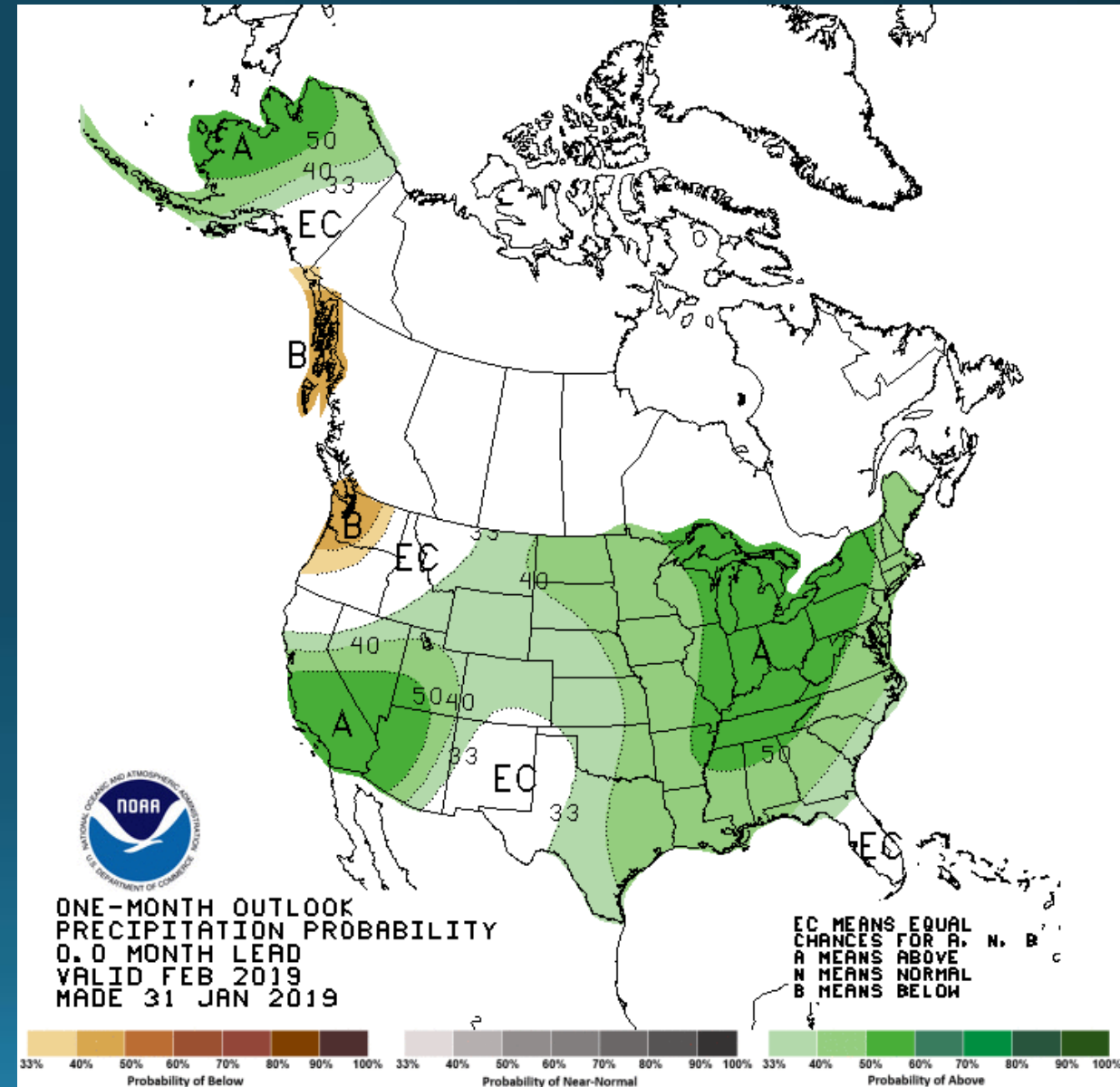
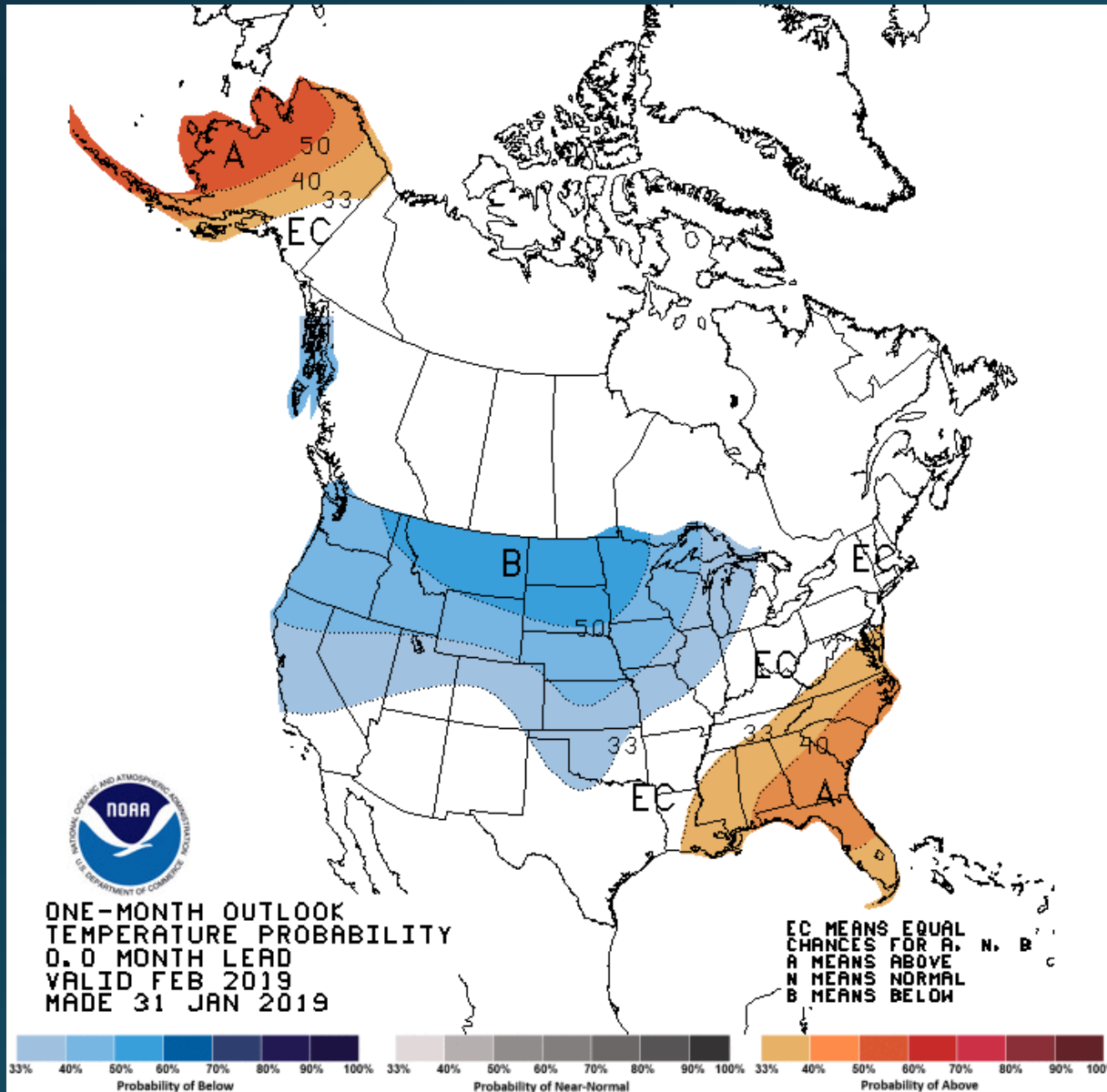
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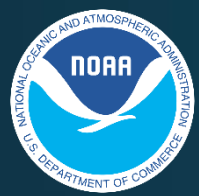


One Month CPC Outlook (Jan 31)



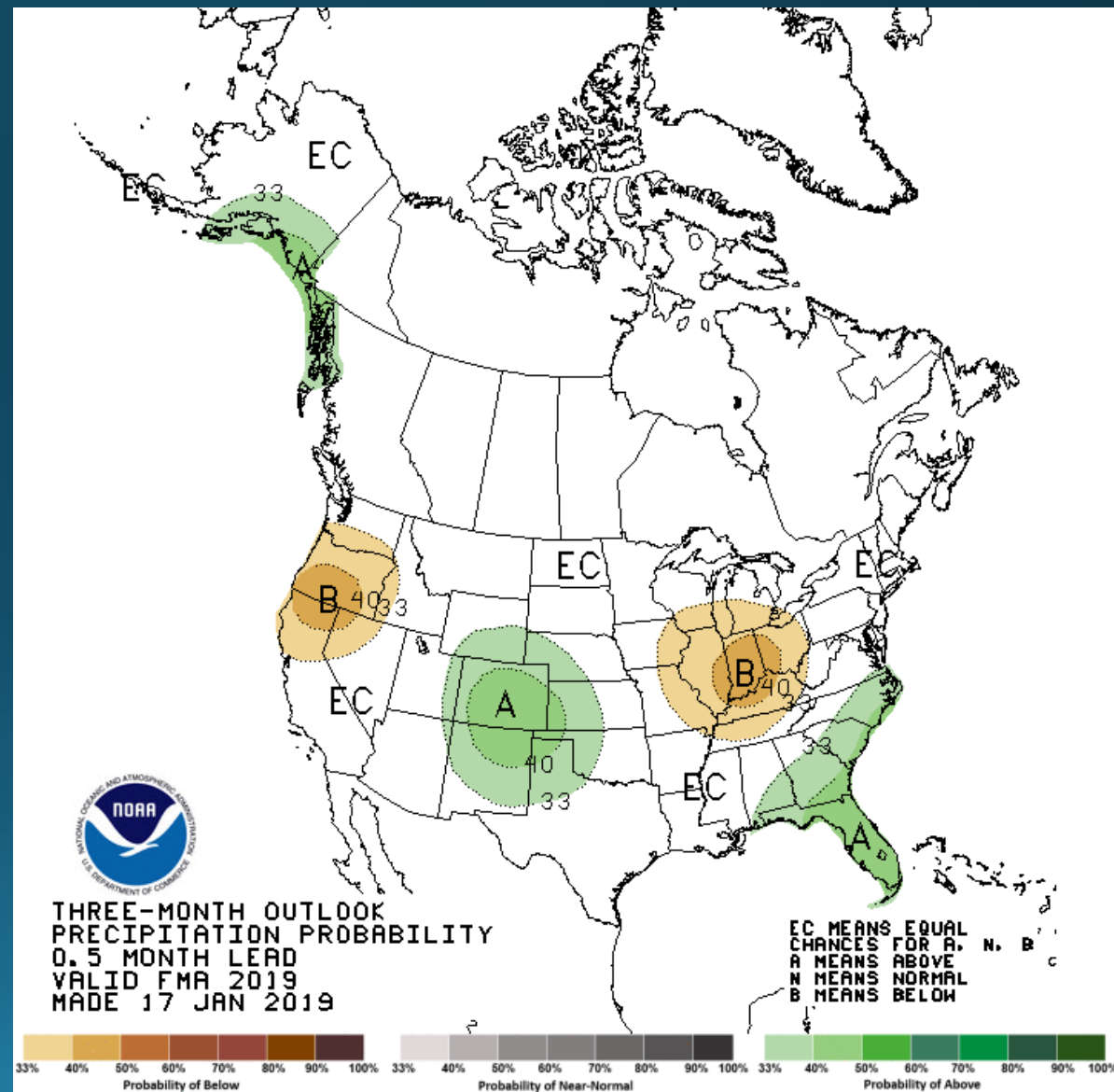
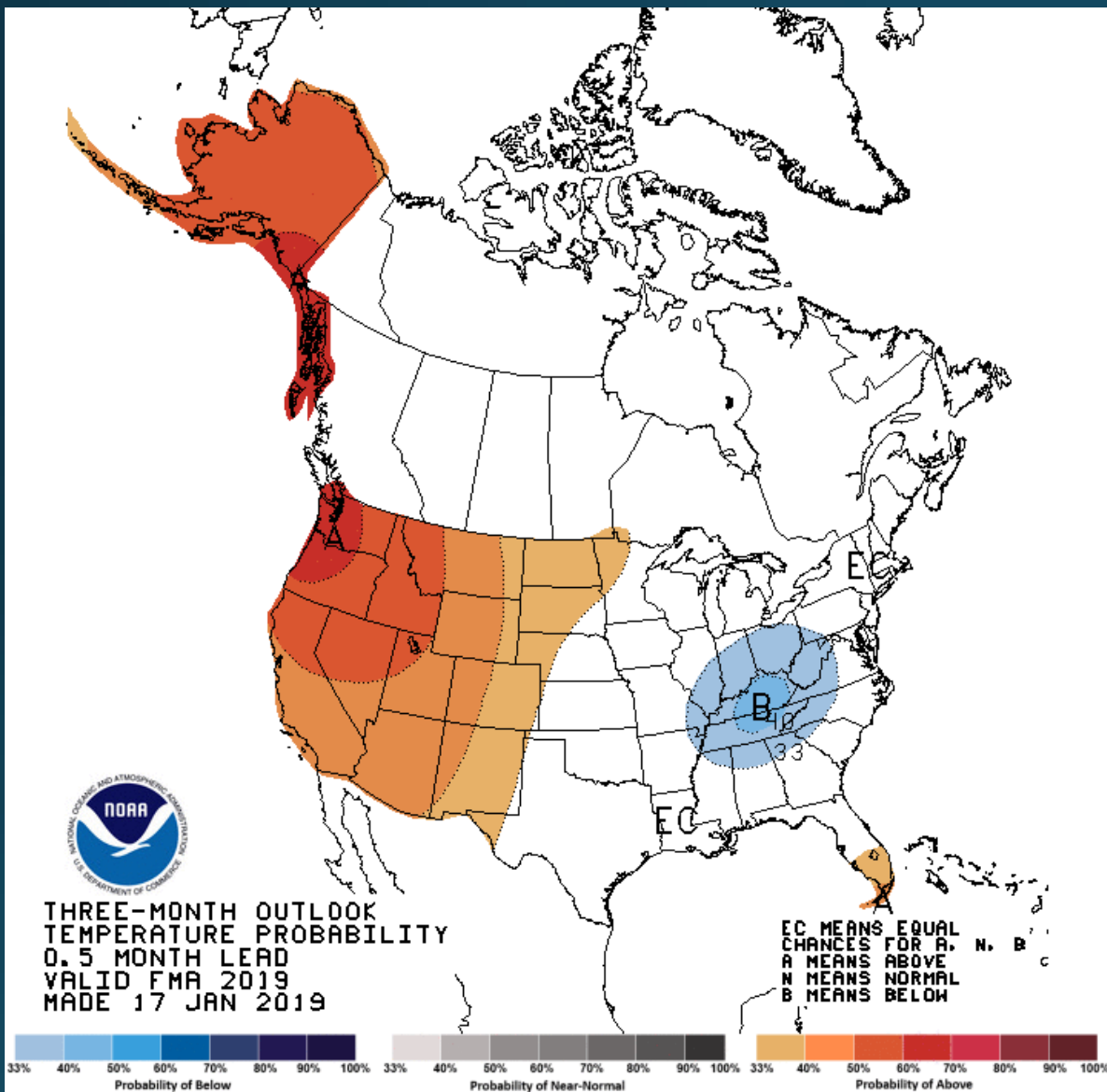
<http://www.cpc.ncep.noaa.gov/>

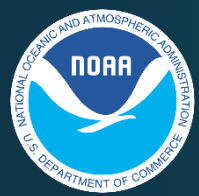




Three Month CPC Outlook (Jan 17)

<http://www.cpc.ncep.noaa.gov/>





IRI/CPC Pacific Niño 3.4 SST Model Outlook

ENSO Alert System Status: El Niño Watch

ENSO-neutral conditions are present.

El Niño is expected to form and continue through the Northern Hemisphere spring 2019 (~65% chance).

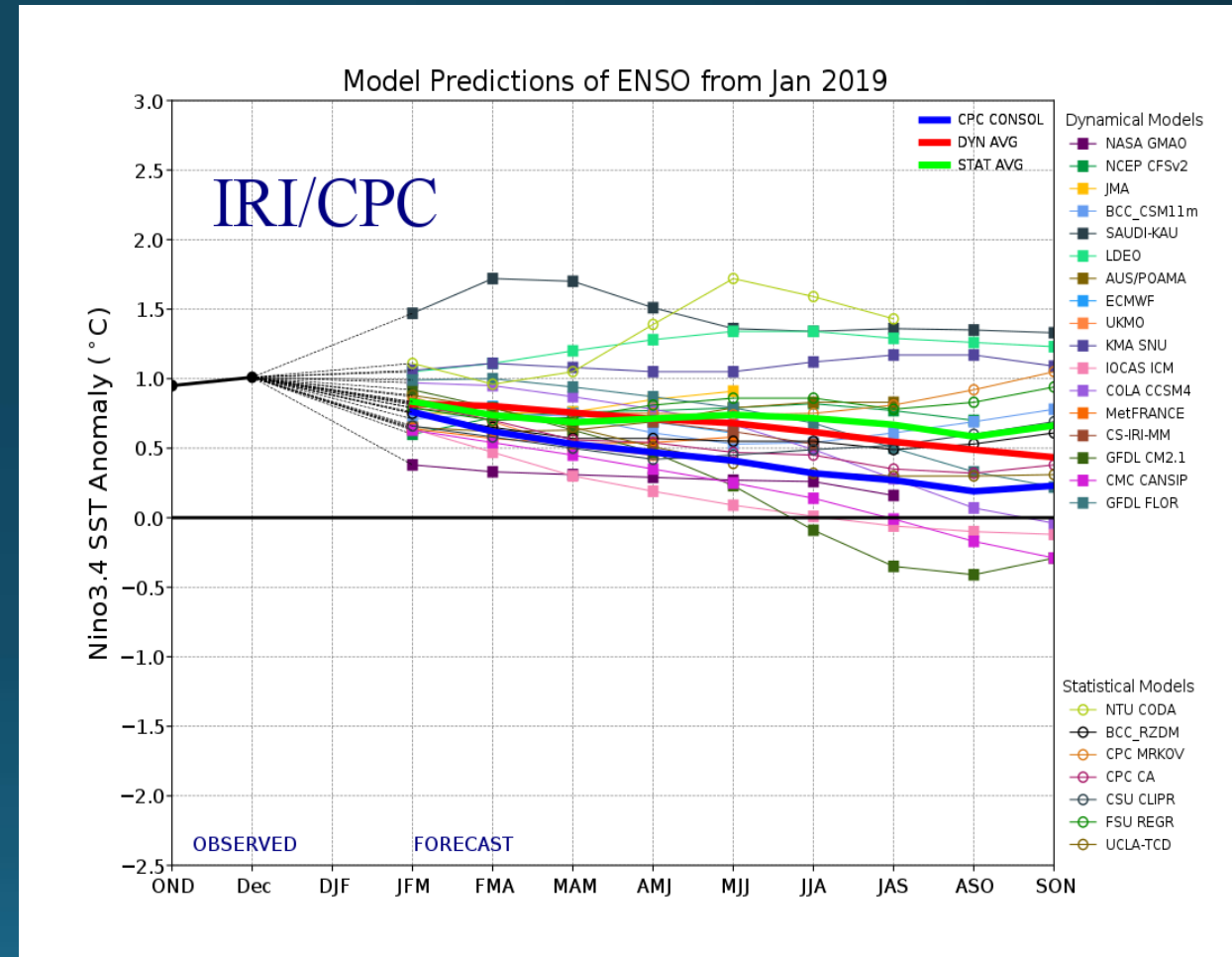
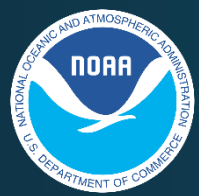


Figure and text from CPC:

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.ppt

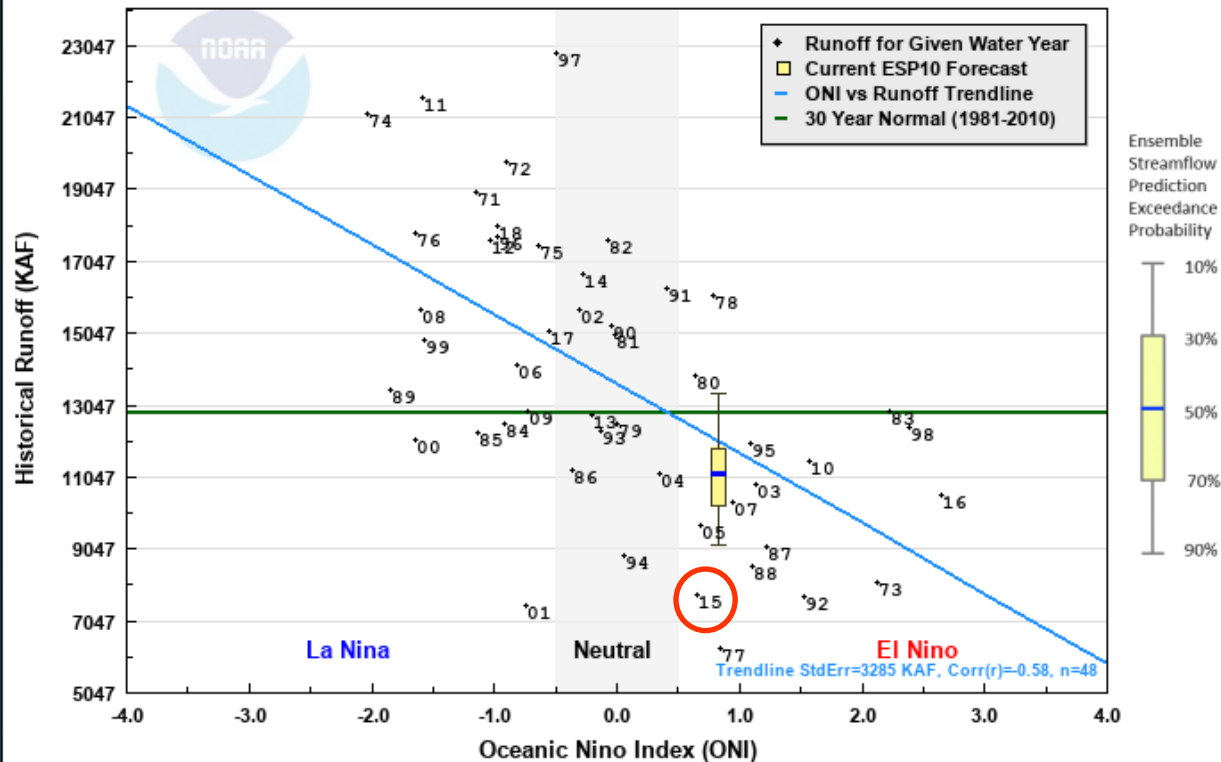


Historical Runoff vs. ONI NDJ Index

Upper Columbia Basins

NOV-JAN Oceanic Nino Index vs APR-SEP Historical Water Supply Runoff

(ALFW1) PEND OREILLE - ALBENI FALLS DAM (1971-2018)



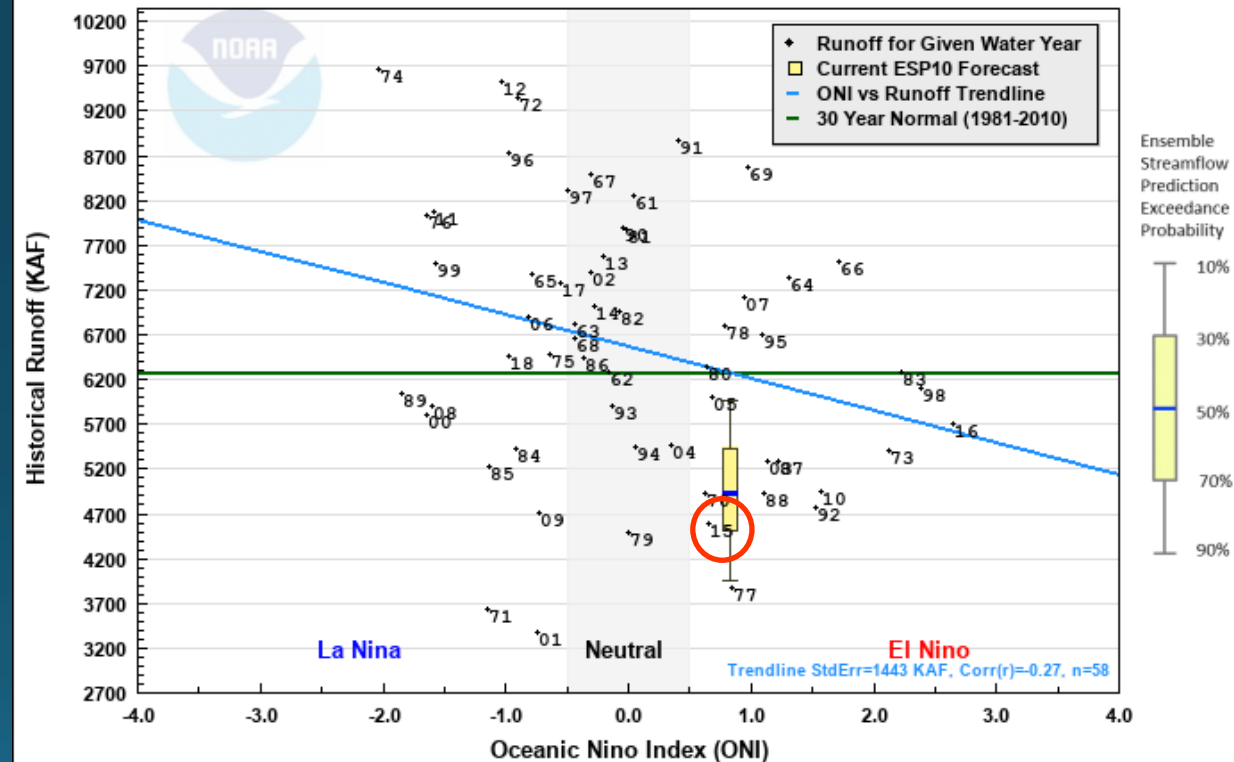
ONI Index Date: 12/01/2018

ESP Forecast Date: 02/05/2019

Created: 02/06/2019 03:29 PST

NOV-JAN Oceanic Nino Index vs APR-SEP Historical Water Supply Runoff

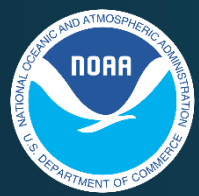
(LYDM8) KOOTENAI - LIBBY DAM (1961-2018)



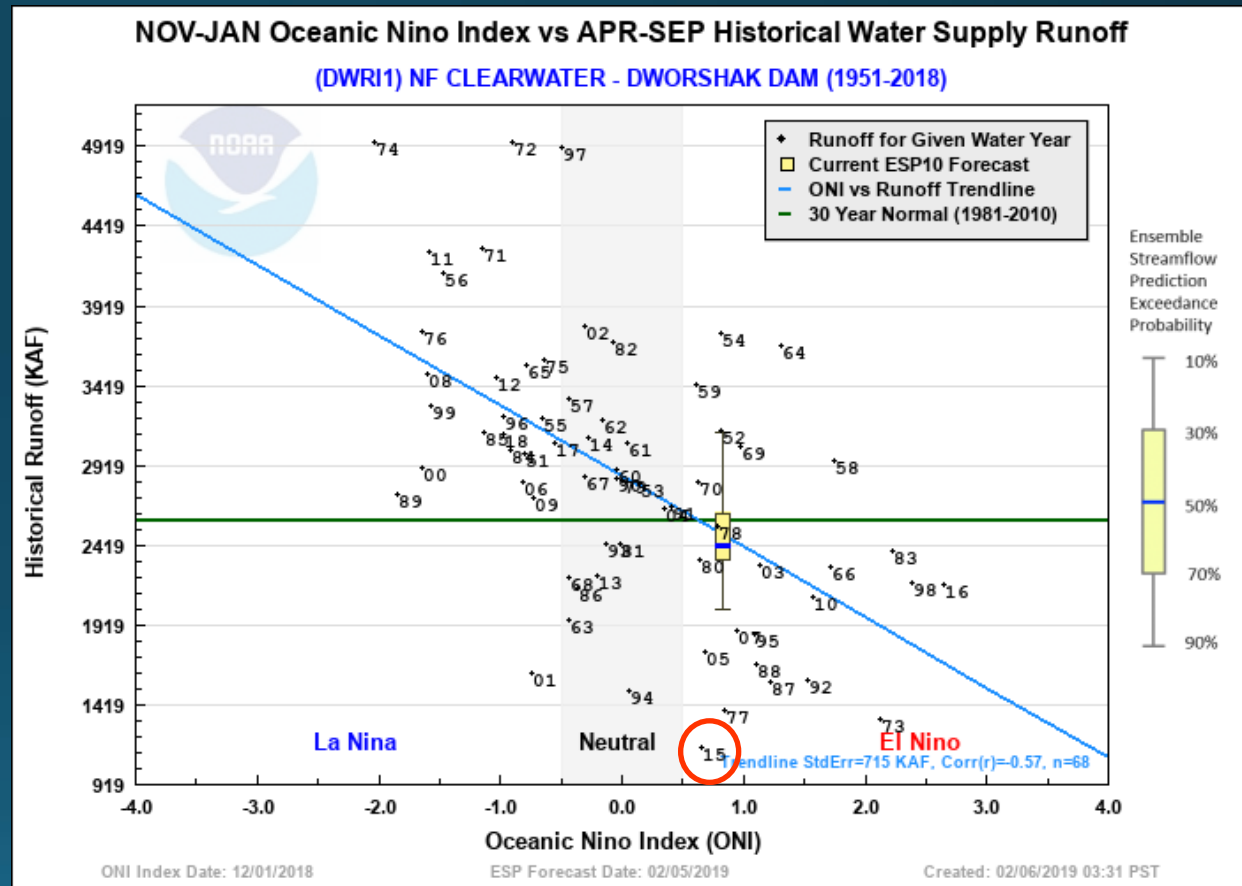
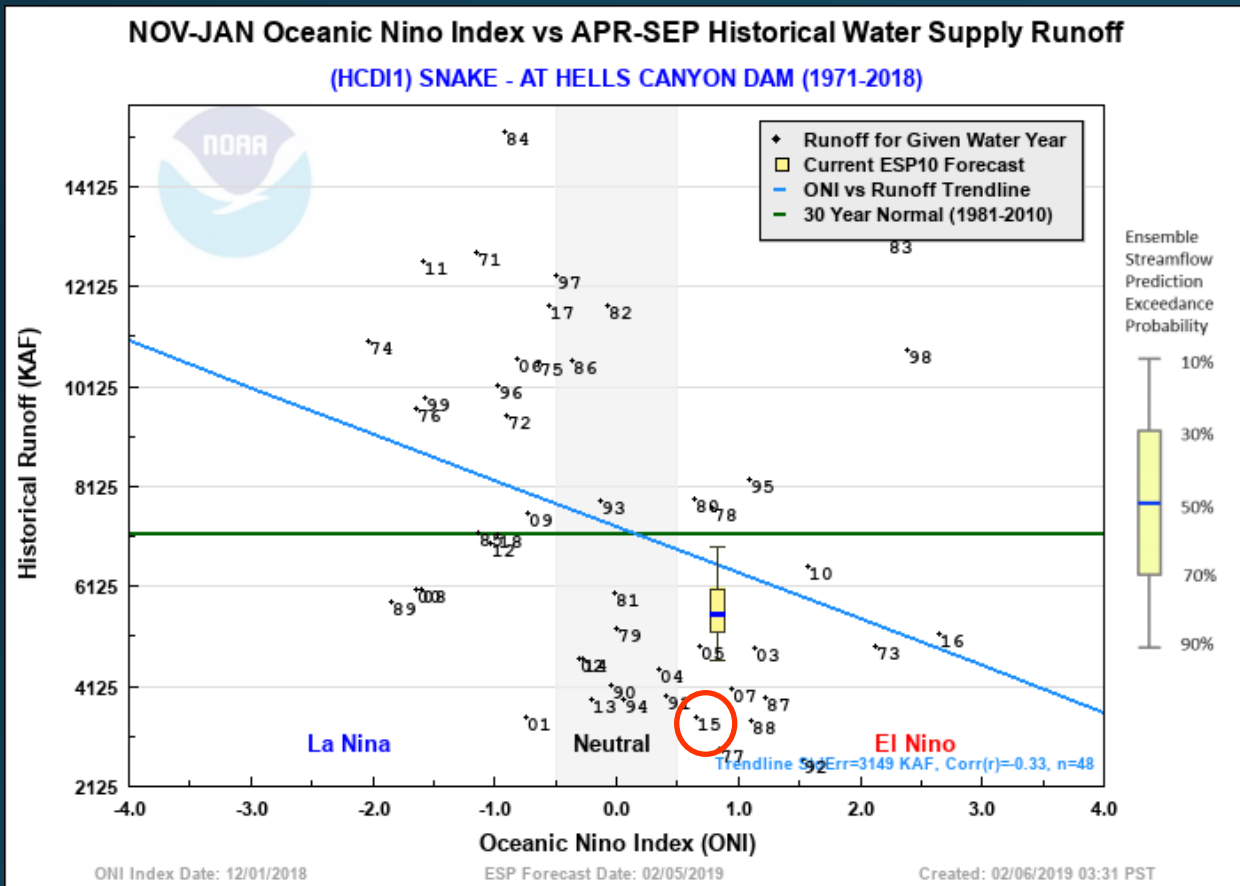
ONI Index Date: 12/01/2018

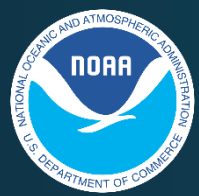
ESP Forecast Date: 02/05/2019

Created: 02/06/2019 03:30 PST



Historical Runoff vs. ONI NDJ Index Snake Basins



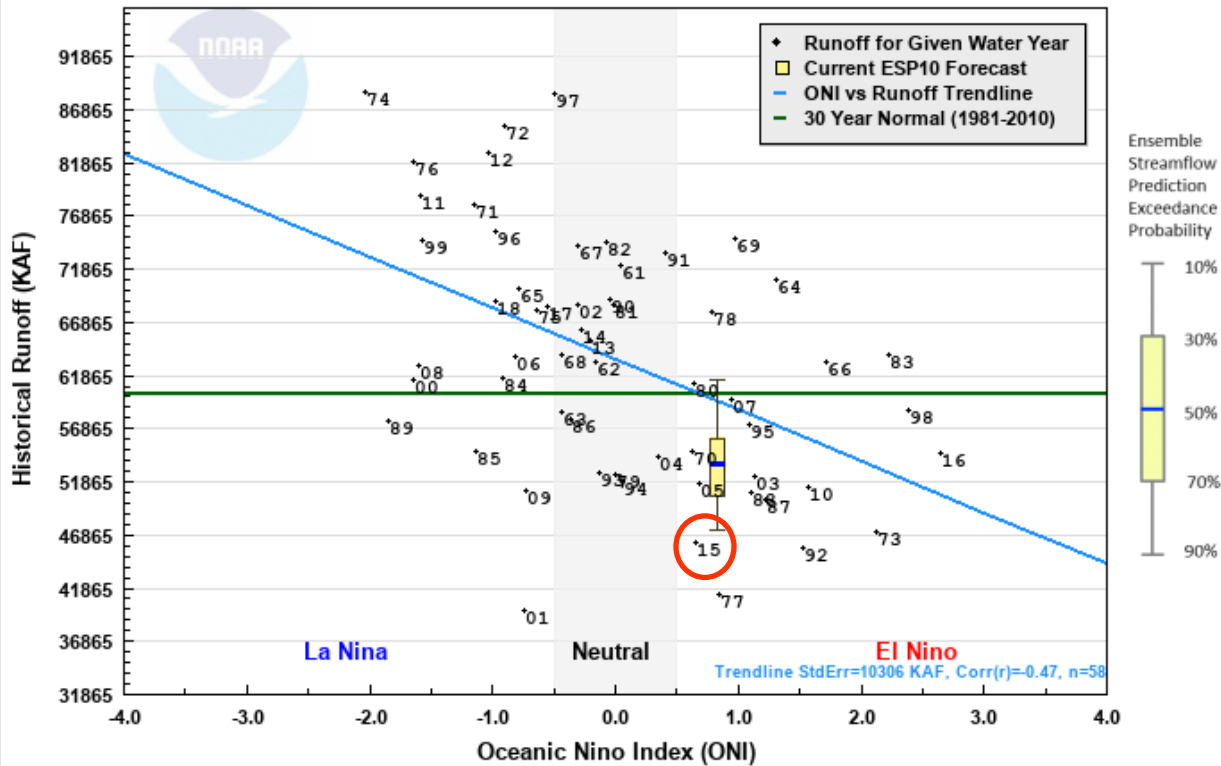


Historical Runoff vs. ONI NDJ Index

Columbia River Basin

NOV-JAN Oceanic Nino Index vs APR-SEP Historical Water Supply Runoff

(GCDW1) COLUMBIA - GRAND COULEE DAM (1961-2018)



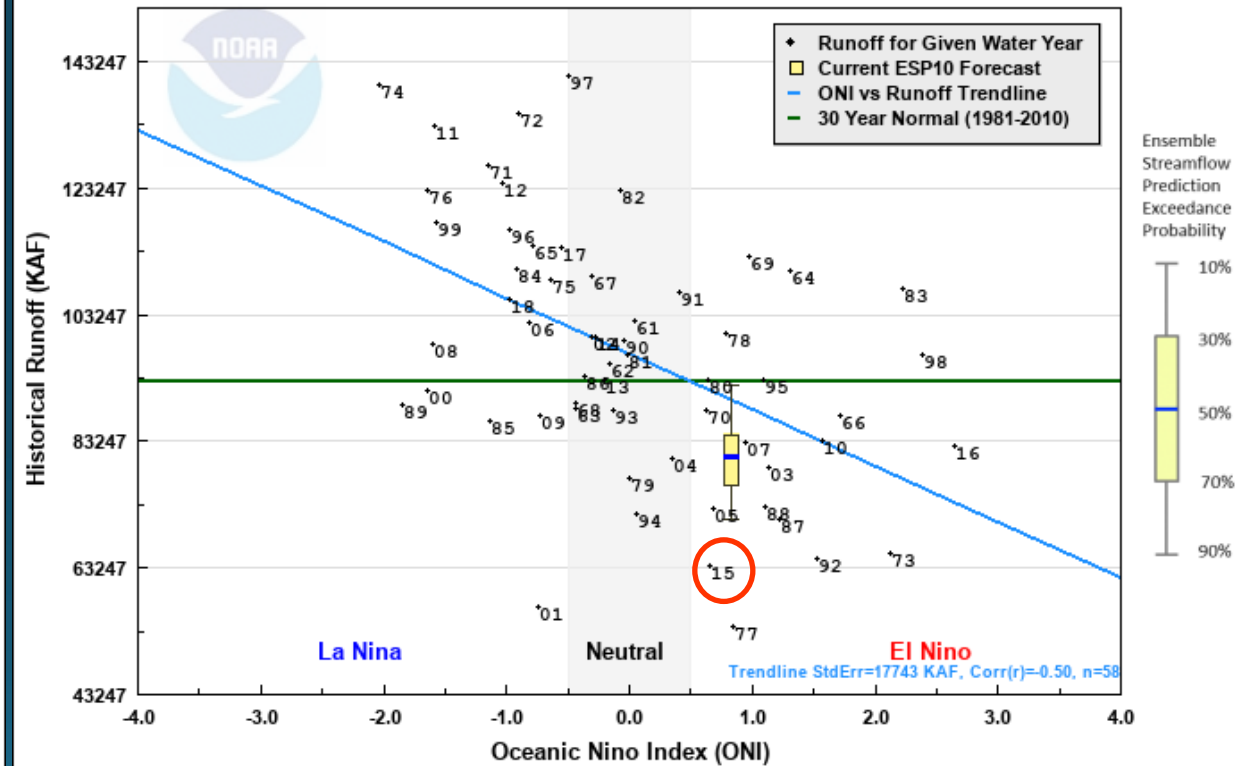
ONI Index Date: 12/01/2018

ESP Forecast Date: 02/05/2019

Created: 02/06/2019 03:27 PST

NOV-JAN Oceanic Nino Index vs APR-SEP Historical Water Supply Runoff

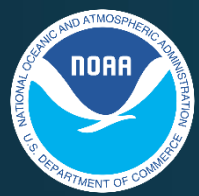
(TDAO3) COLUMBIA - THE DALLES DAM (1961-2018)



ONI Index Date: 12/01/2018

ESP Forecast Date: 02/05/2019

Created: 02/06/2019 03:28 PST

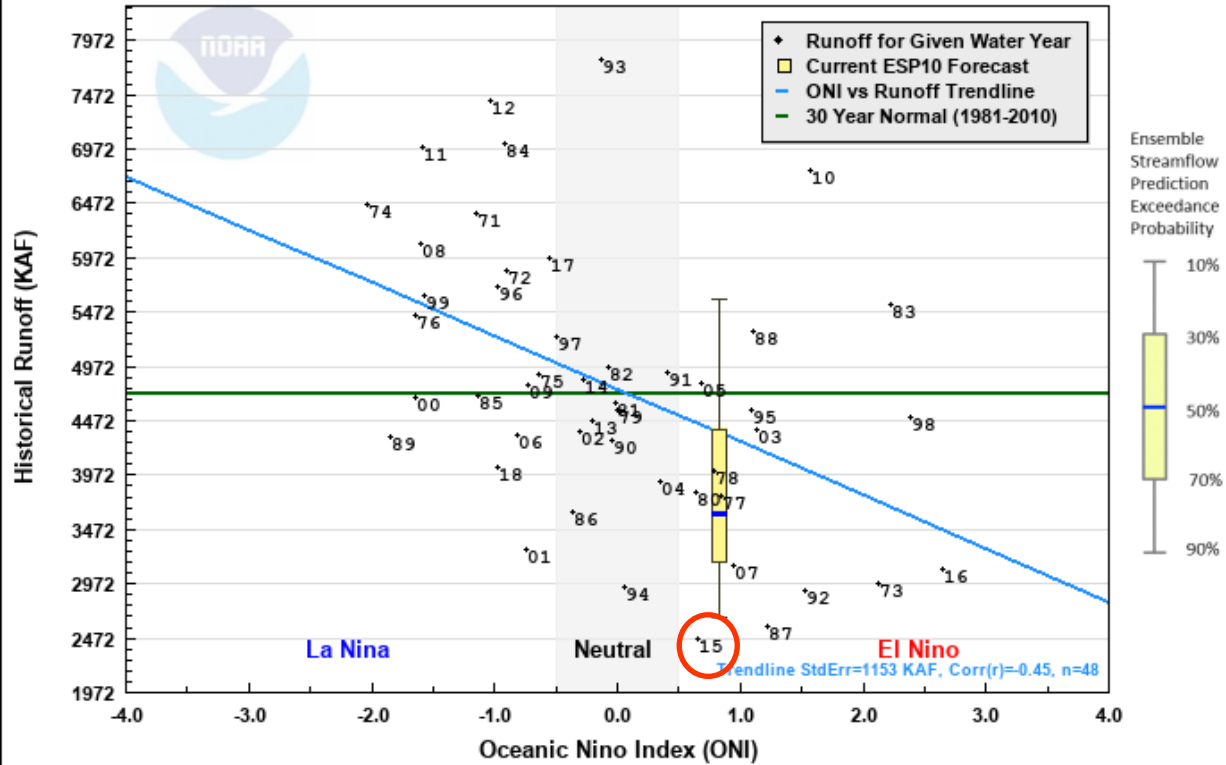


Historical Runoff vs. ONI NDJ Index

Westside Basins

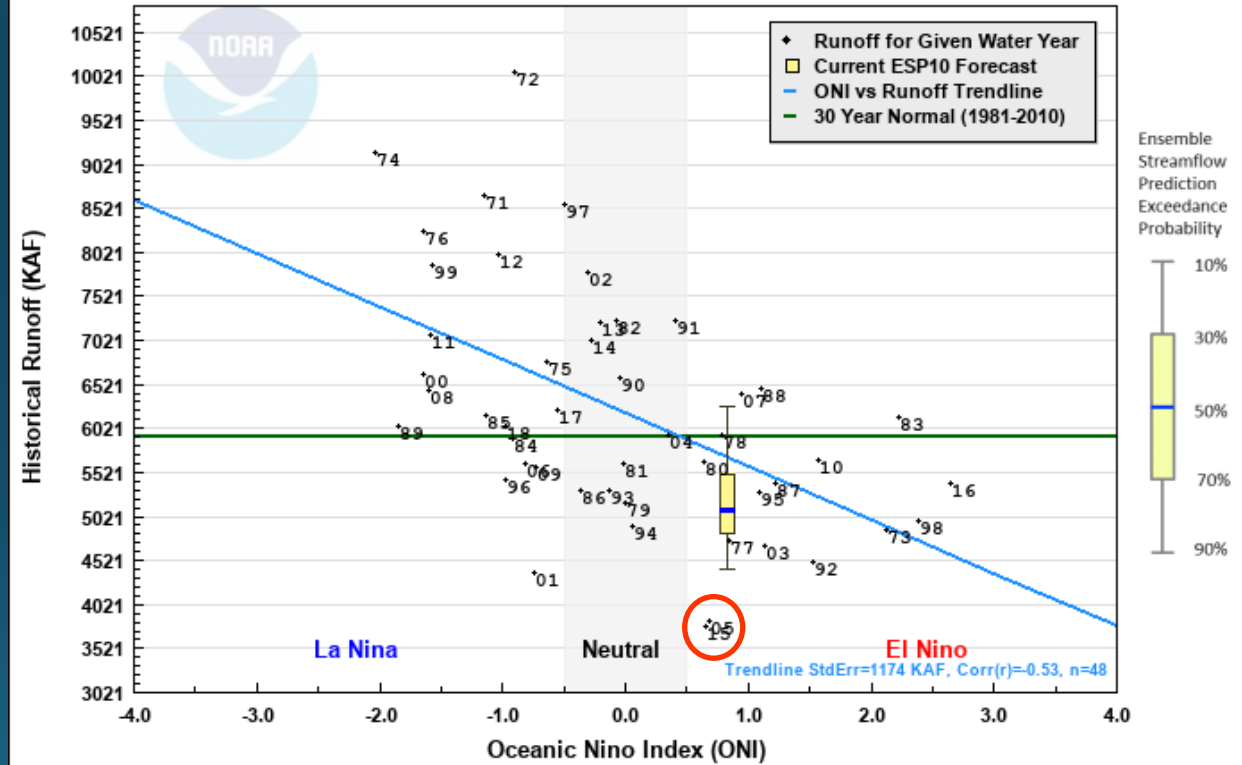
NOV-JAN Oceanic Nino Index vs APR-SEP Historical Water Supply Runoff

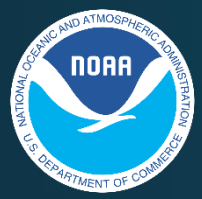
(SLM03) WILLAMETTE - AT SALEM (1971-2018)



NOV-JAN Oceanic Nino Index vs APR-SEP Historical Water Supply Runoff

(CONW1) SKAGIT - NEAR CONCRETE (1971-2018)



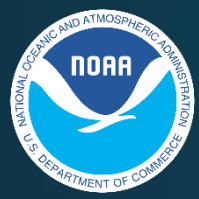


Summary



Water Year 2019 Summary

- Precipitation generally below normal across the basin. This is especially pronounced in southern and southeastern Oregon.
- Temperatures have generally been above normal across the basin.
- Below normal P and above normal T = below normal SWE
- Water supply forecasts:
 - 79-107 % in Columbia River Basins above Grand Coulee
 - 61-95 % in Upper Snake, Westside Cascade, and Eastern Washington Basins
 - 36-66 % in Southeastern Oregon
- CPC forecasts continue to predict weak El Nino conditions for Spring and early Summer.



2019 Schedule for Live Water Supply Briefings

March

April

May

June

7

4

2

6

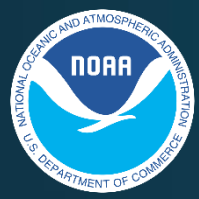
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