



March 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

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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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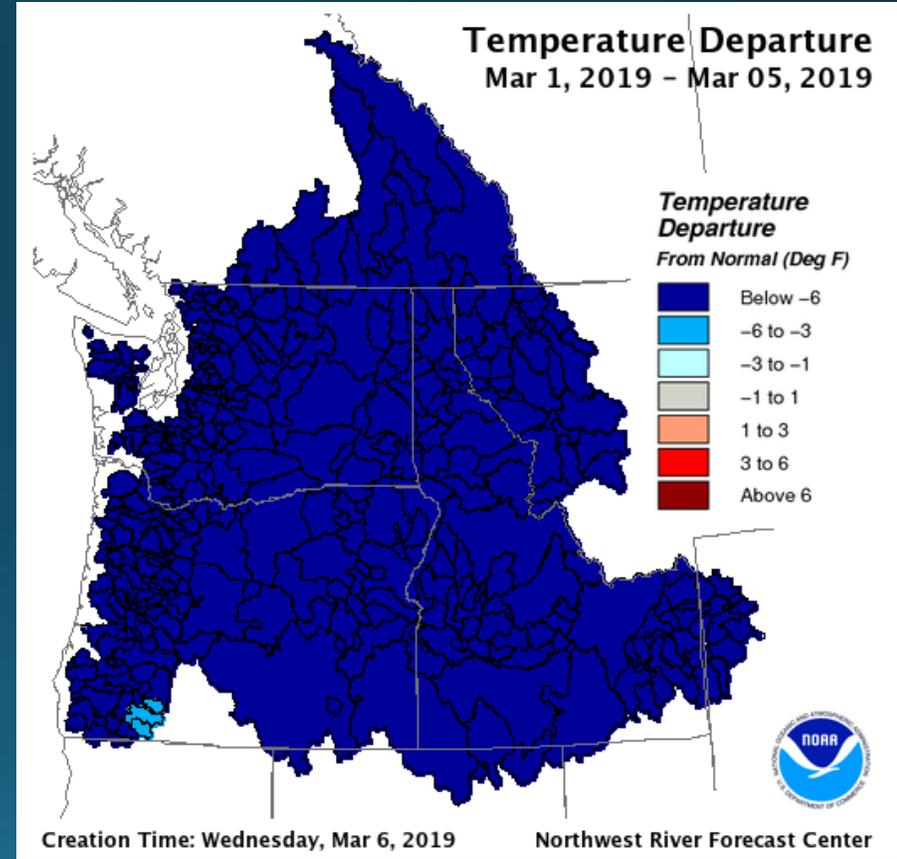
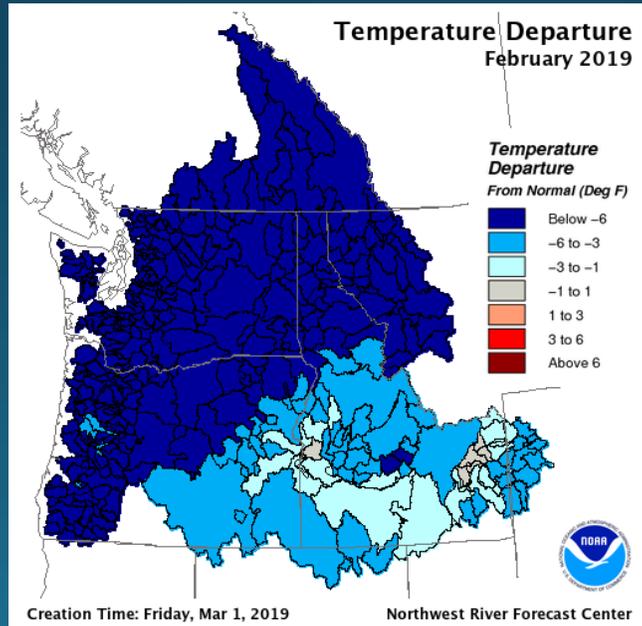
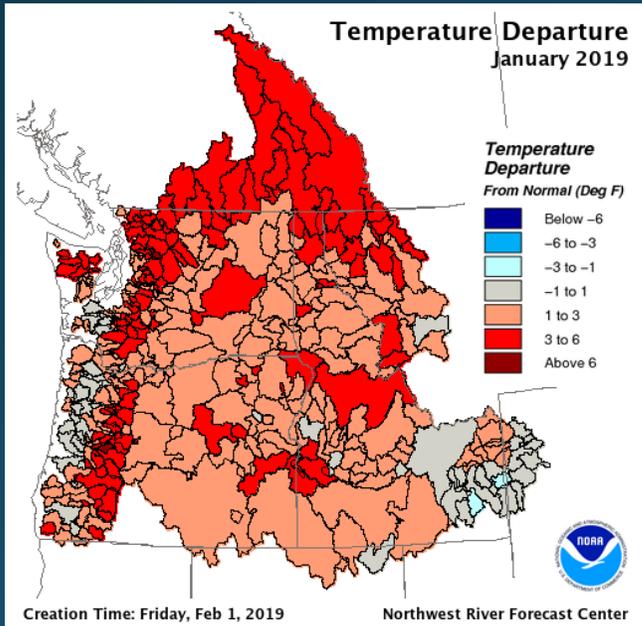
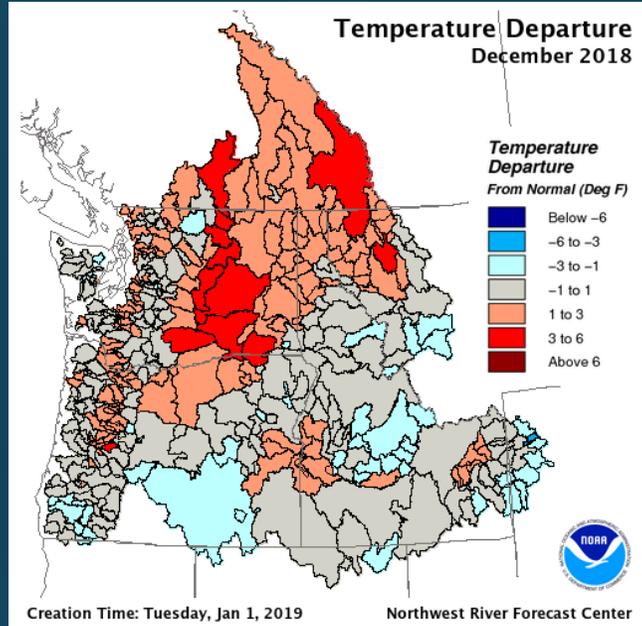
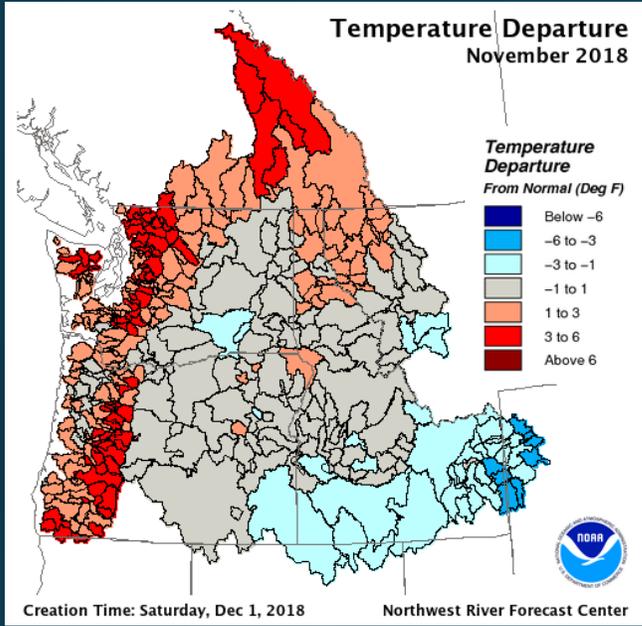
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- Summary

Model Inputs



Monthly Temperature Departure

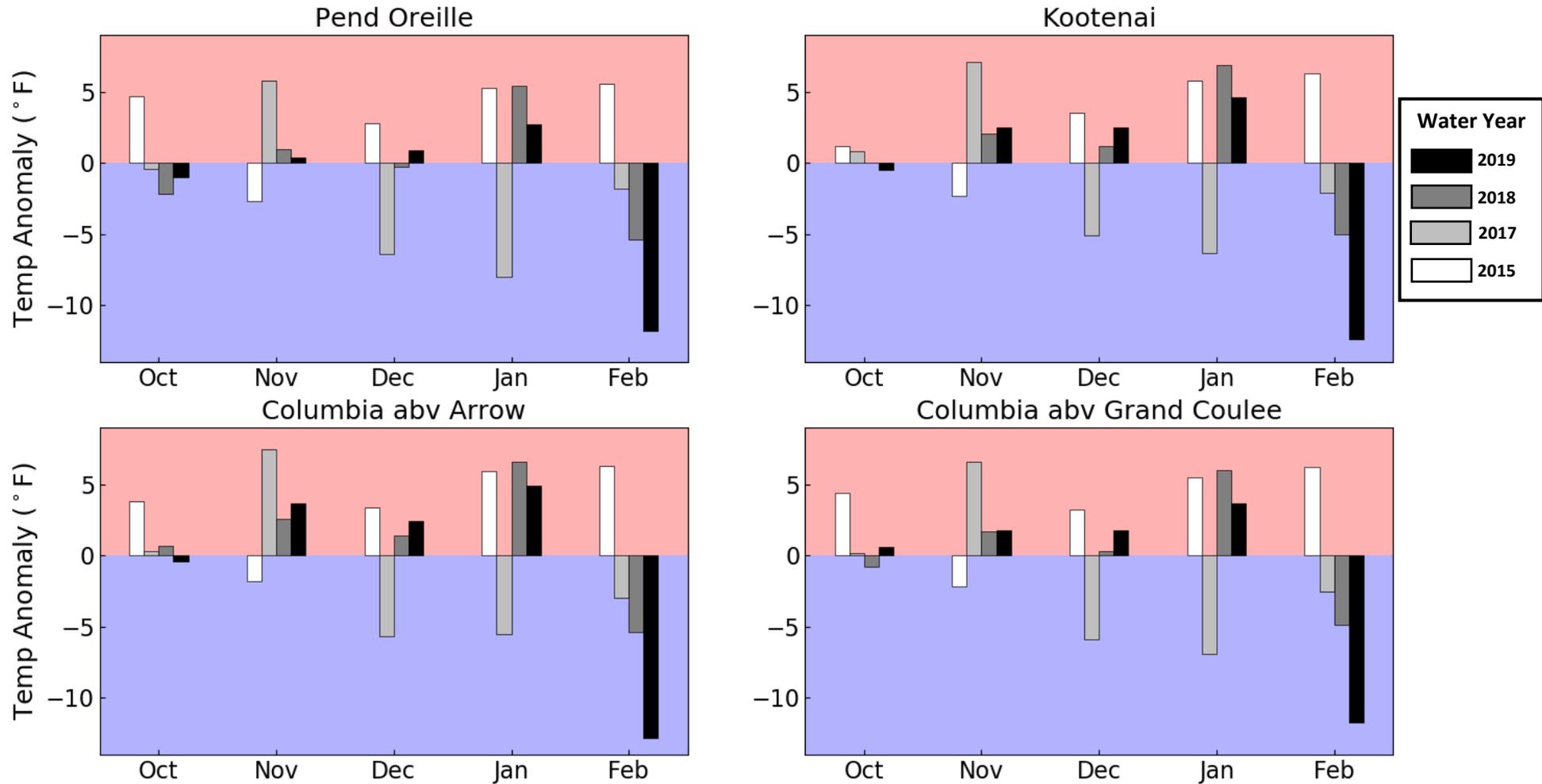




Monthly Temperature Anomaly



Upper Columbia



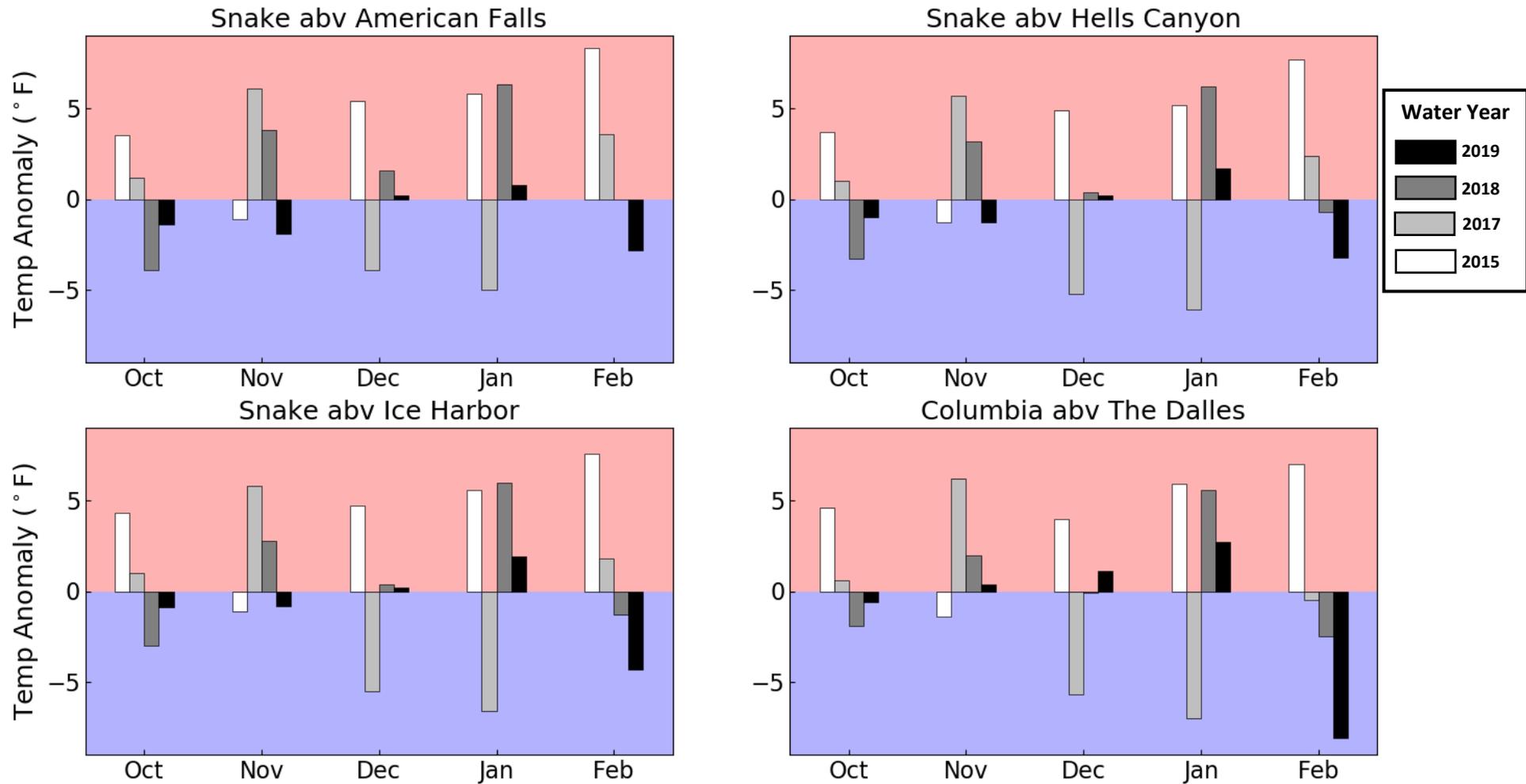
Data as of March 1, 2019



Monthly Temperature Anomaly



Snake River



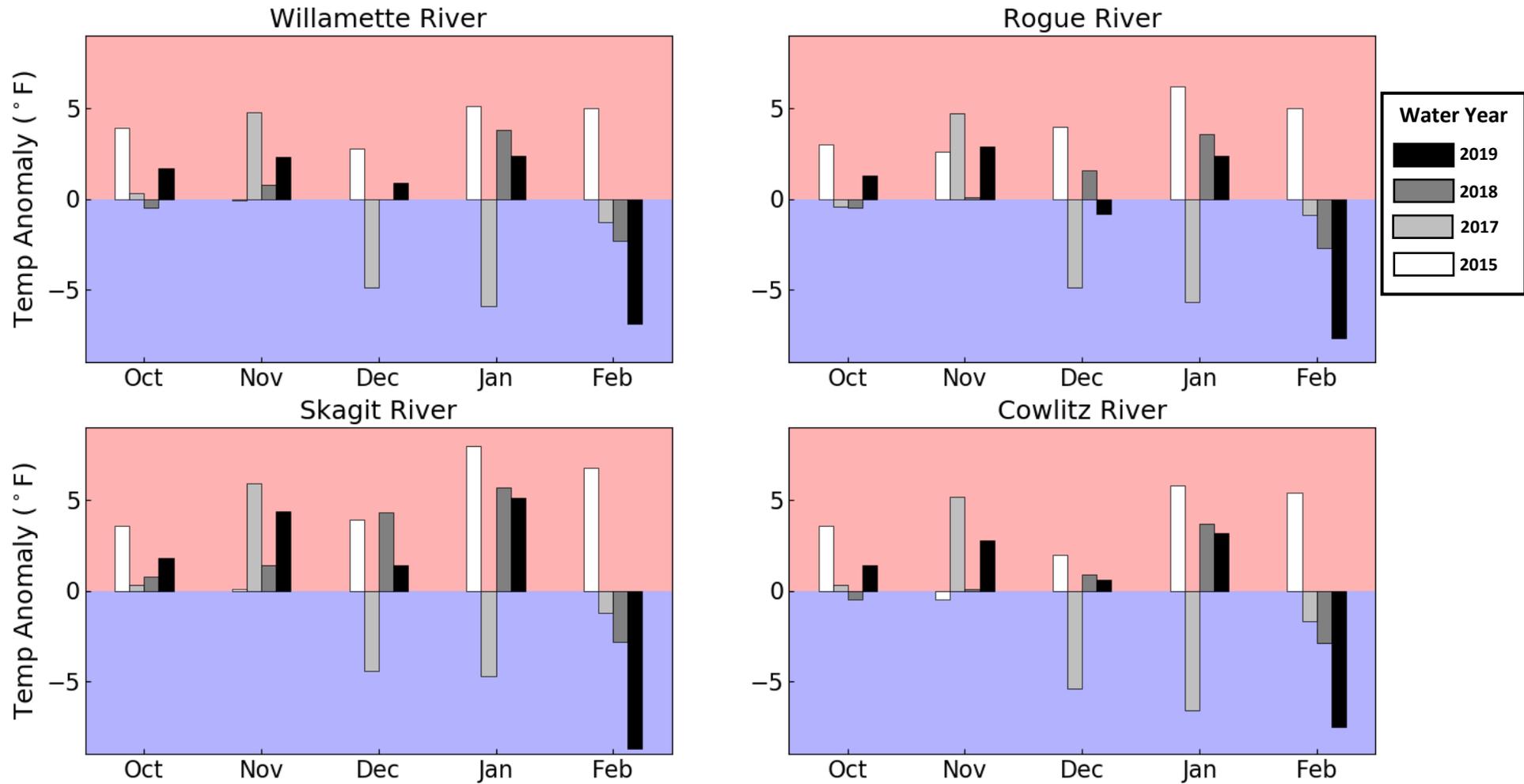
Data as of March 1, 2019



Monthly Temperature Anomaly



Westside Basins

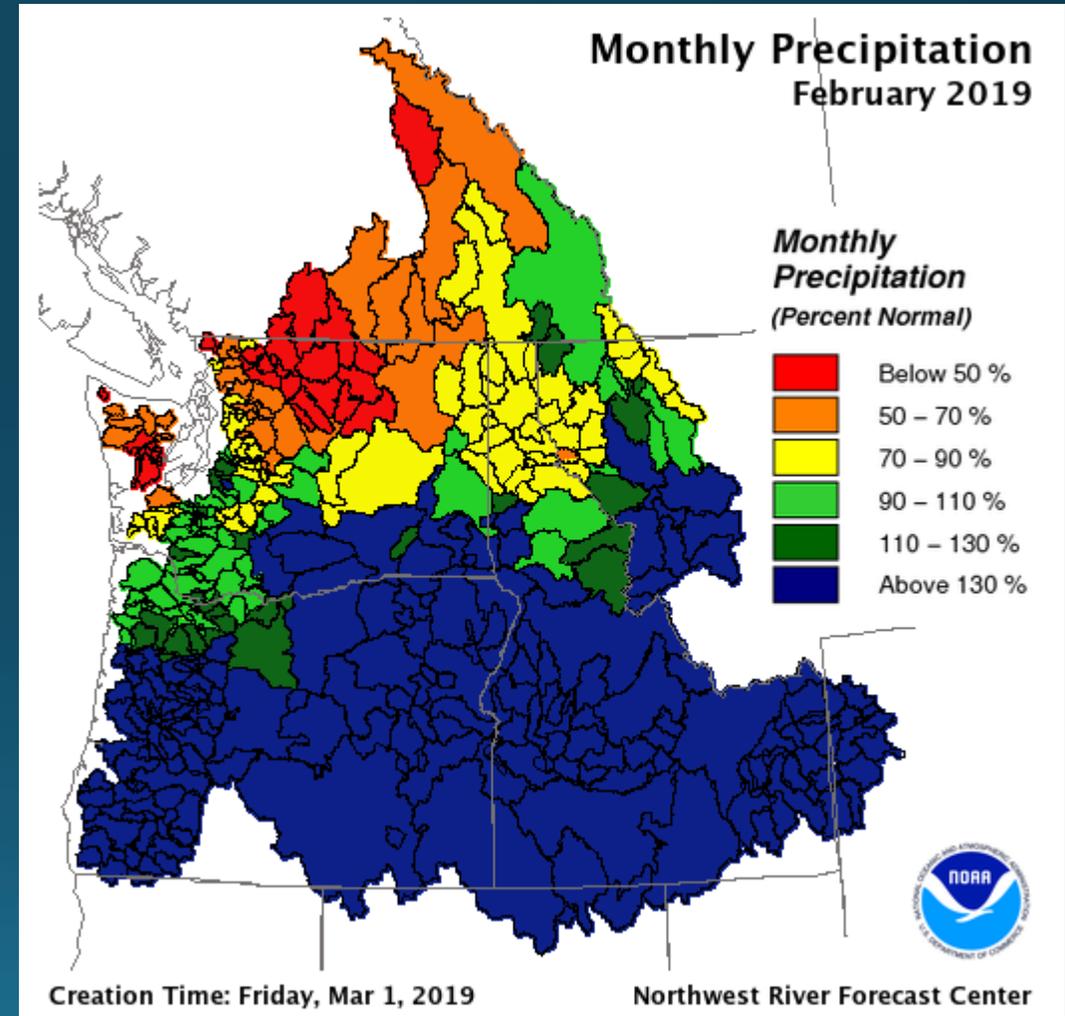
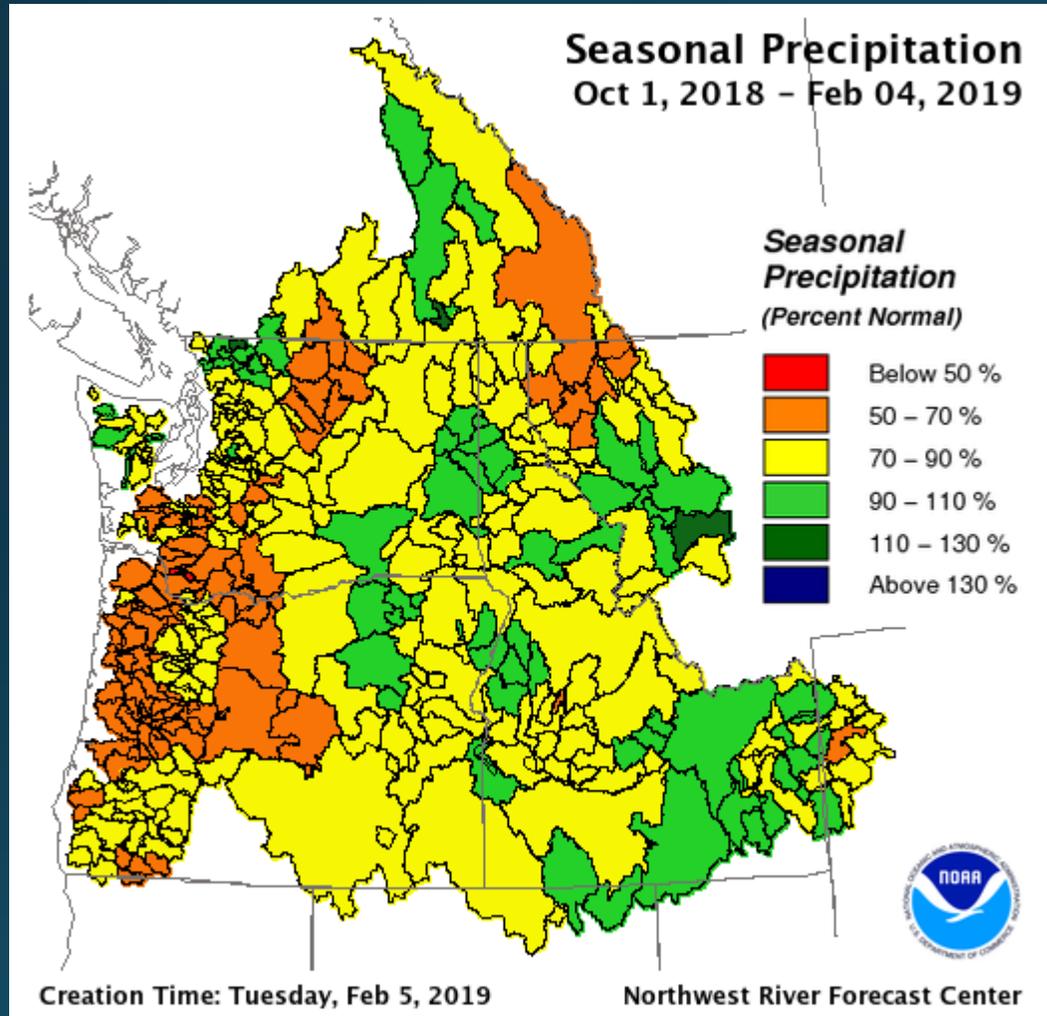


Data as of March 1, 2019



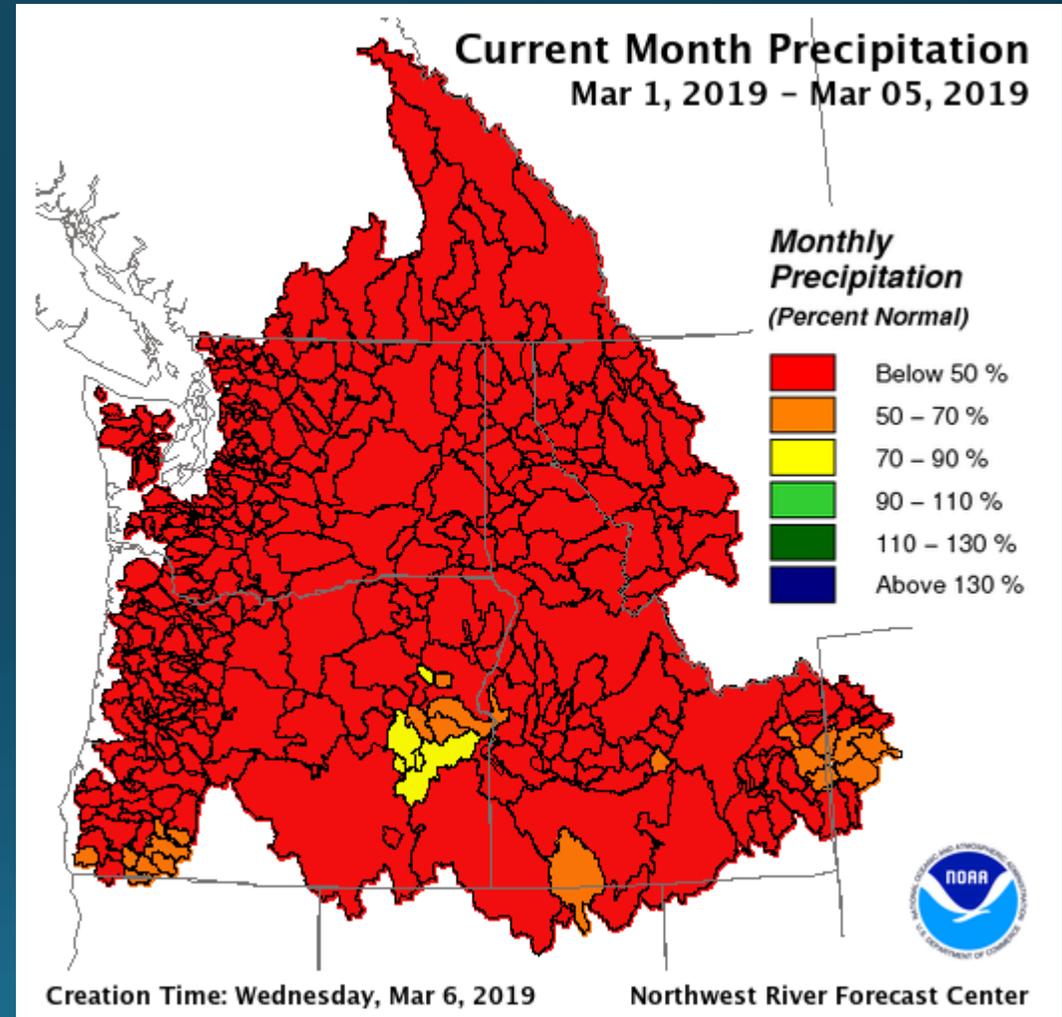
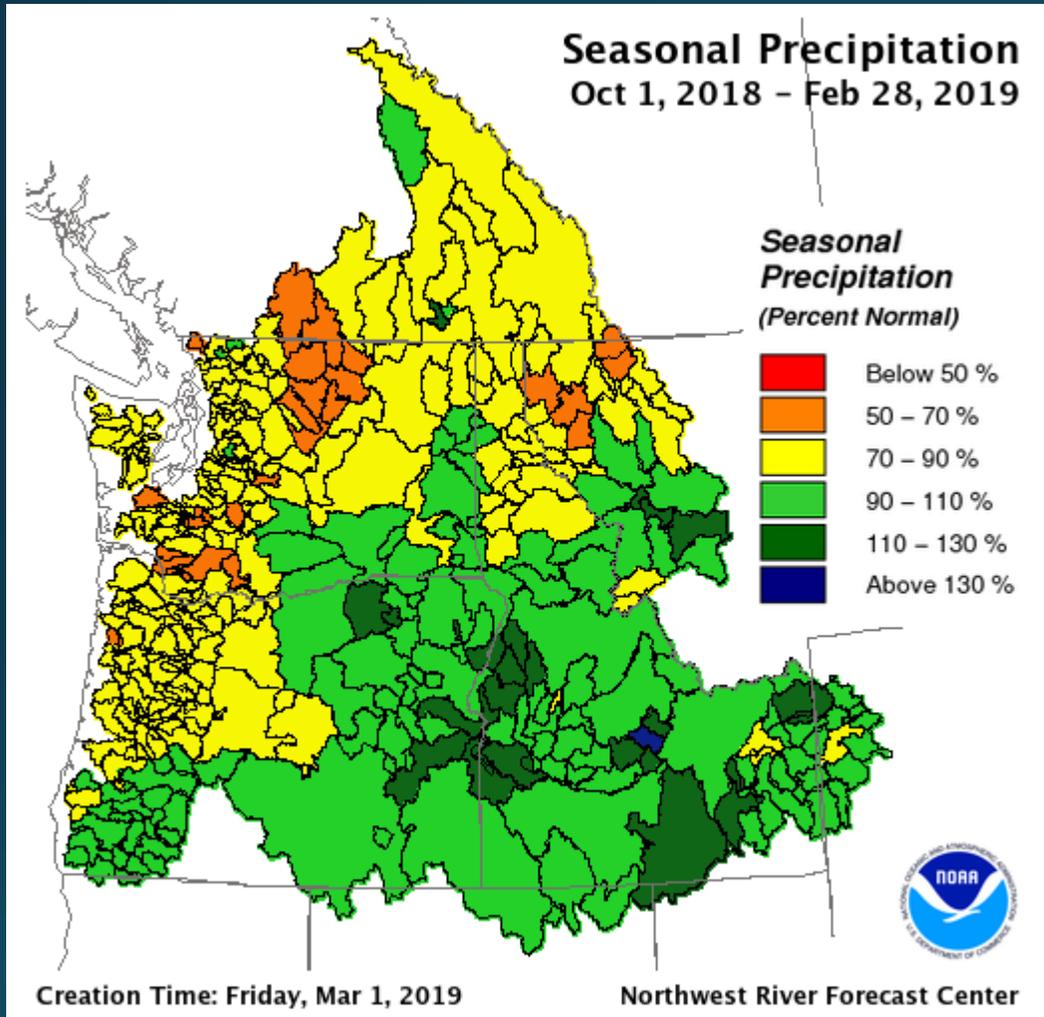
Observed % Normal Seasonal Precipitation

(Slide from February 7, 2019 WS Briefing)



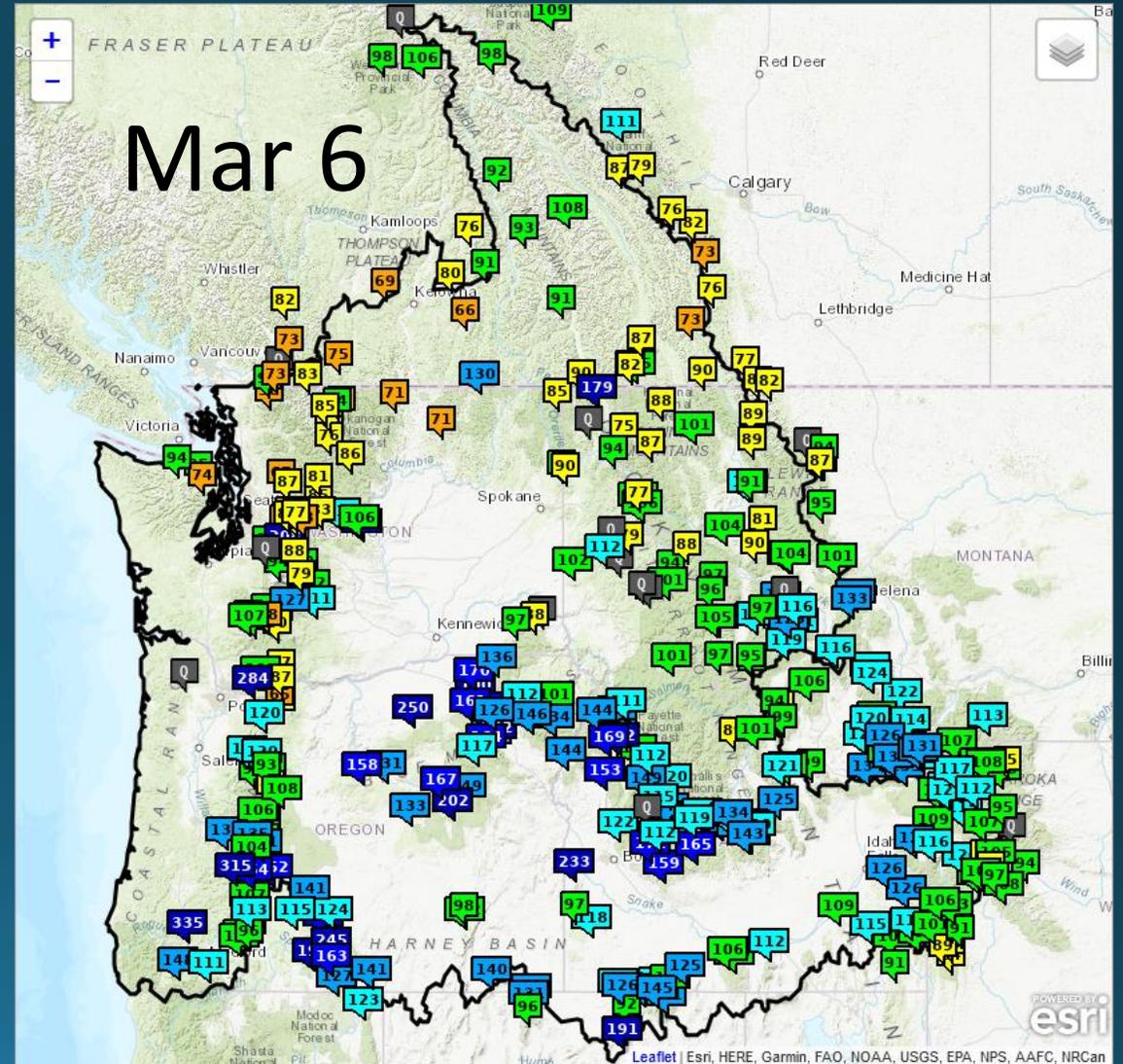
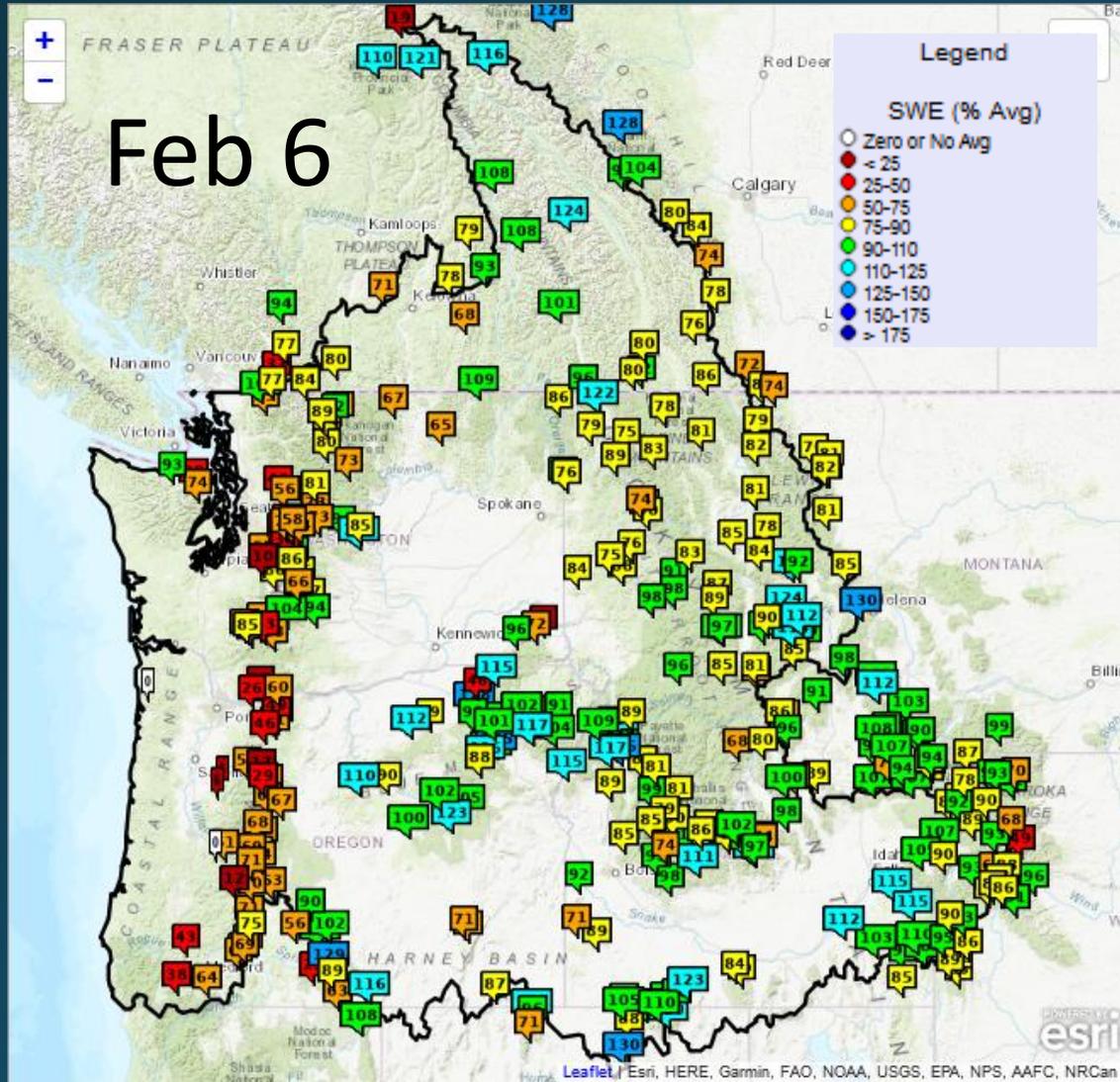


Observed % Normal Seasonal Precipitation





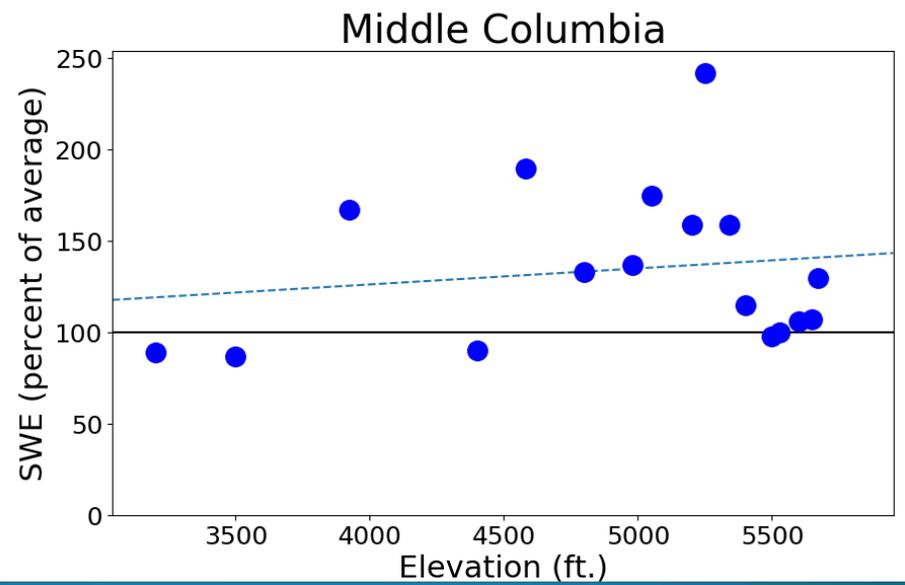
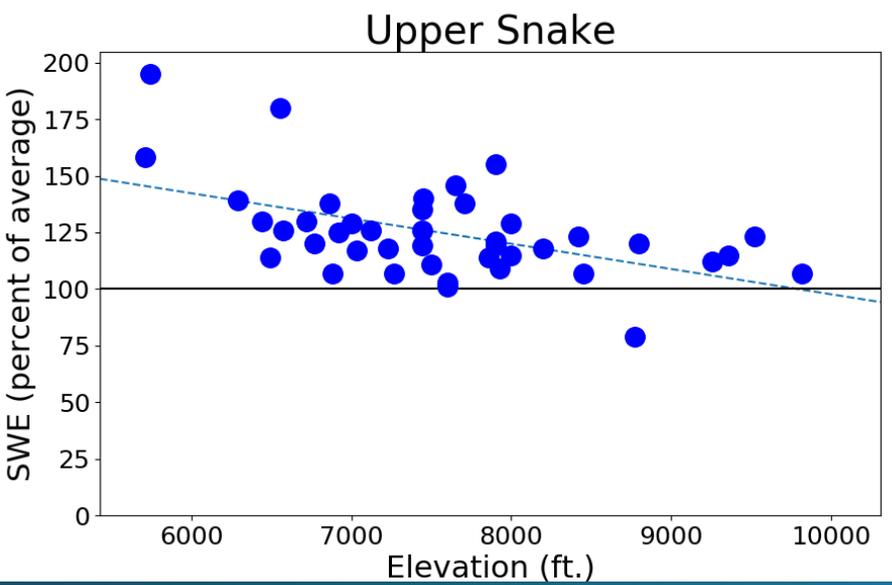
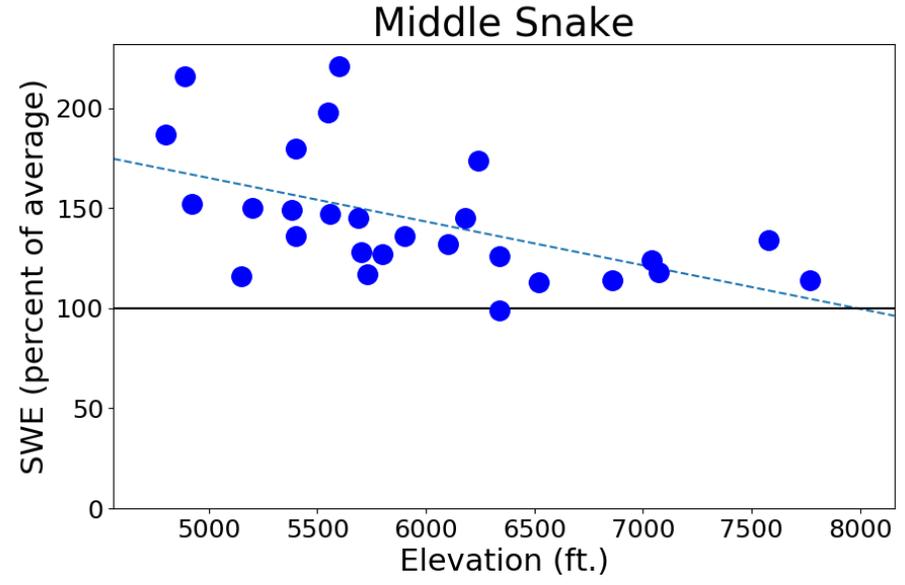
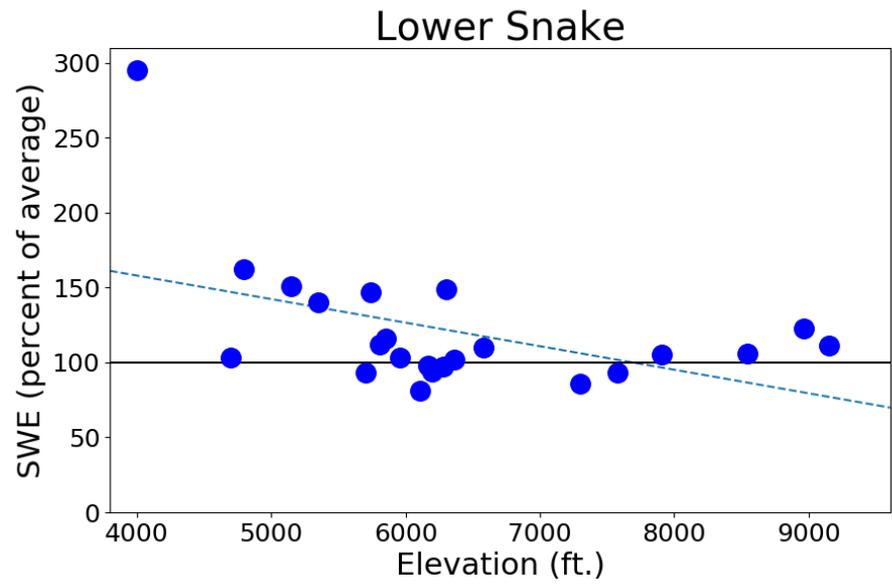
Snowpack and Seasonal Precipitation



Snow data from NRCS, BC Hydro, and Alberta EP.



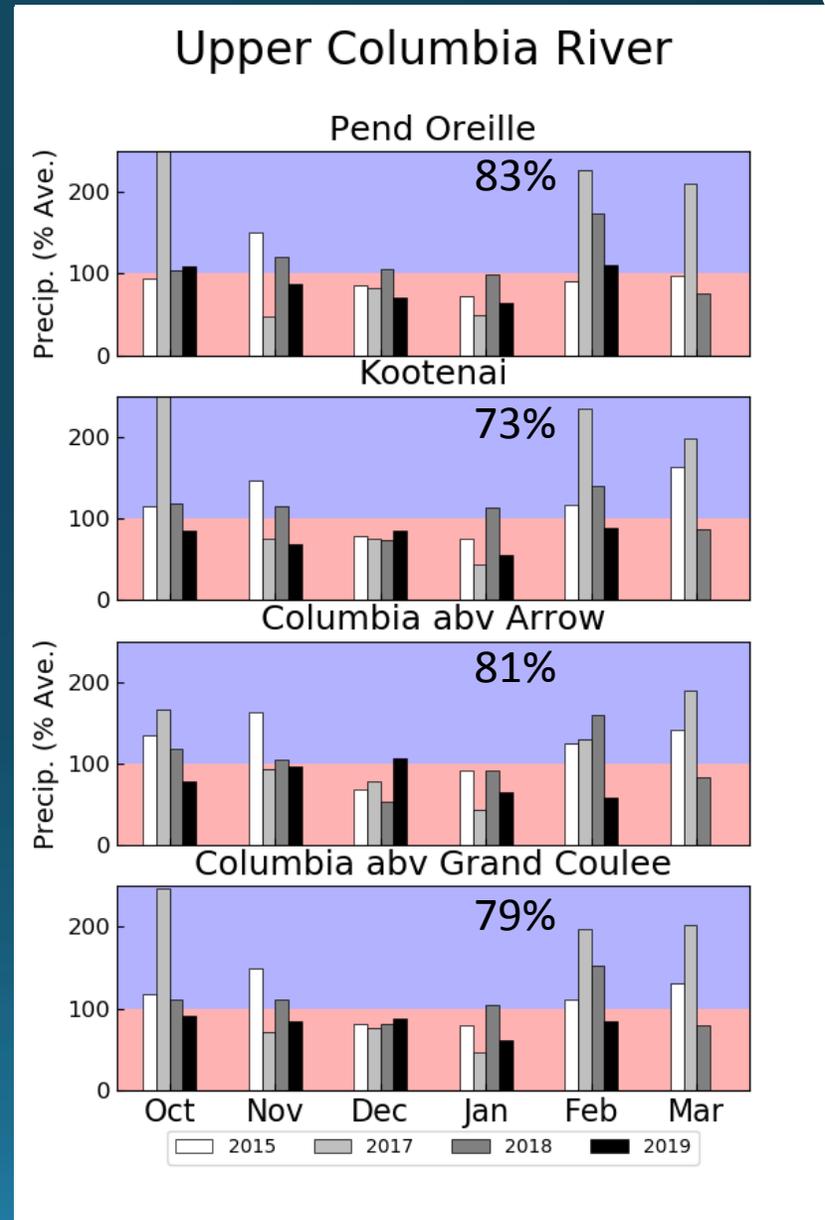
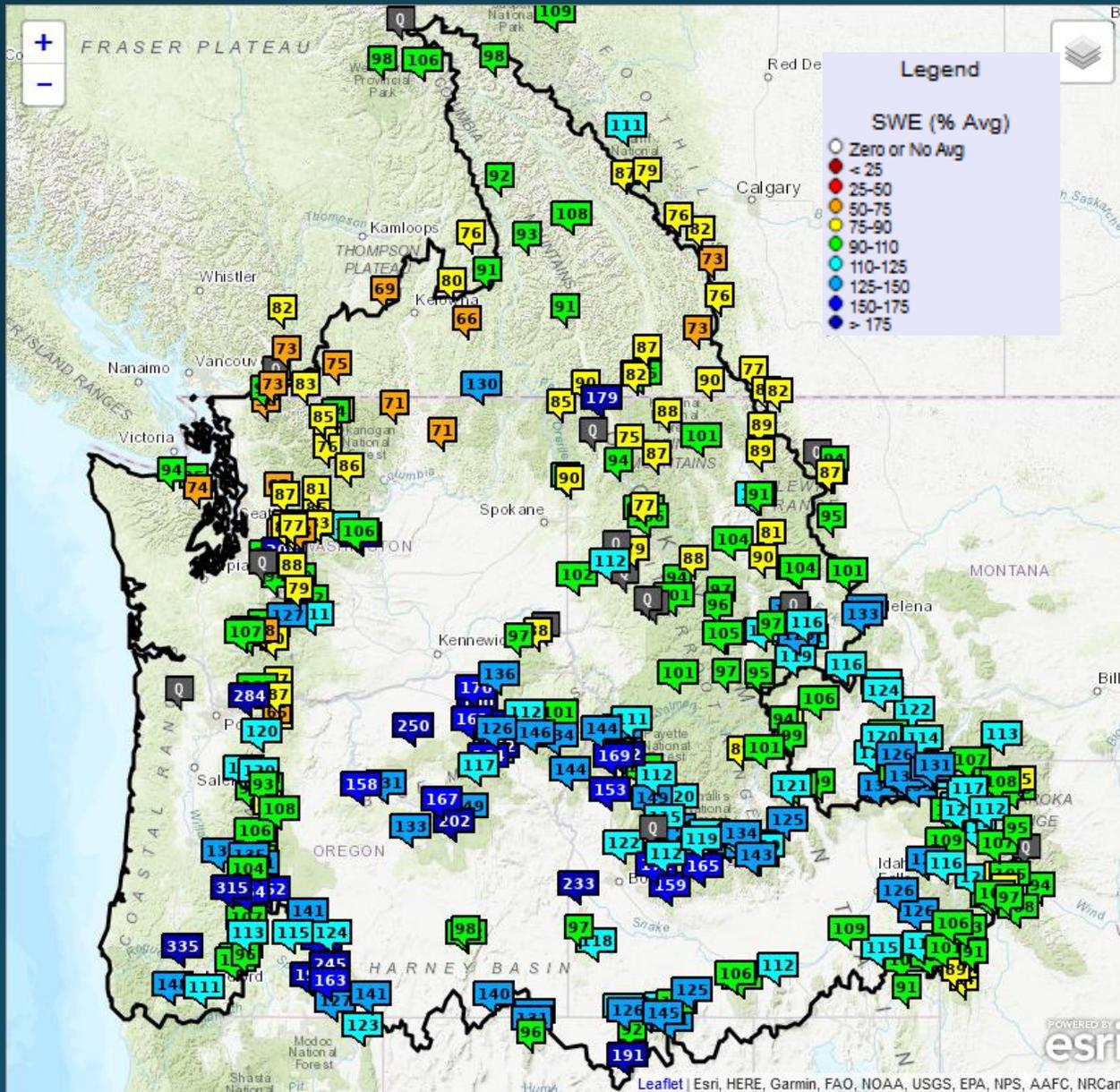
SWE vs. Elevation (March 6, 2019)



Data as of March 1, 2019. Snow data from NRCS, BC Hydro, and Alberta EP.



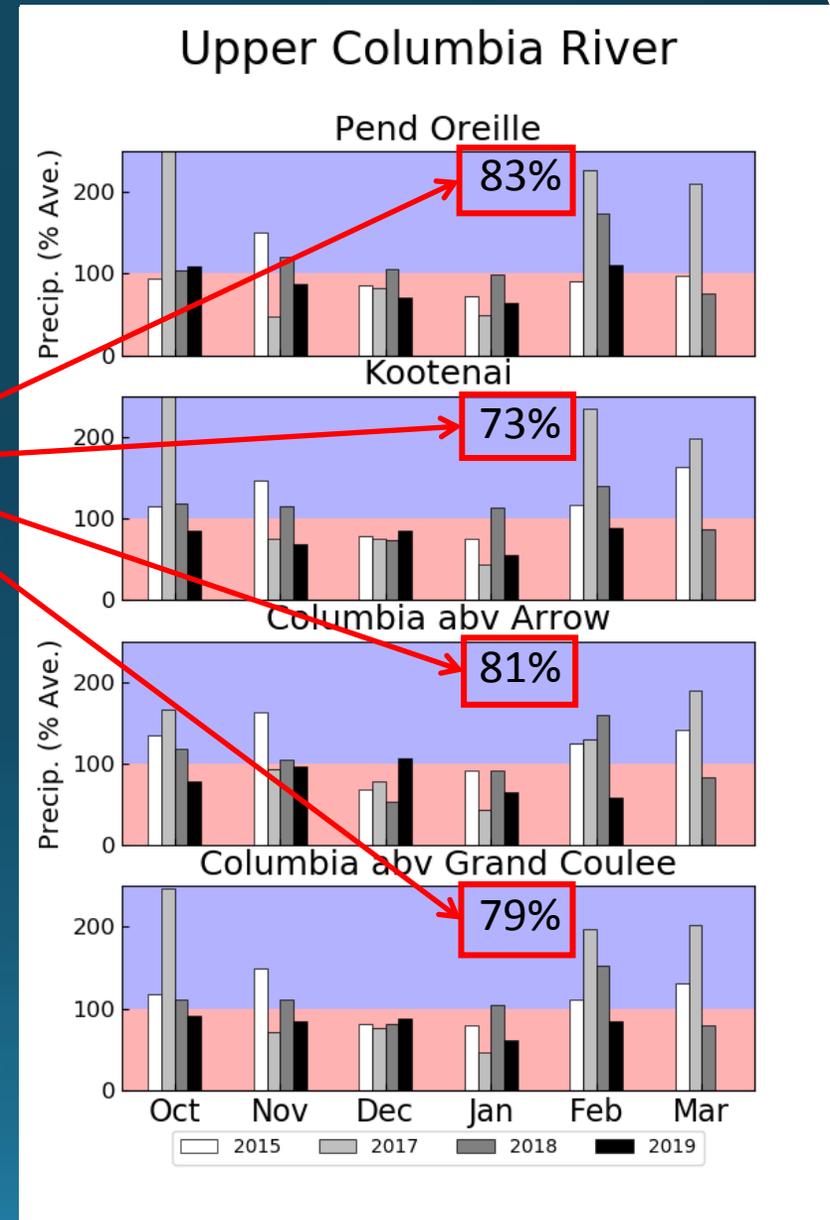
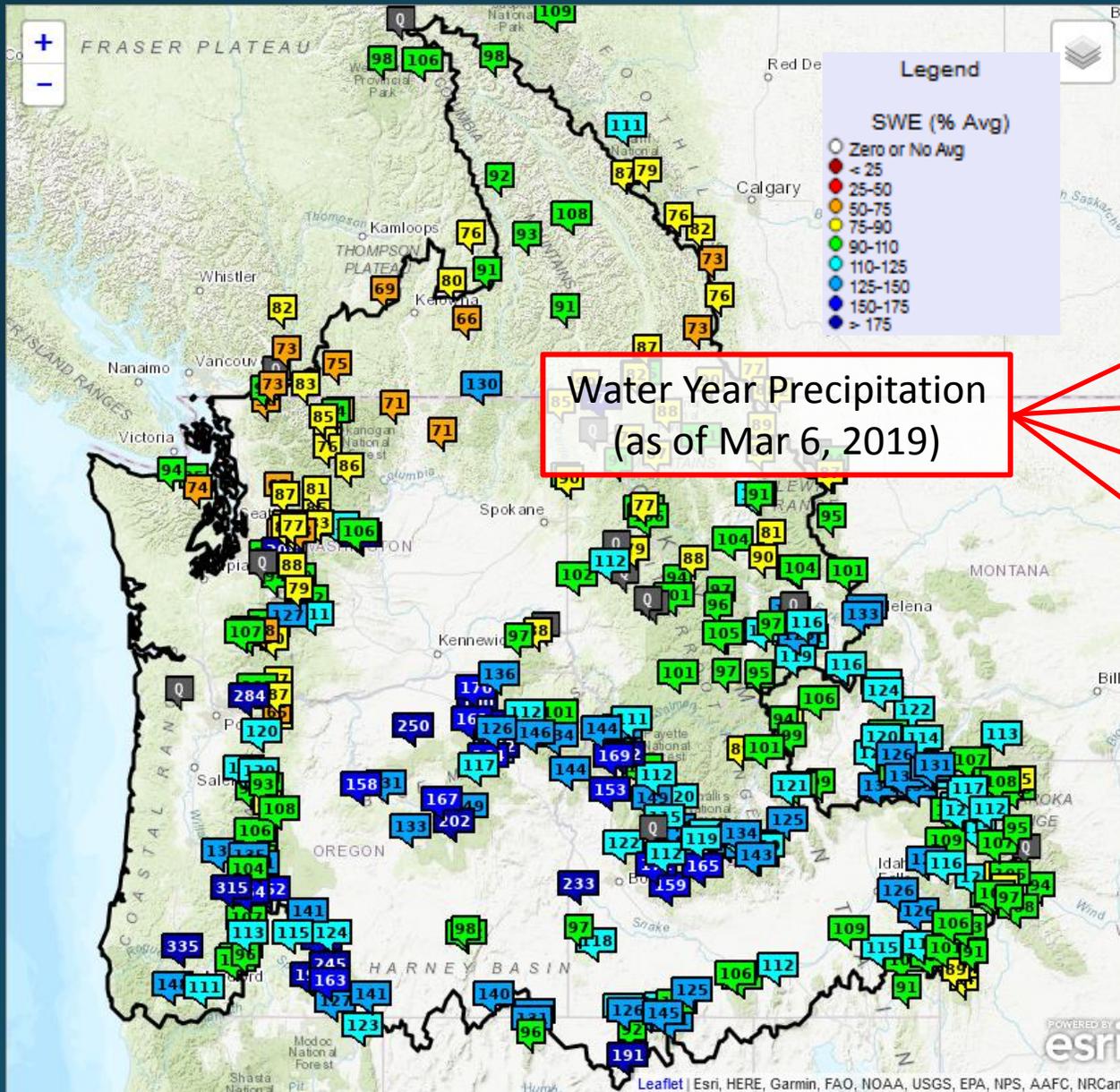
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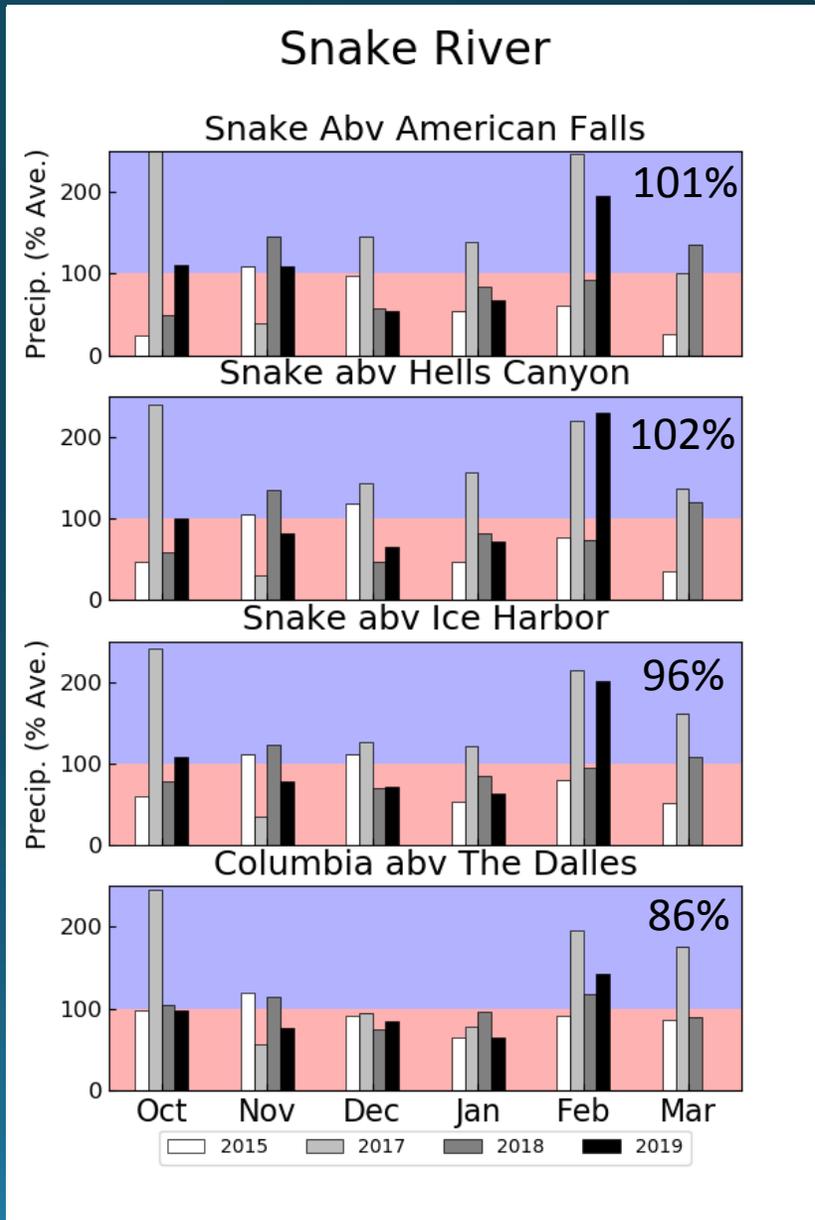
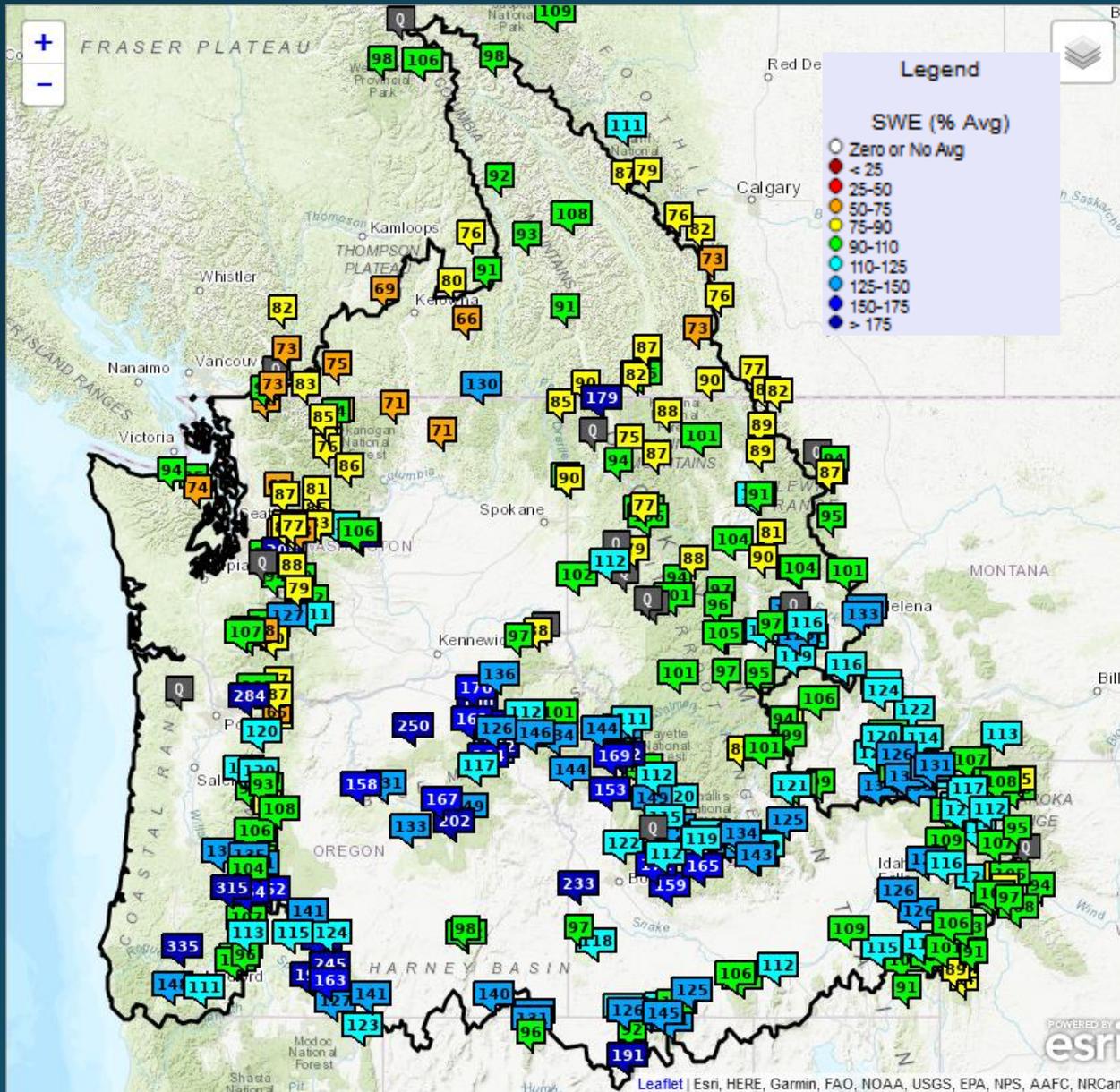
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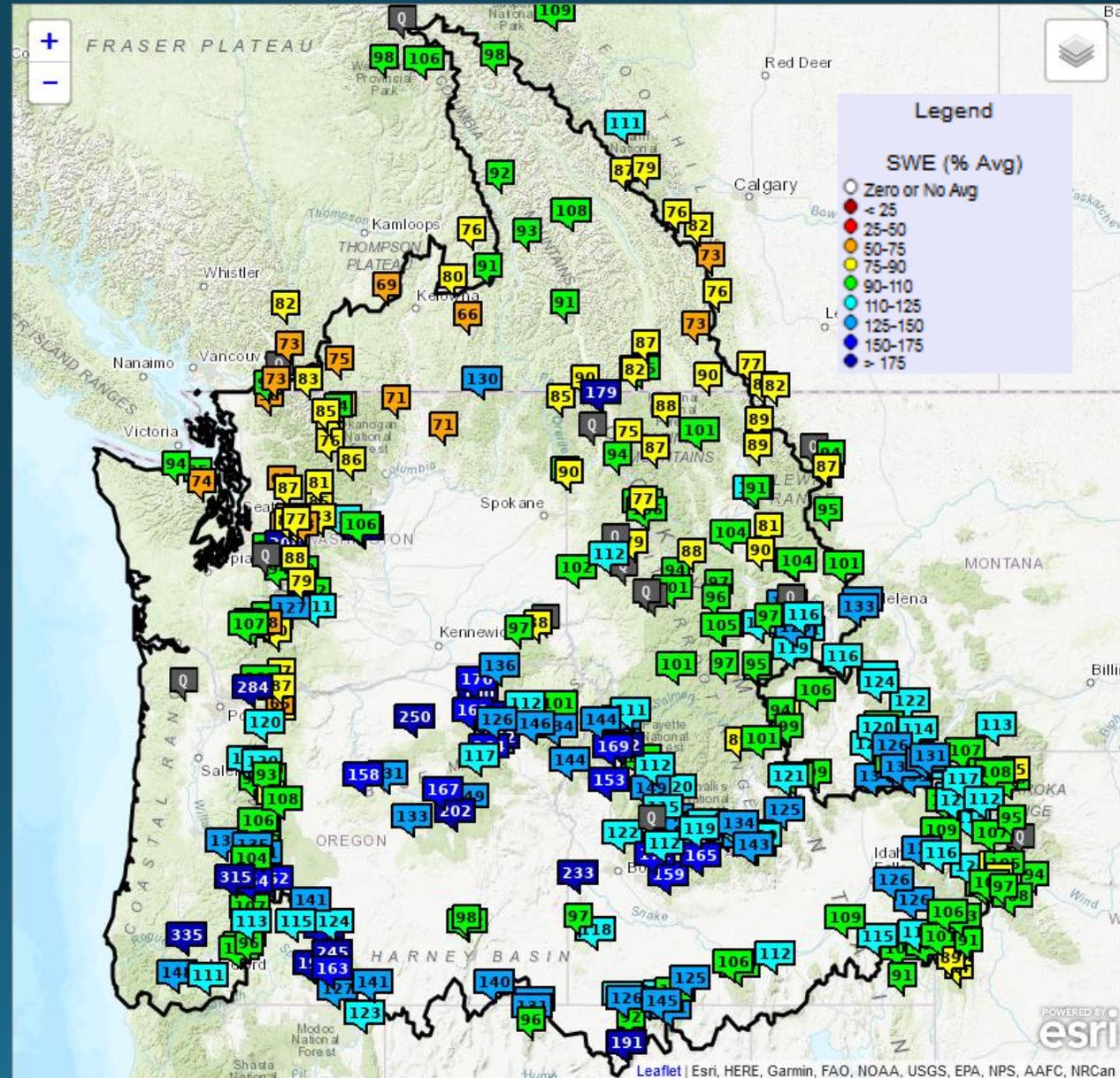
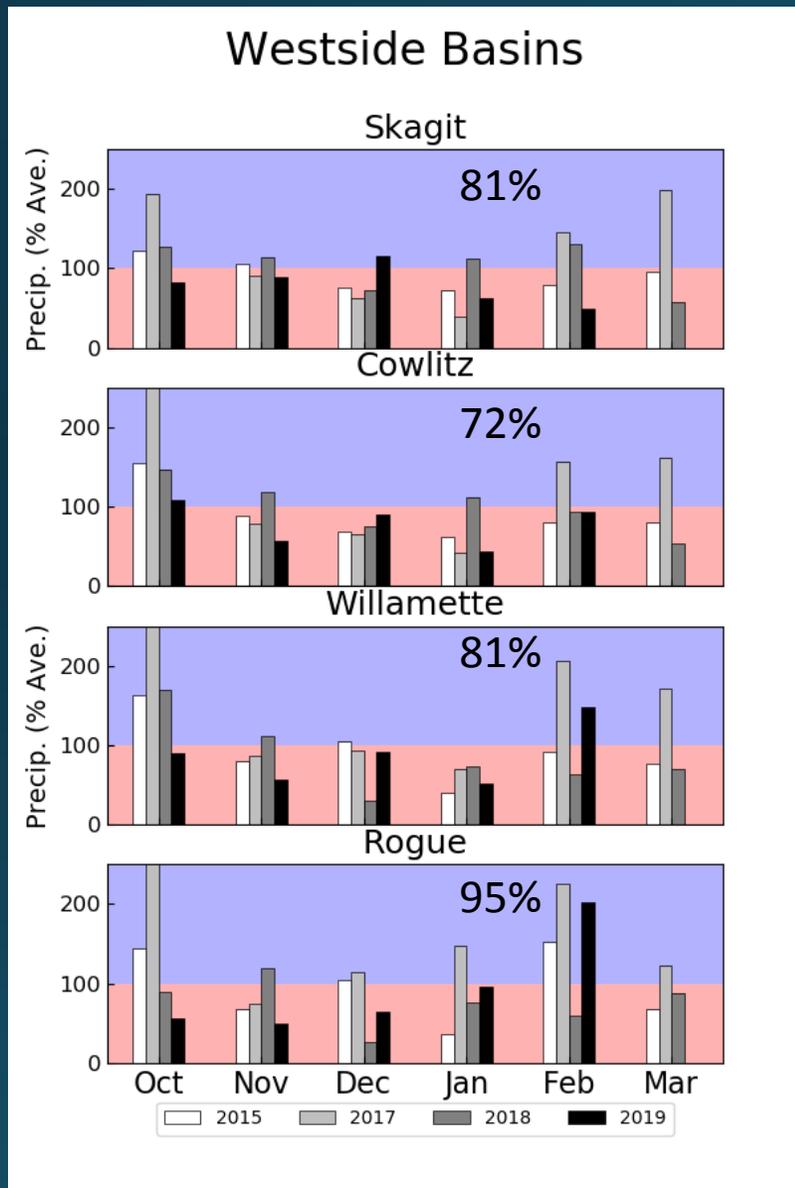
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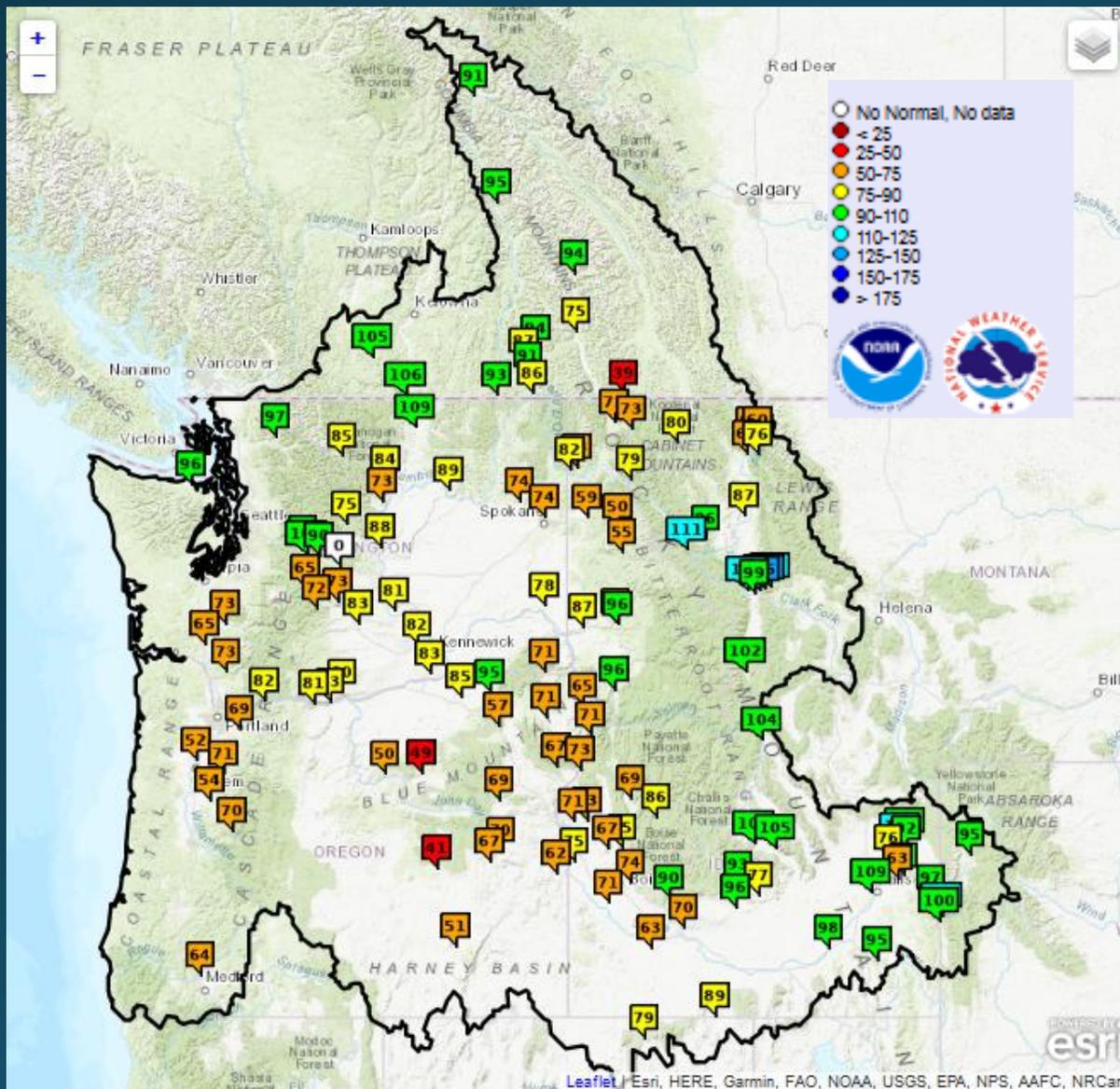


Data as of March 6, 2019. Snow data from NRCS, BC Hydro, and Alberta EP.



Current Adjusted Runoff Conditions

(Slide from February 7, 2019 WS Briefing)



% 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

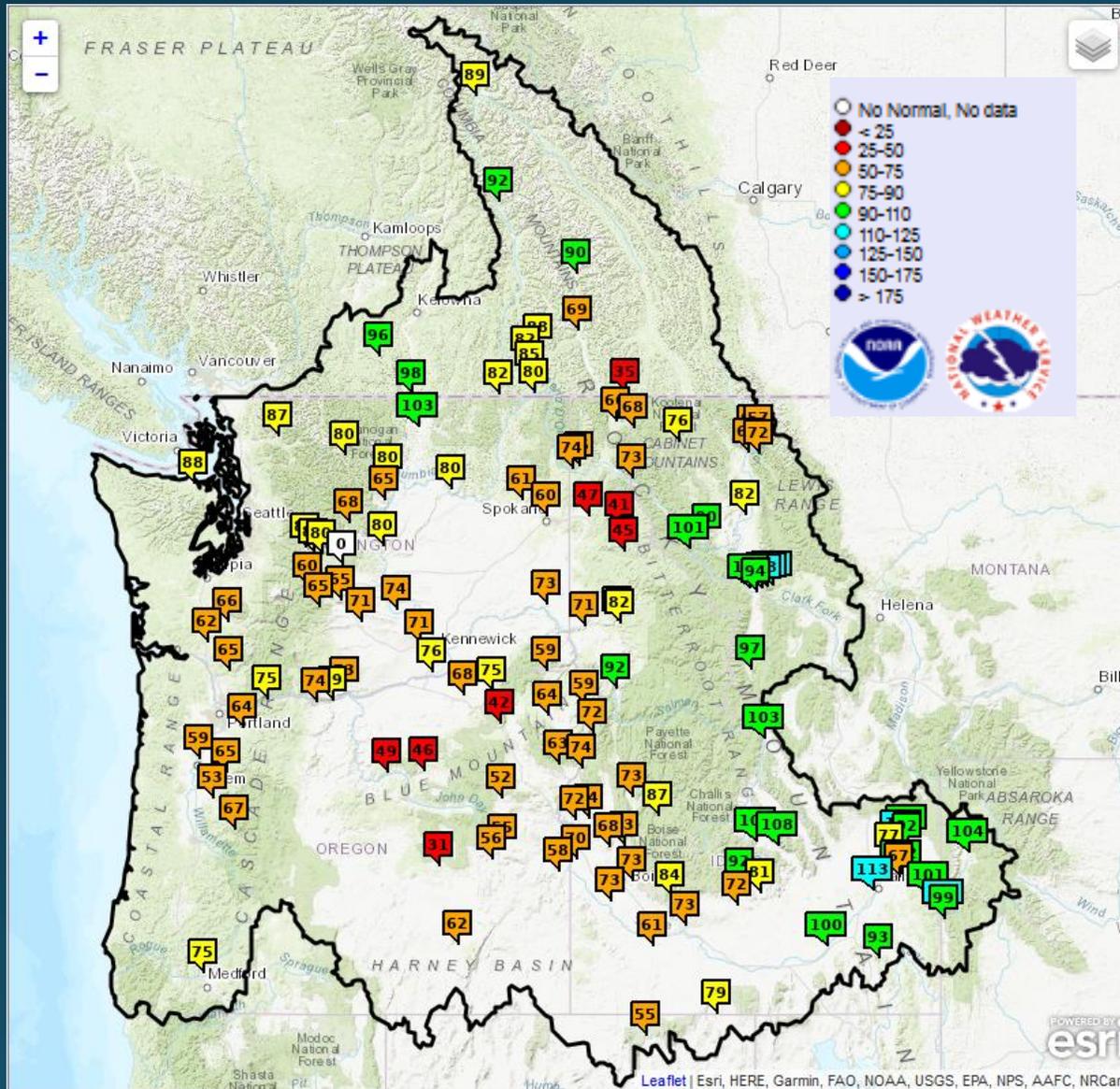
JACKSON LAKE	96
PALISADES	100
DWORSHAK	72
LOWER GRANITE	78

LOWER COLUMBIA BASIN

THE DALLES	81
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Current Adjusted Runoff Conditions



% of Normal Oct 1– Mar 11

UPPER COLUMBIA BASIN

MICA	89
DUNCAN	90
QUEENS BAY	69
LIBBY	76
HUNGRY HORSE	72
GRAND COULEE	80

SNAKE RIVER BASIN

JACKSON LAKE	104
PALISADES	99
DWORSHAK	59
LOWER GRANITE	73

LOWER COLUMBIA BASIN

THE DALLES	74
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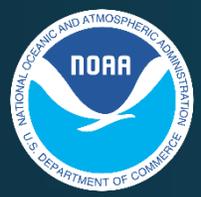
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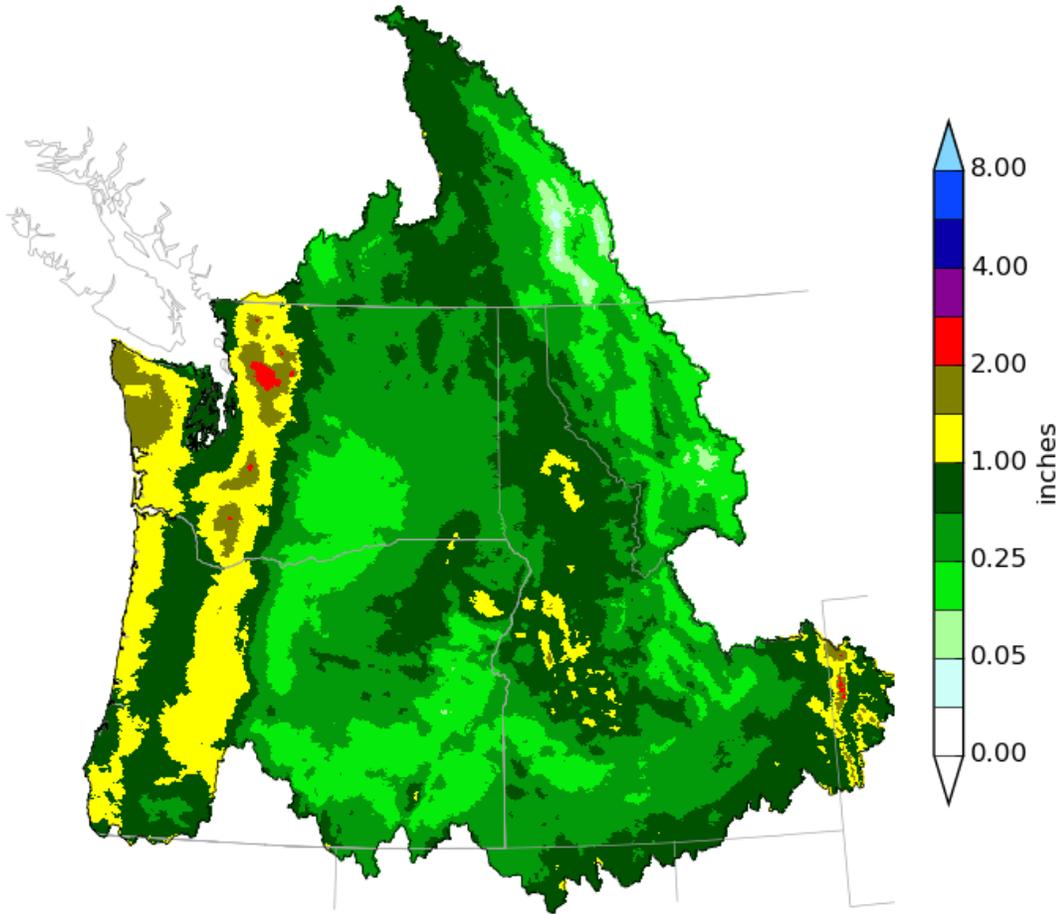


Cumulative 10 Day Precipitation Forecast

March 6-16, 2019



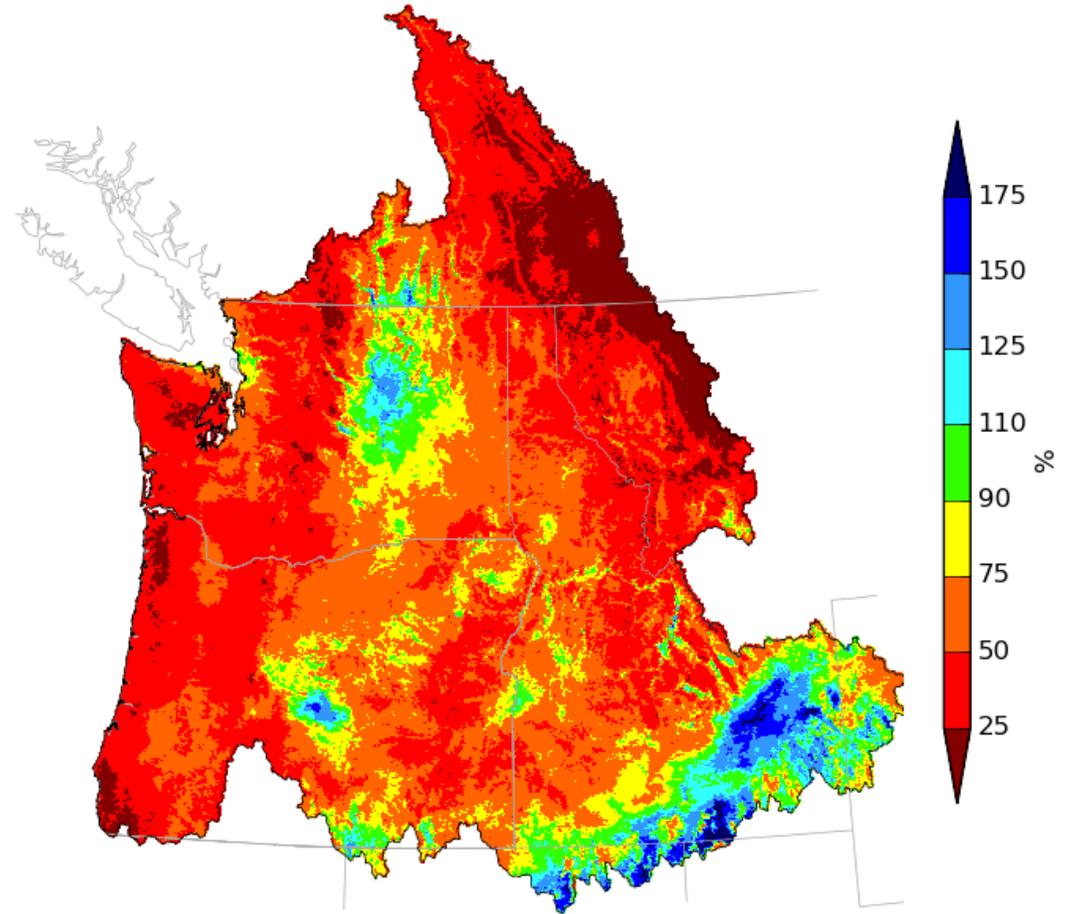
Northwest River Forecast Center
10 Day QPF, Ending 12Z, 03/16/19



Creation Time: Wed Mar 6 16:18:39 UTC 2019



Northwest River Forecast Center
10 Day QPF (Percent of Climatology), Ending 12Z, 03/16/19



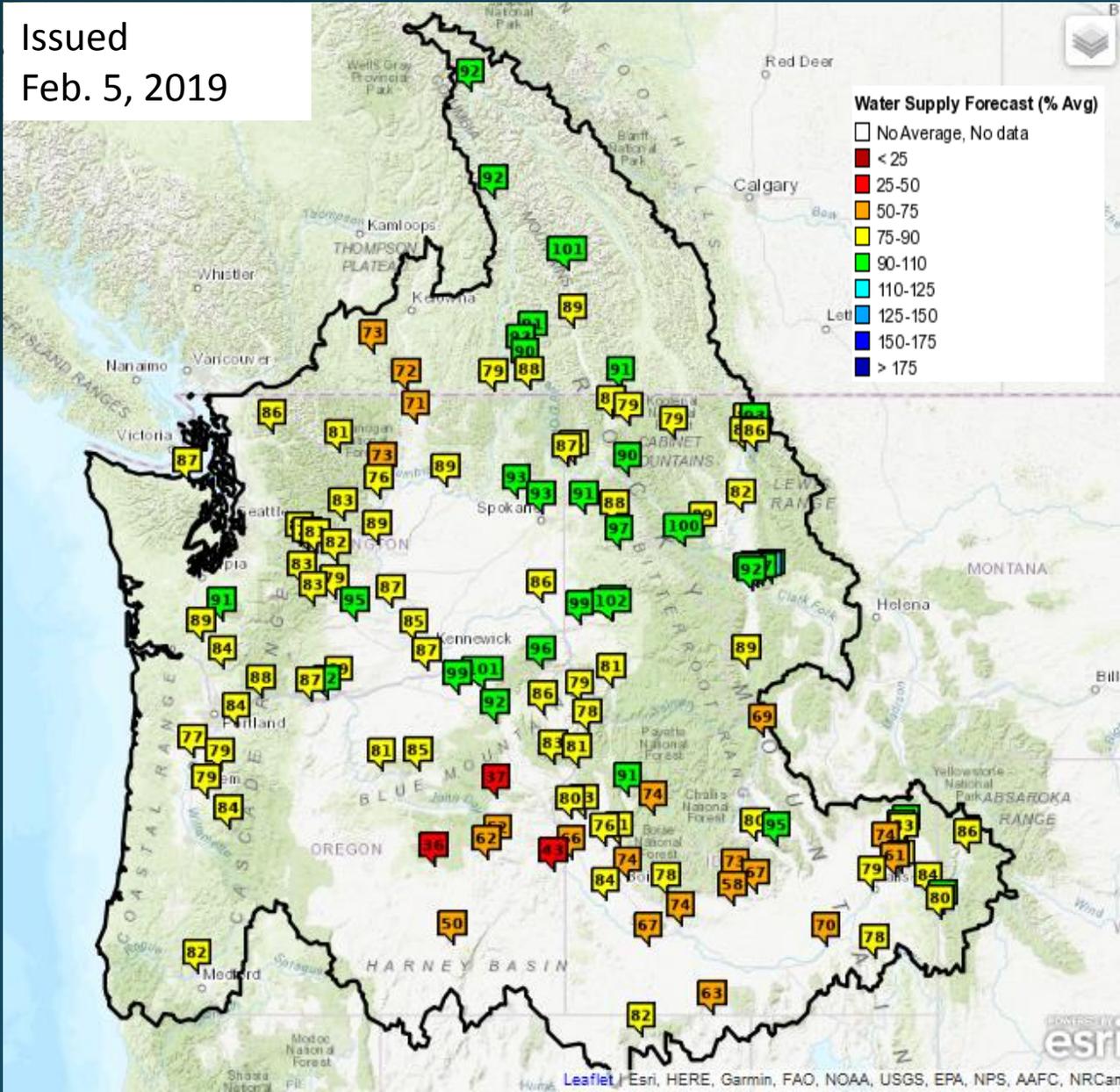
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ESP10 Apr-Sep Water Supply Forecasts



Issued
Feb. 5, 2019



(Slide from February 7, 2019 WS Briefing)

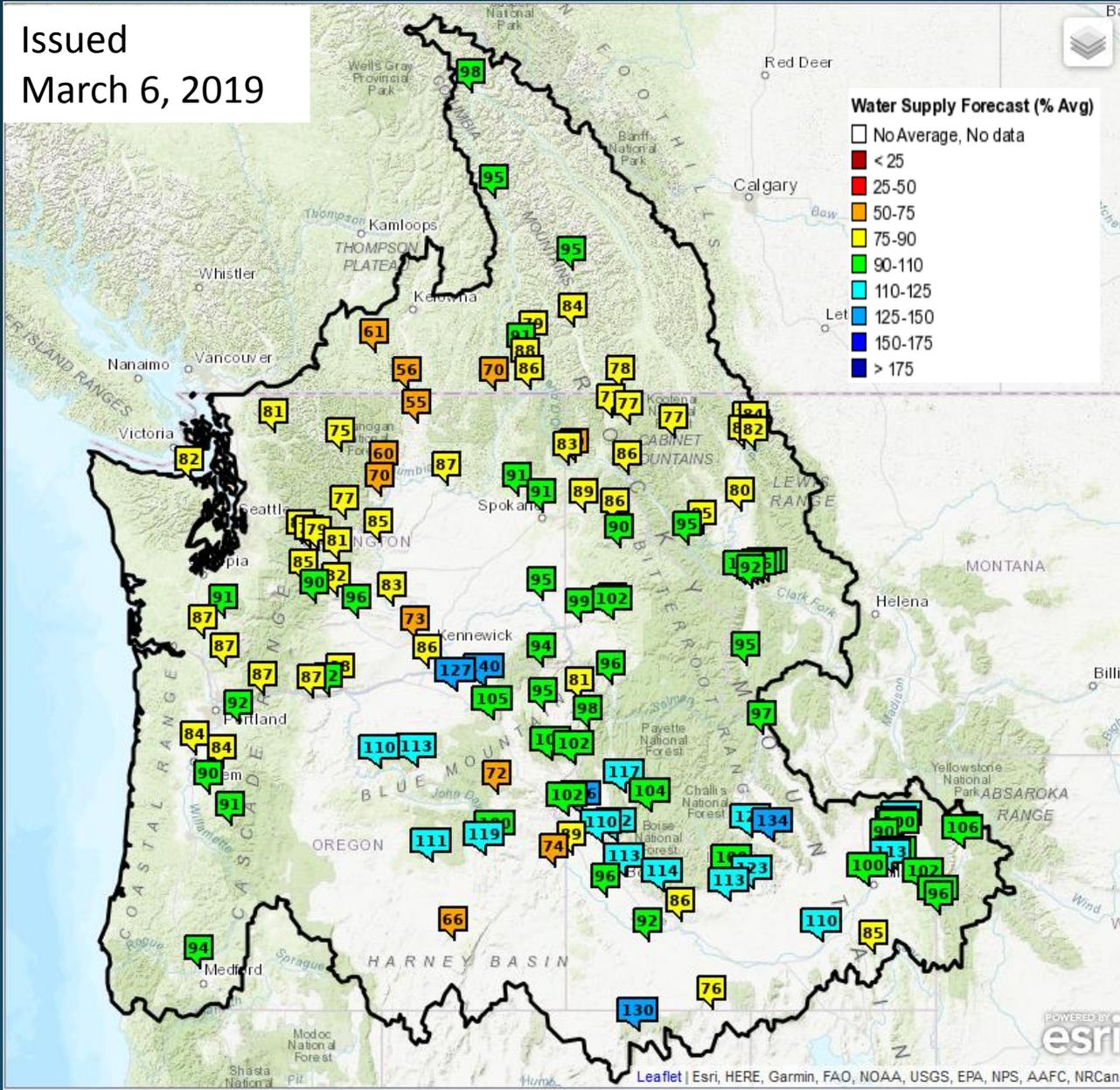
Basin	% 30 yr Normal
Columbia River - Mica Dam	92%
Kootenai River - Libby Dam	79%
Coeur d'Alene R - Coeur d'Alene Lake	91%
SF Flathead River - Hungry Horse Dam	86%
Clark Fork River - Above Missoula	107%
Bitterroot R - Above Missoula	92%
Pend Oreille R-Albeni Falls Dam	87%
Columbia River - Grand Coulee 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 Apr-Sep Water Supply Forecasts



Issued
March 6, 2019



Basin	% 30 yr Normal
Columbia River - Mica Dam	98% (+6)
Kootenai River - Libby Dam	77% (-6)
Coeur d'Alene R - Coeur d'Alene Lake	89% (-2)
SF Flathead River - Hungry Horse Dam	82% (-2)
Clark Fork River - Above Missoula	106% (-1)
Bitterroot R - Above Missoula	92% (--)
Pend Oreille R-Albeni Falls Dam	83% (-4)
Columbia River - Grand Coulee Dam	87% (-2)
Upper Snake River	
- Jackson Lake Dam	106% (+20)
- Palisades Dam	96% (+12)
- at Heise	103% (+19)
Middle Snake Tribs	
- Lucky Peak Dam	113% (+29)
- Owyhee Dam	74% (+31)
- Bruneau R nr Hot Springs	92% (+25)
NF Clearwater River-Dworshak Dam	94% (--)
Lower Snake River-Lower Granite Dam	95% (+9)
Lower Columbia - The Dalles Dam	87% (--)

(change in % since Feb 5, 2019 in parenthesis)



ESP10 Natural Apr-Sep Forecasts

ESP Natural - Western Oregon and Washington



Feb. 5, 2019



MAR 6, 2019



Basin

% 30 yr Normal

Skagit River near Concrete	84% (-3)
Green River Howard Hanson Res	86% (+1)
Cowlitz River Mossyrock Reservoir	90% (+1)
Cowlitz River Mayfield Reservoir	89% (--)
North Santiam At Mehama	95% (+13)
Willamette River At Salem	81% (+7)
Rogue River Applegate Reservoir	113% (+28)



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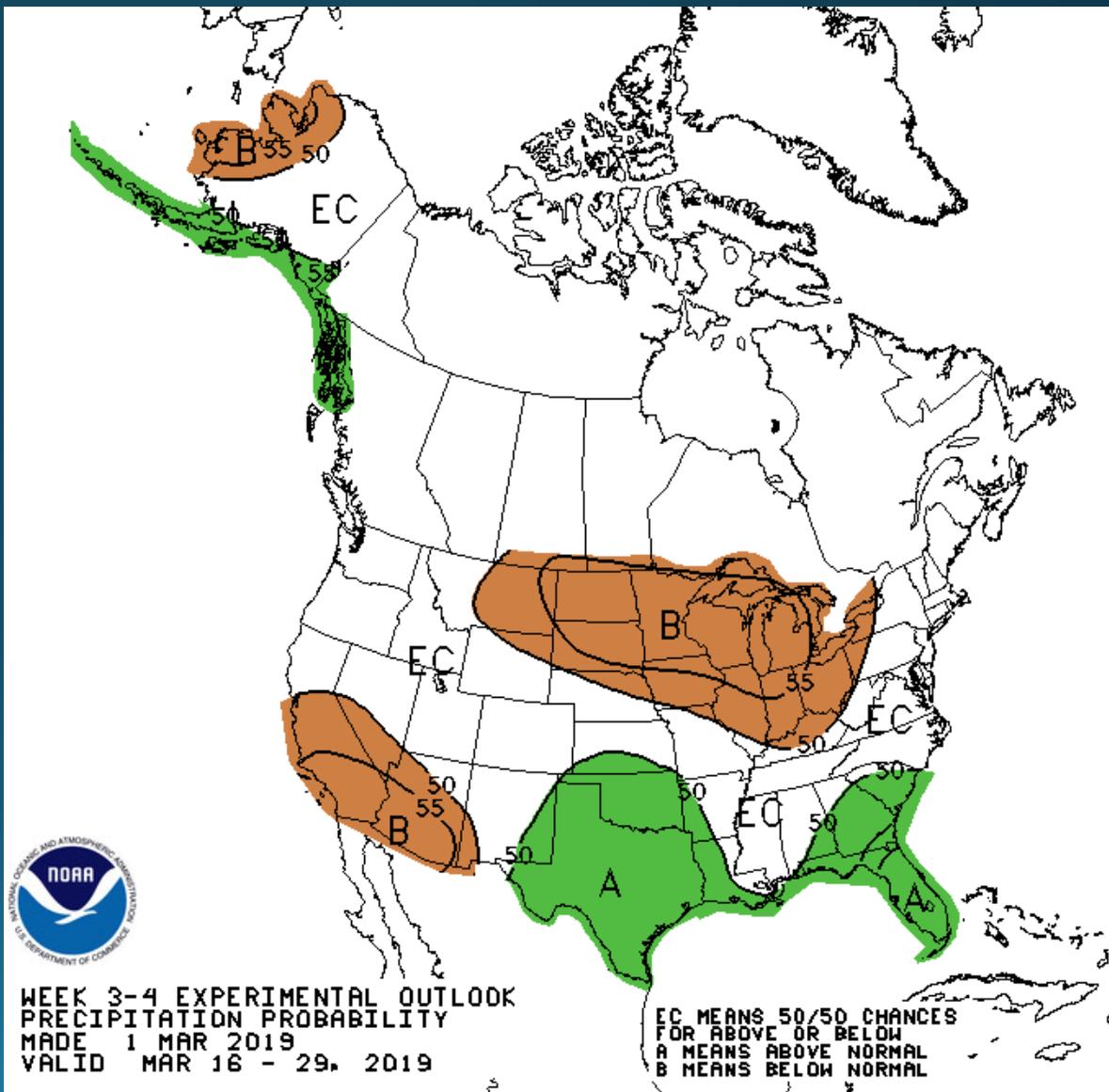
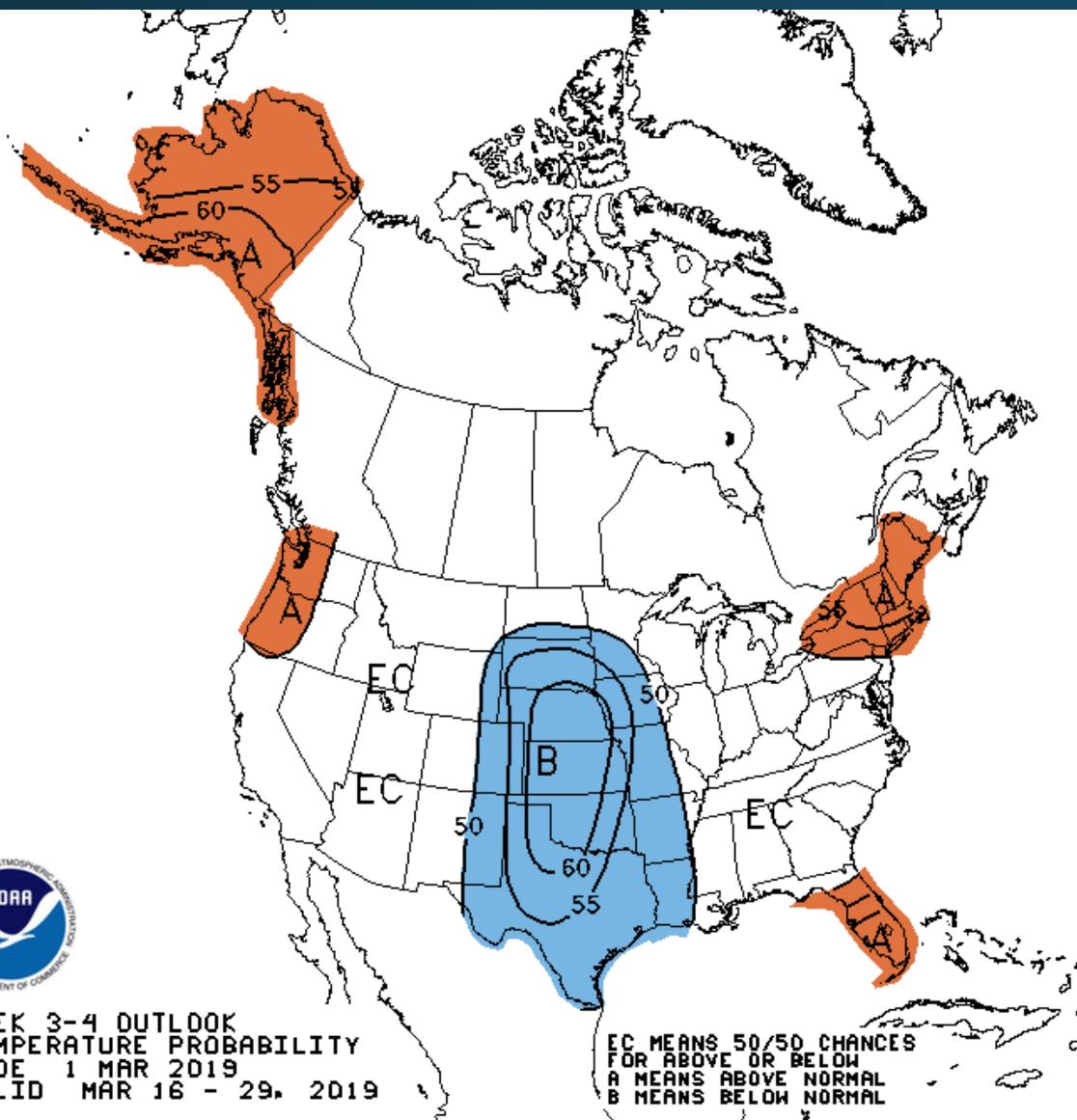
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3-4 Week CPC Outlook

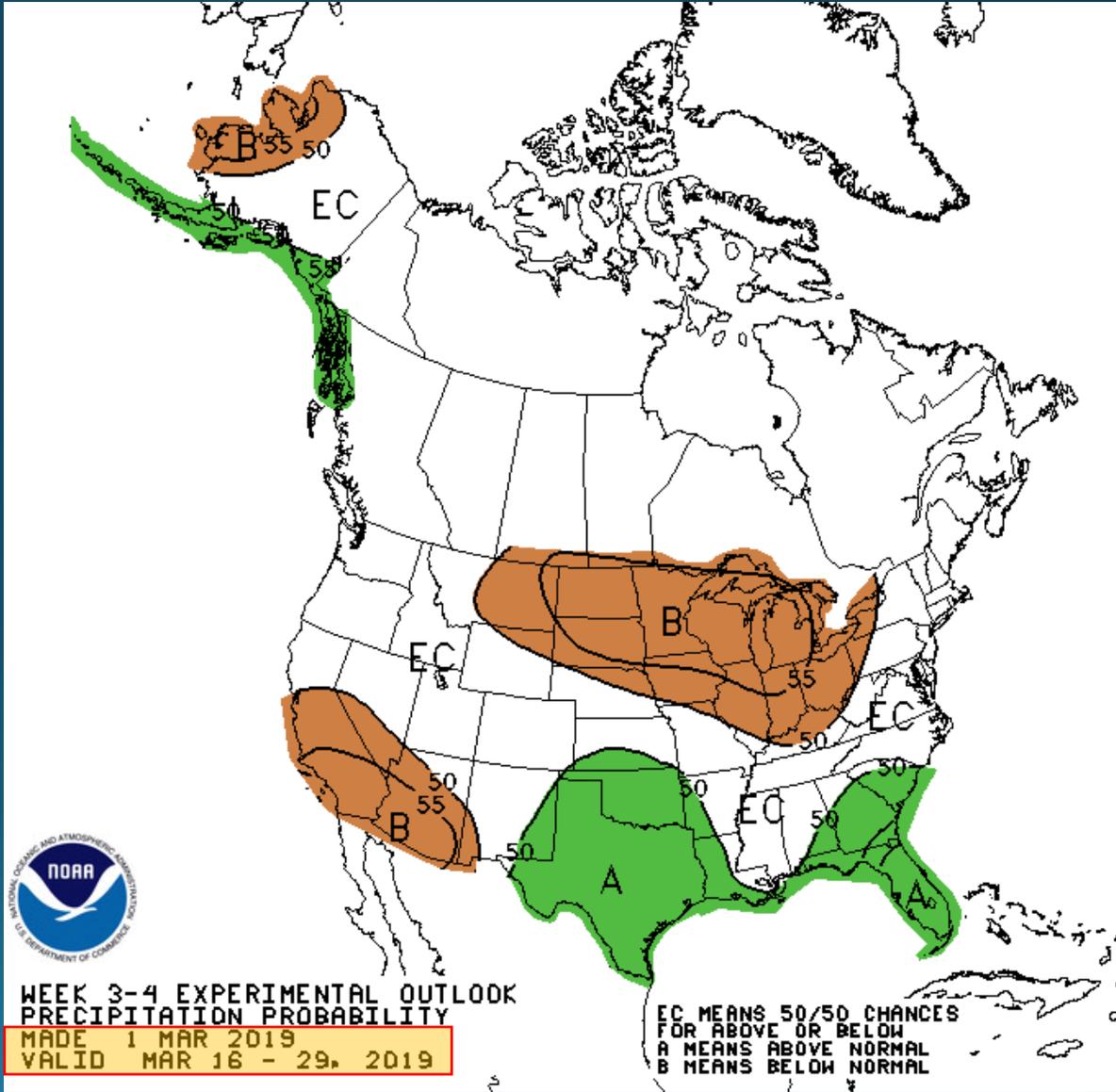
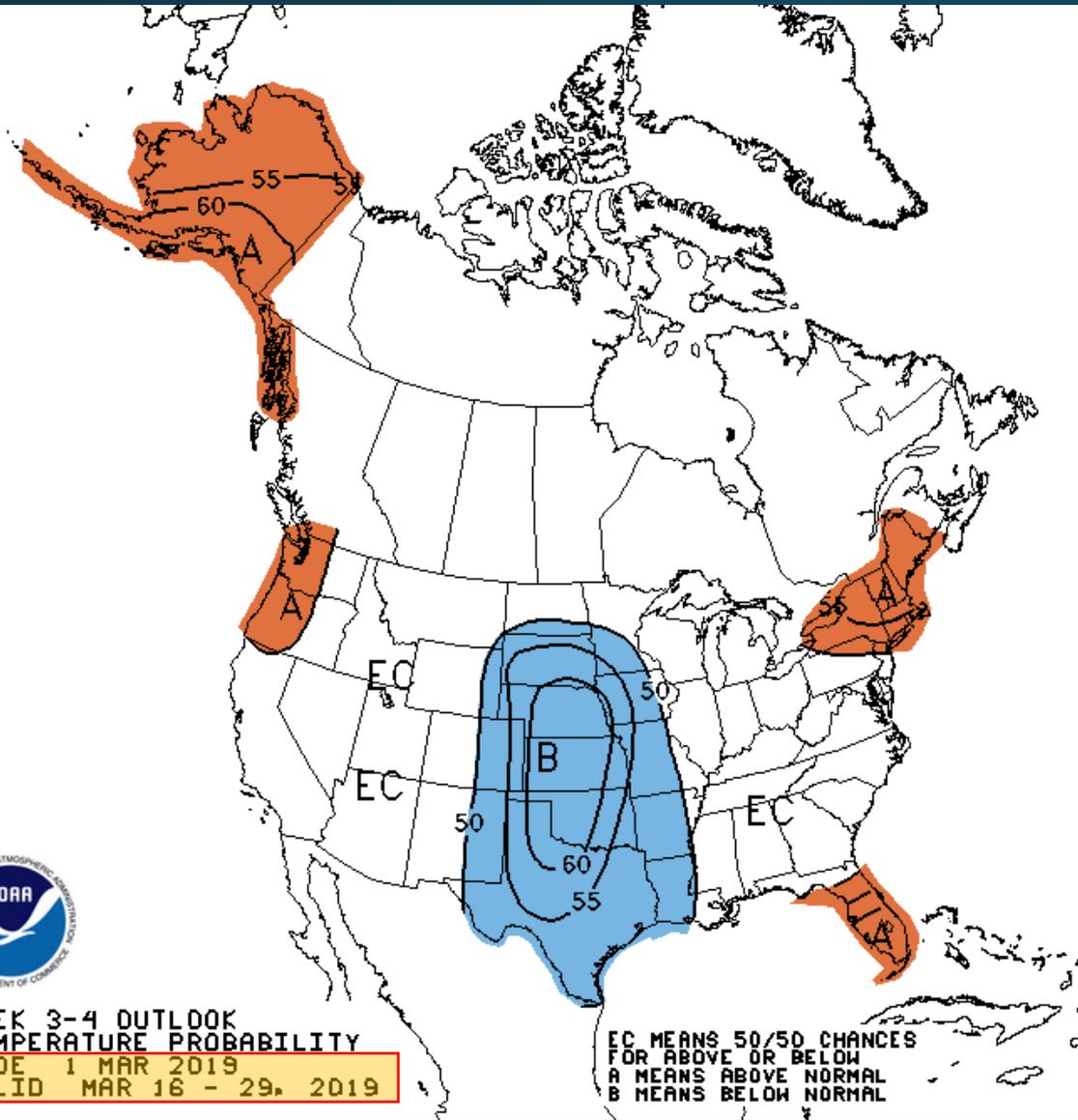
<http://www.cpc.ncep.noaa.gov/>





3-4 Week CPC Outlook

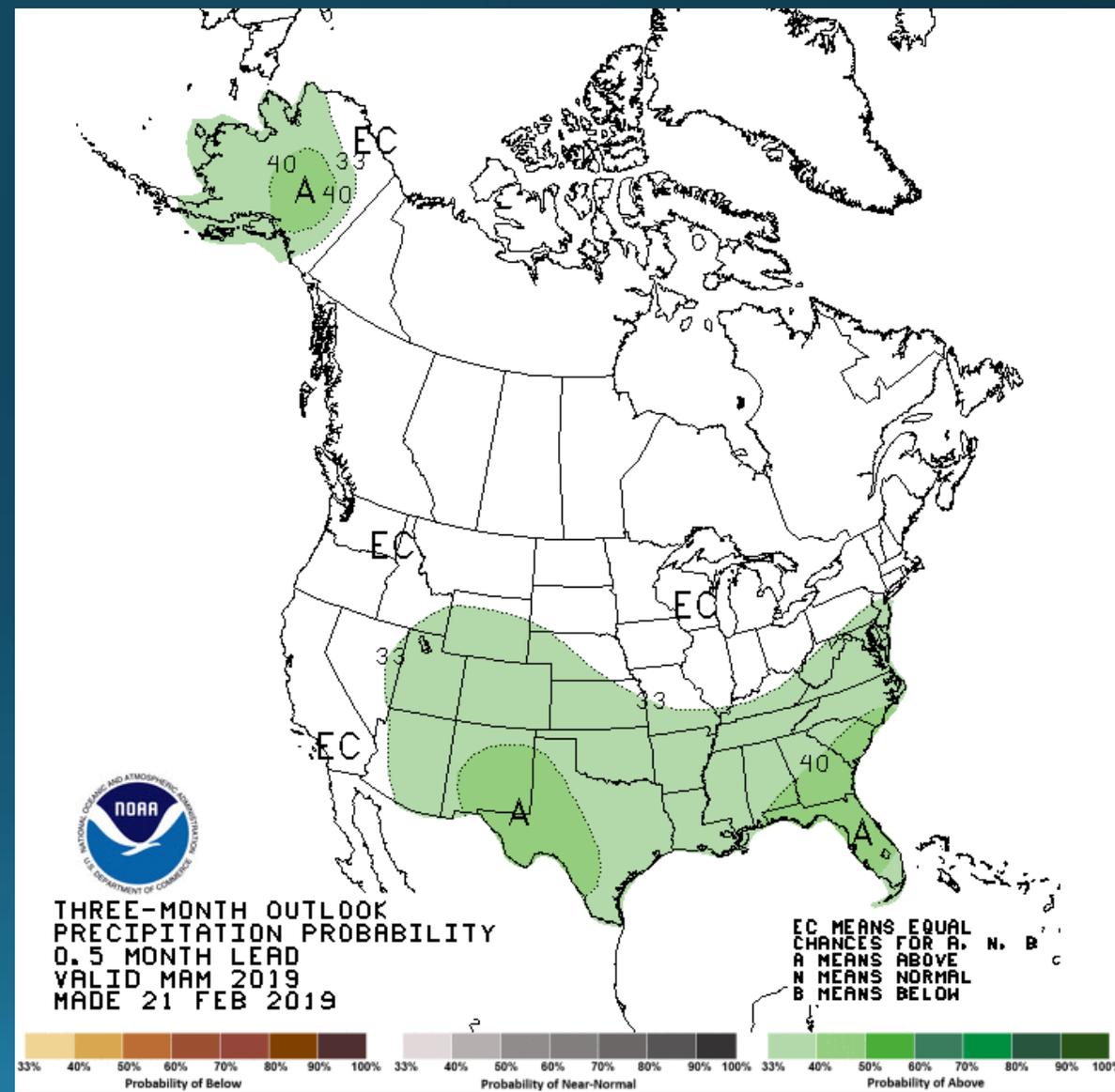
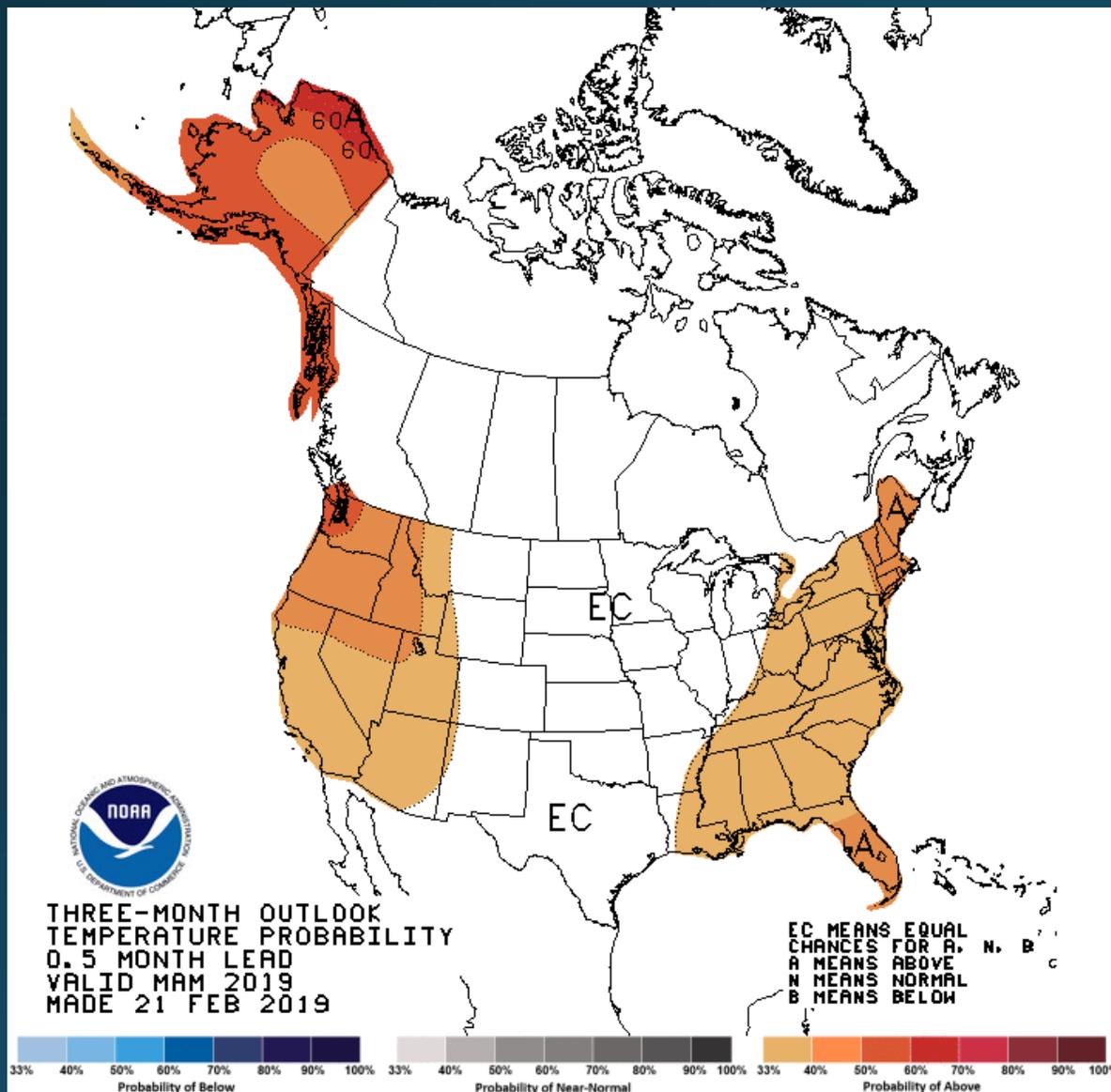
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Three Month CPC Outlook

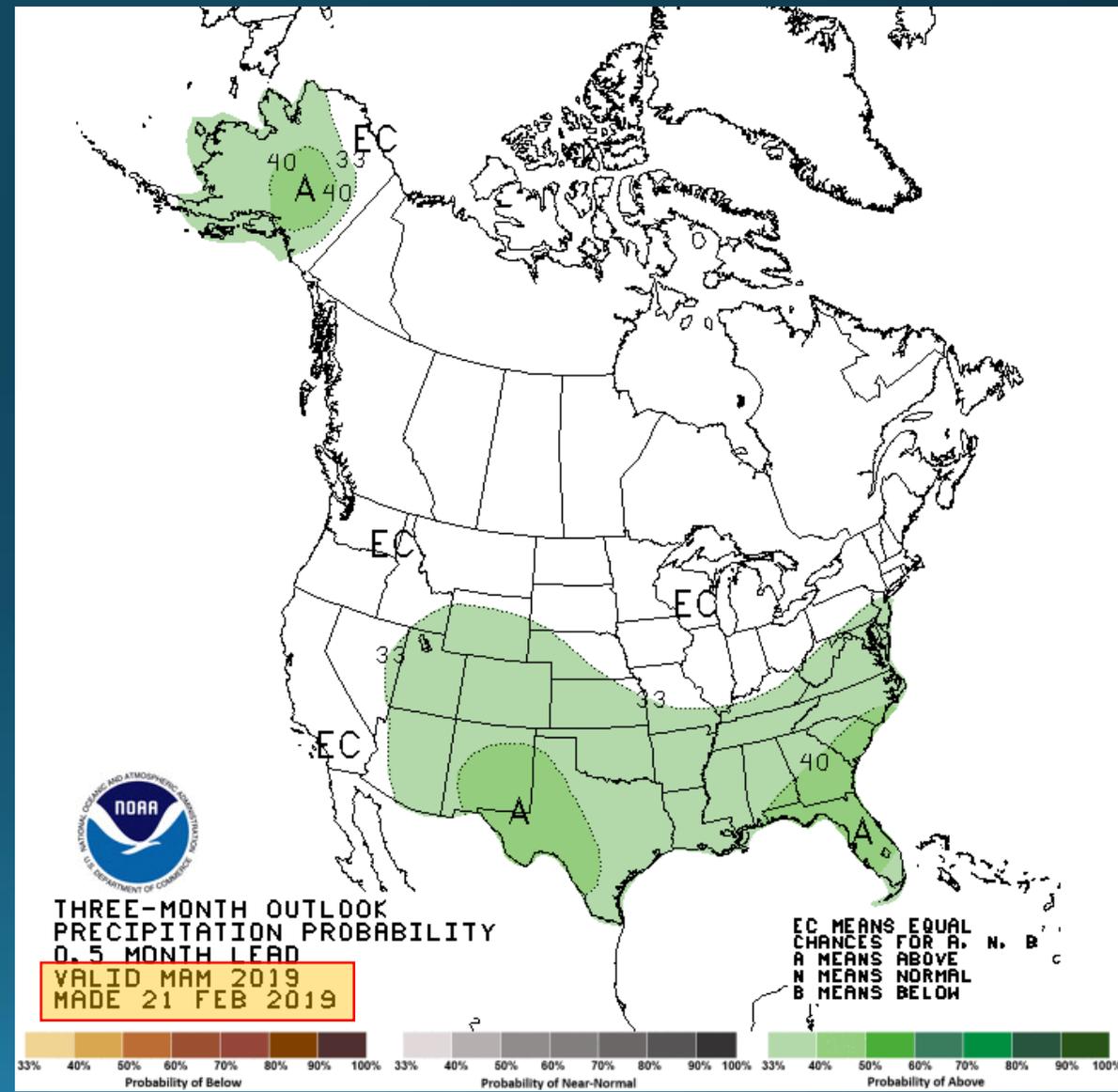
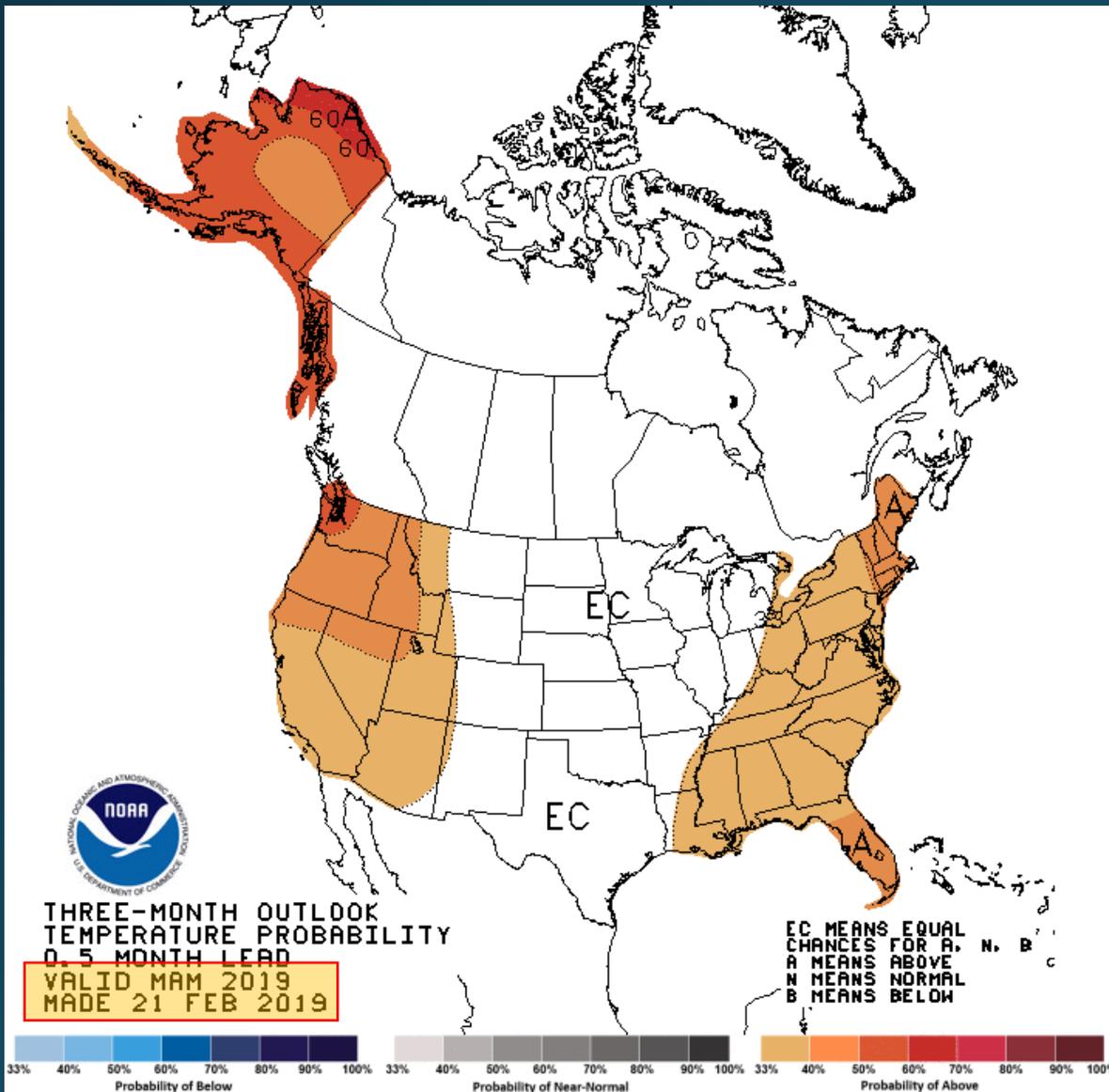
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Three Month CPC Outlook

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





IRI/CPC Pacific Niño 3.4 SST Model Outlook



ENSO Alert System Status: El Niño Advisory

El Niño conditions are present.

Weak El Niño conditions are expected to continue through the Northern Hemisphere spring 2019 (~55% chance).

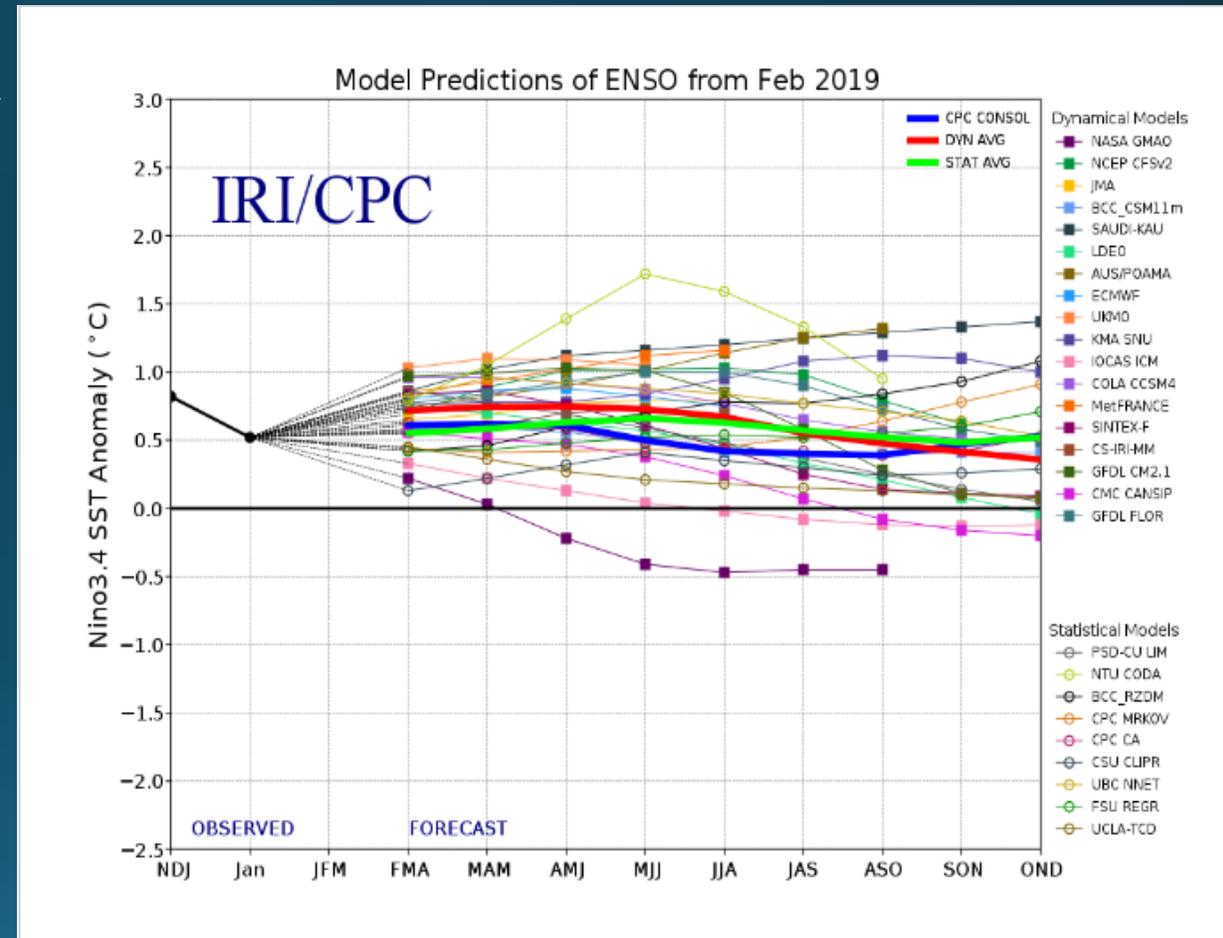


Figure and text from CPC:

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



Summary



Water Year 2019 Summary

- Impressive February for much of the Upper and Mid Snake River Basins, as well as Southern Oregon.
 - Seasonal precipitation now normal to above normal for Snake River basins.
- Upper Columbia and Northern WA Cascades remain below to near normal for seasonal precipitation.
- February was cold basin wide. This pattern continued for the first week of March.
- Water supply forecasts:
 - 79-107 % in Columbia River Basins above Grand Coulee
 - 66-140 % in Snake River Basins—big improvements since Feb 1
 - 81-94 % in on the west side of the Cascades
 - Increases in Apr-Sep ESP10 Volume forecasts in the Snake Basins were countered by slight decreases in Upper Columbia.
 - Result is little change in Apr-Sep ESP10 Volume at the Dalles
- Weak El Nino conditions are present and likely to persist through Spring and early Summer.



2019 Schedule for Live Water Supply Briefings

April

May

June

4

2

6

All presentations held at 10:00 am PST/PDT unless noted otherwise

Telephone Conference Call Number
(same for each month's brief):

(415) 655-0060

Pass Code:

217-076-304



Questions?

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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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