

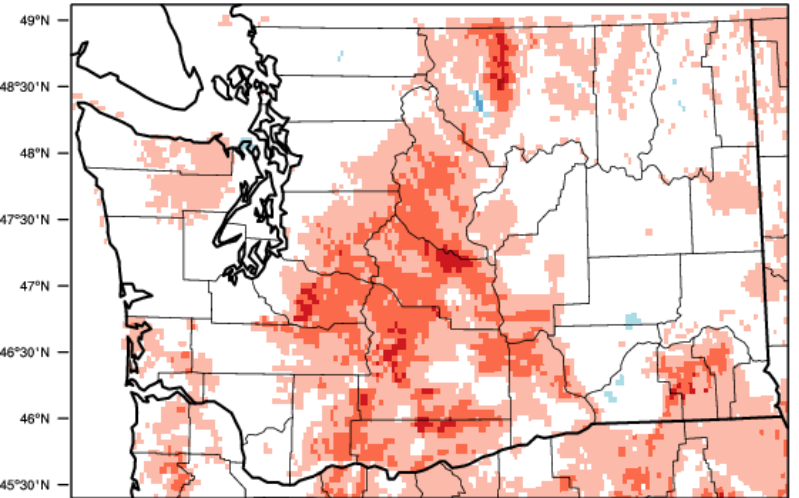
Regional Climate Perspective

Nick Bond & Karin Bumbaco
Office of the Washington State Climatologist
Joint Institute for the Study of Atmosphere and Ocean
University of Washington
11 December 2020

2021 Water Year

Temperature Washington - Mean Temperature

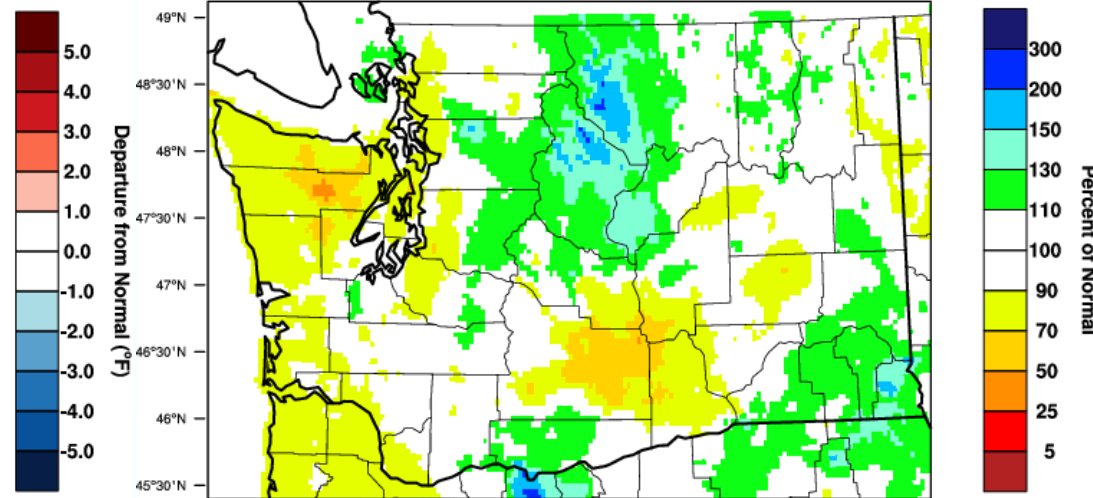
October-November 2020 Departure from 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 DEC 2020

Precipitation Washington - Precipitation

October-November 2020 Percent of 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 DEC 2020

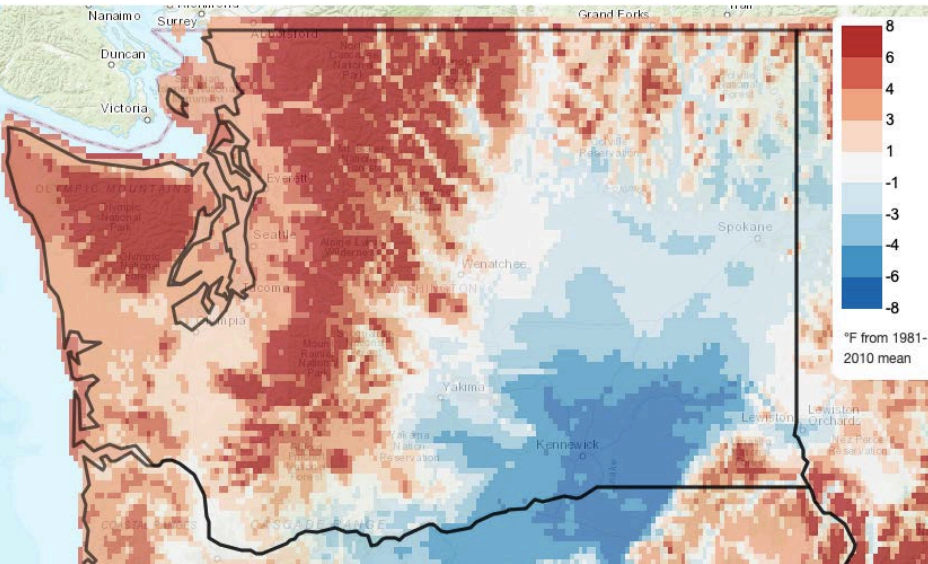
WWDT

- Averaged statewide, above normal temperatures for WY2021 (+1.0°F)
- Near-normal precipitation averaged statewide (-0.04") but with regional variability

December

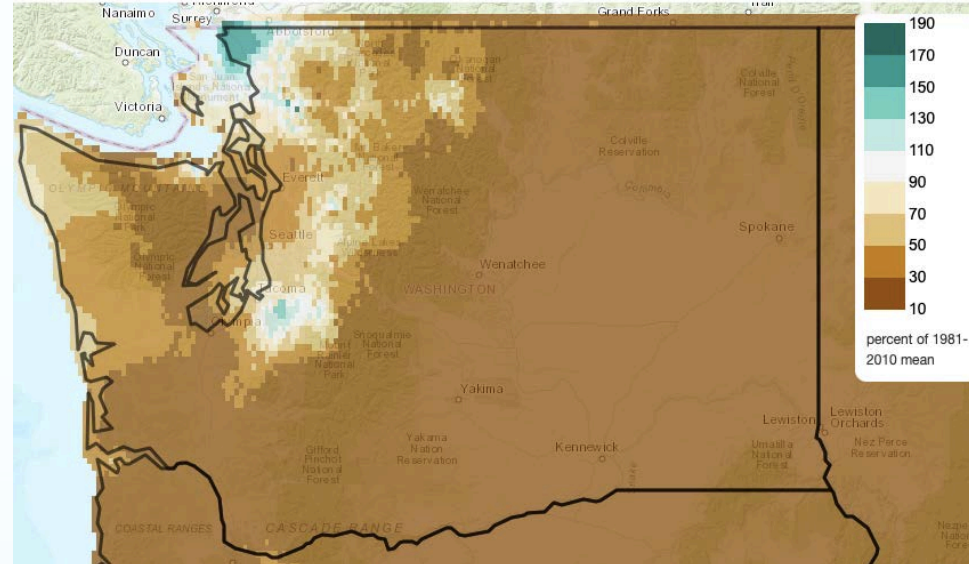
Temperature

Mean Daily Temperature Anomaly, Last 7 Days
2020/12/02 - 2020/12/08



Precipitation

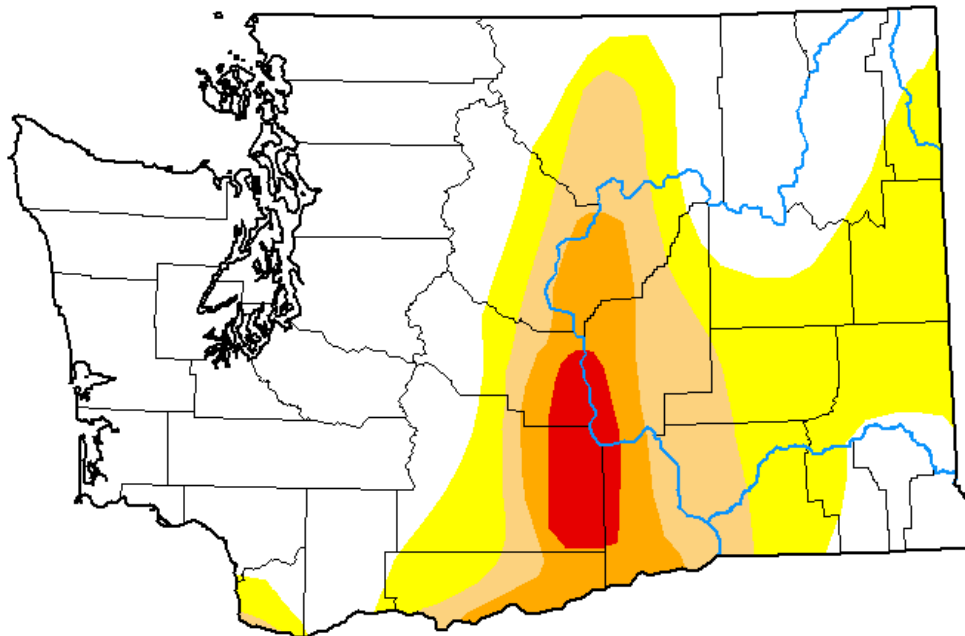
Total Precipitation Anomaly, Last 7 Days
2020/12/02 - 2020/12/08









US Drought Monitor

U.S. Drought Monitor Washington

December 8, 2020
(Released Thursday, Dec. 10, 2020)
Valid 7 a.m. EST



Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

David Simeral
Western Regional Climate Center

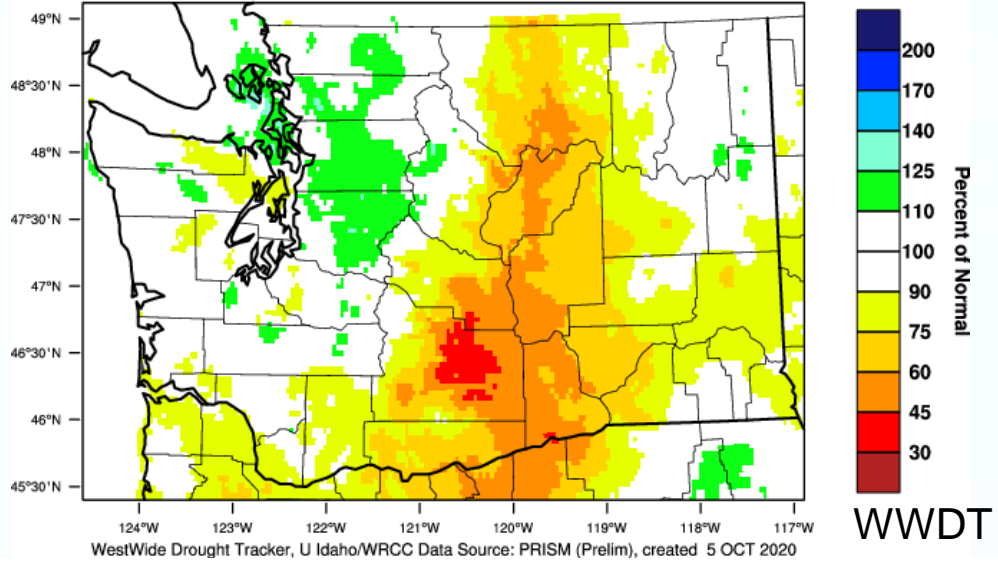


droughtmonitor.unl.edu

2020 Water Year Precipitation

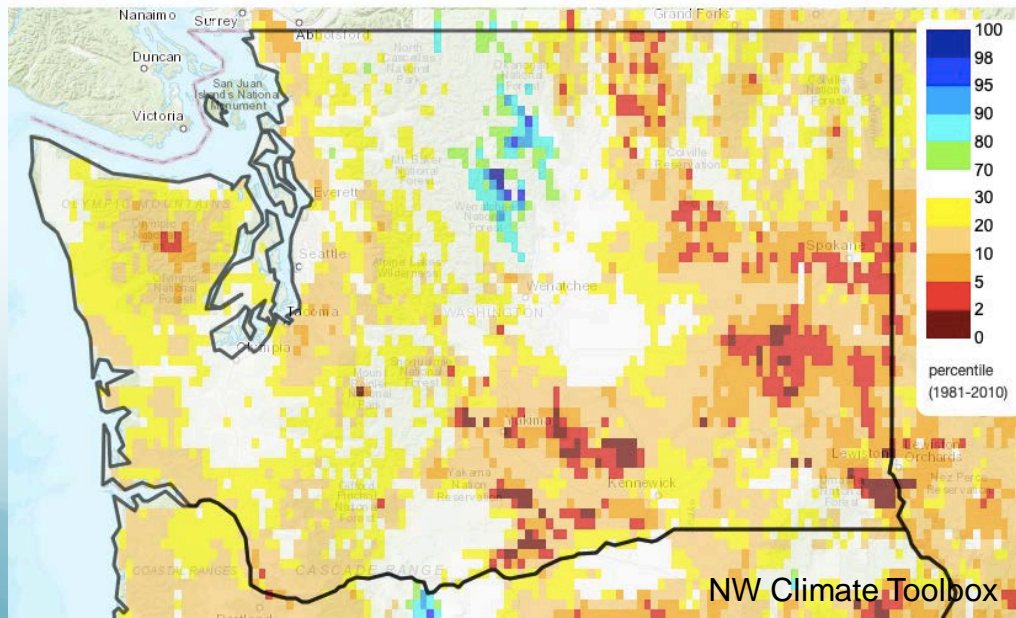
Washington - Precipitation

October-September 2020 Percent of 1981-2010 Normal

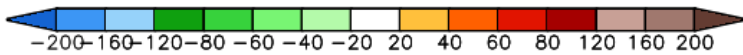
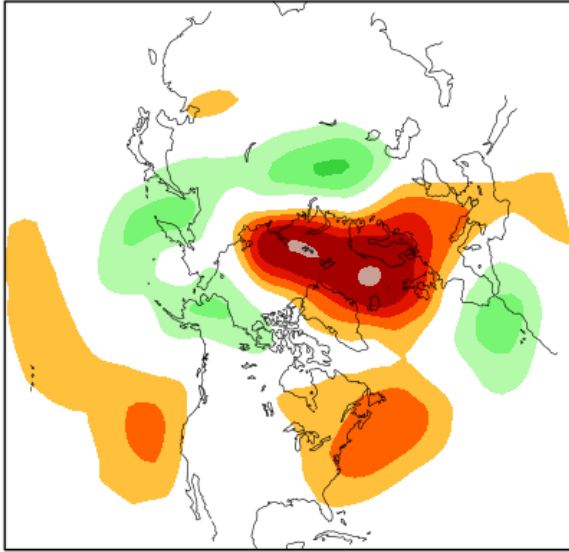


Total Moisture Percentile

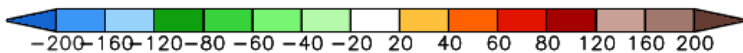
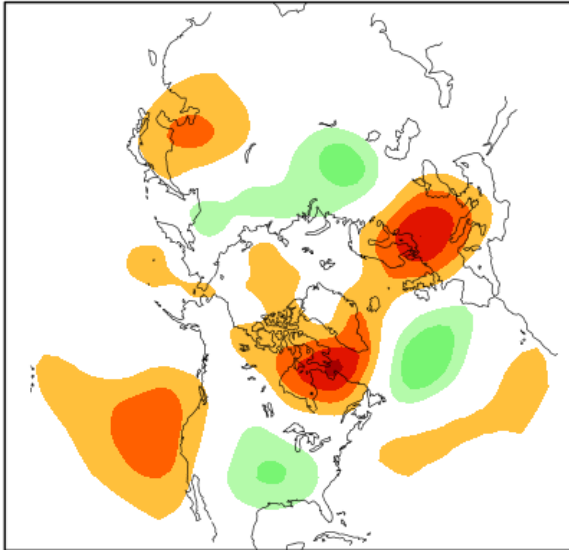
2020/12/07



Week 3 23Dec2020-29Dec2020



Week 4 30Dec2020-5Jan2021



Latest Set of Week 3-4
Forecasts from CFSv2

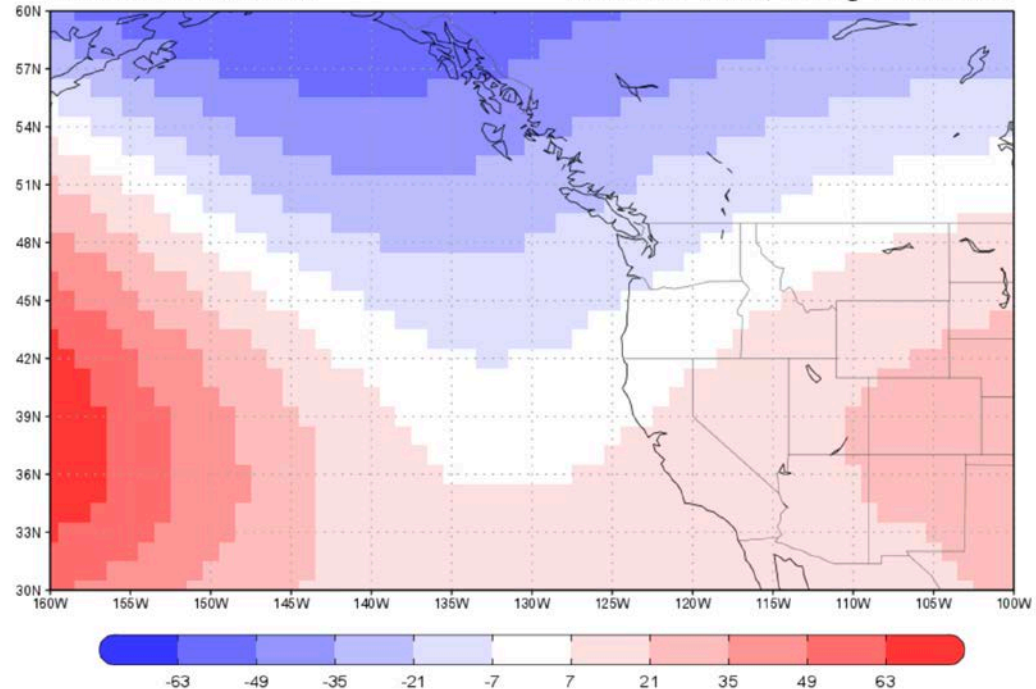
Positive height anomalies to the
southwest; warm statewide and
wet late

Inconsistent with 6-member
model ensemble below

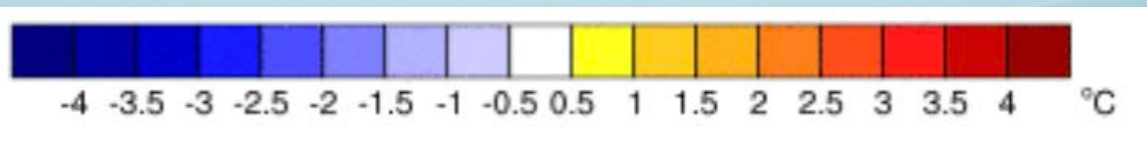
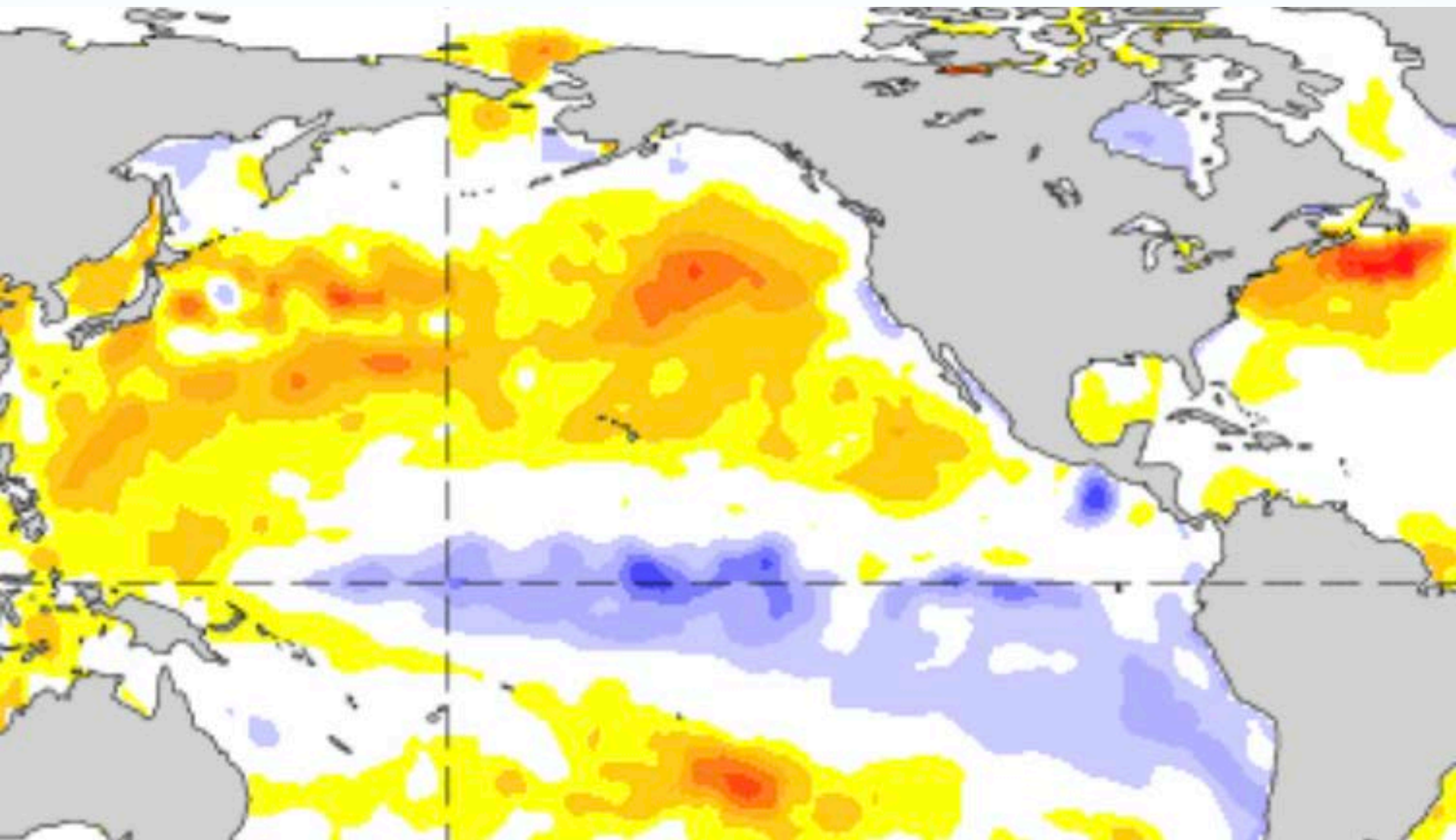
SubX Forecast of 500mb Height Anomaly [m]

Multi Model Ensemble

Week 3-4 Mean, ending 1-JAN-2021

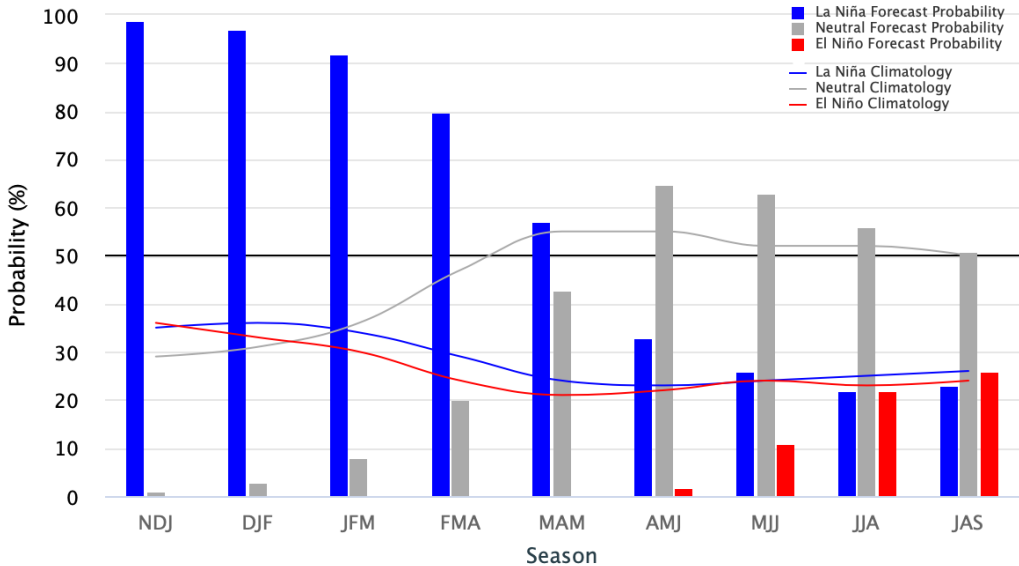


Sea Surface Temperature Anomalies (29 November – 5 December 2020)



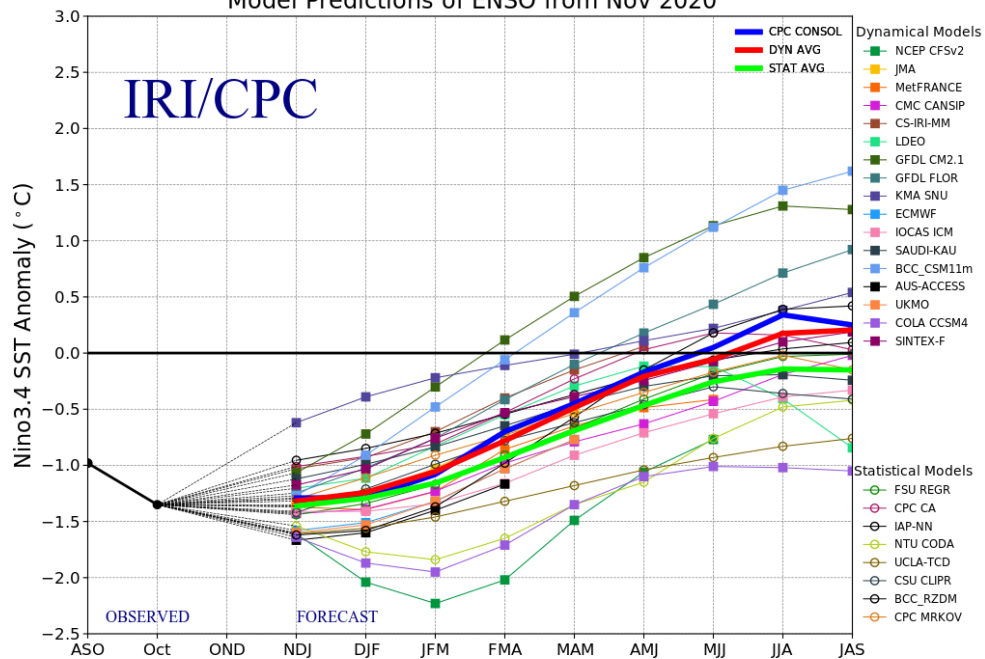
Mid-November 2020 IRI/CPC Model-Based Probabilistic ENSO Forecasts

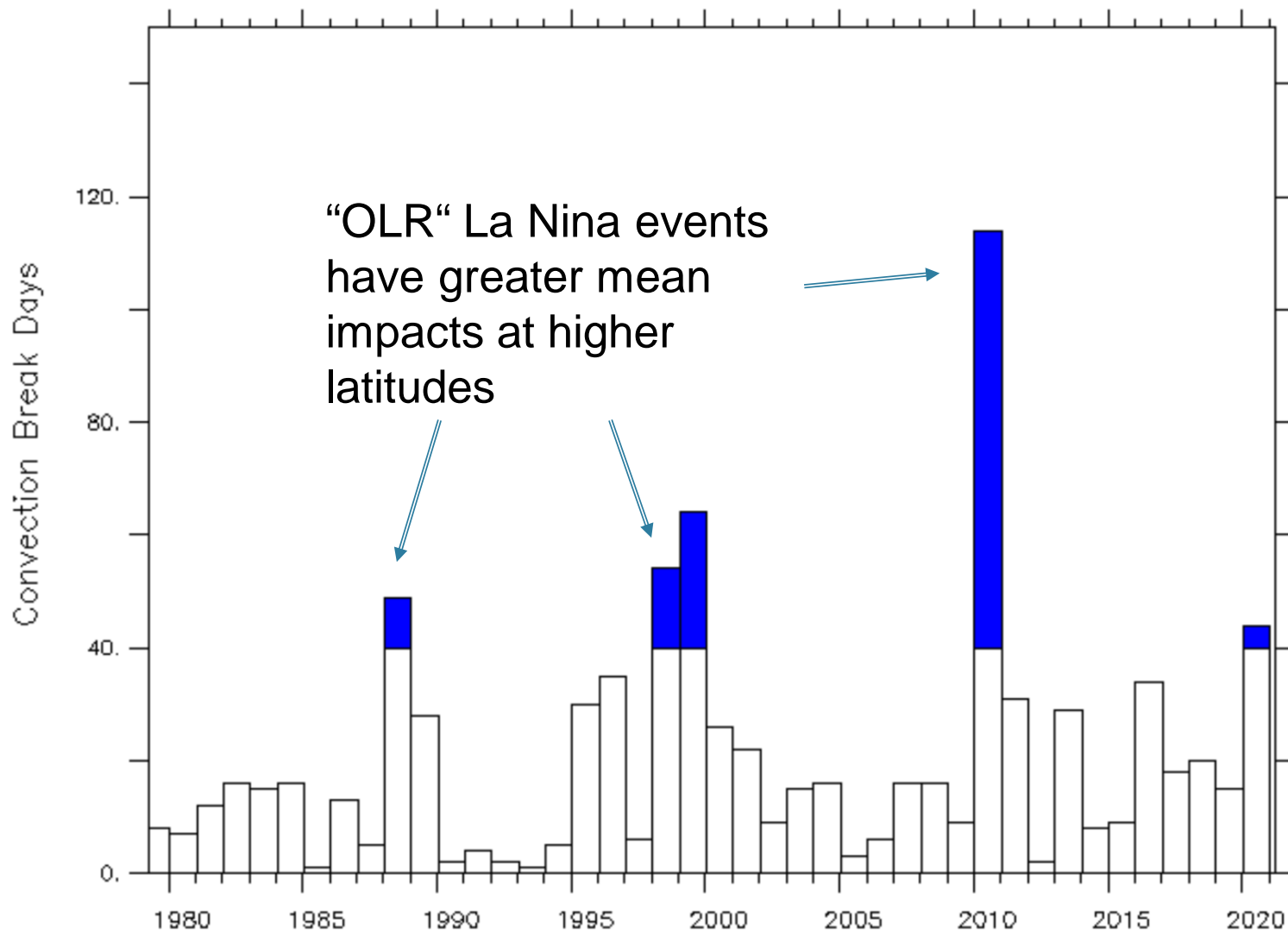
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C



ENSO Predictions

Model Predictions of ENSO from Nov 2020

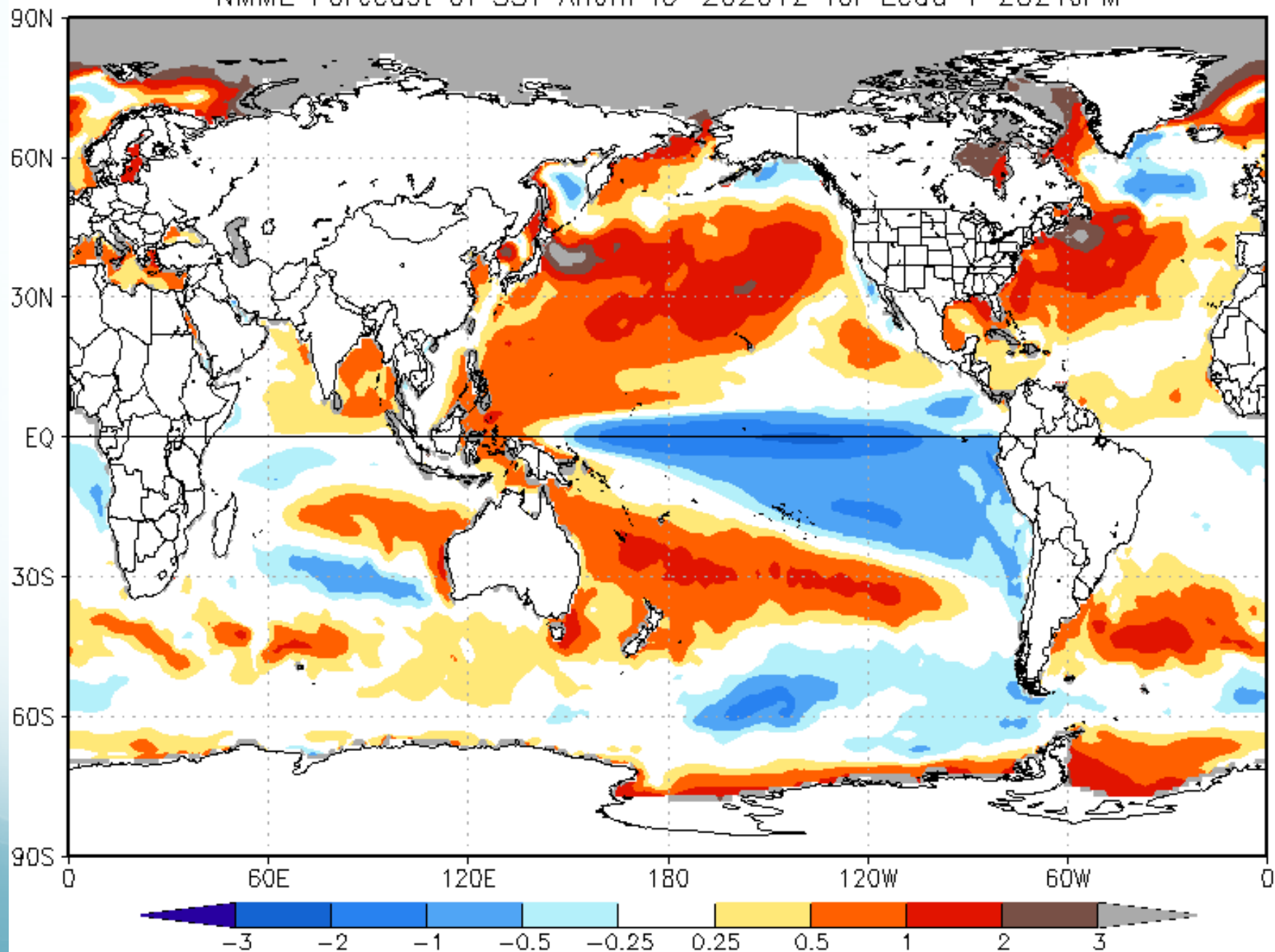




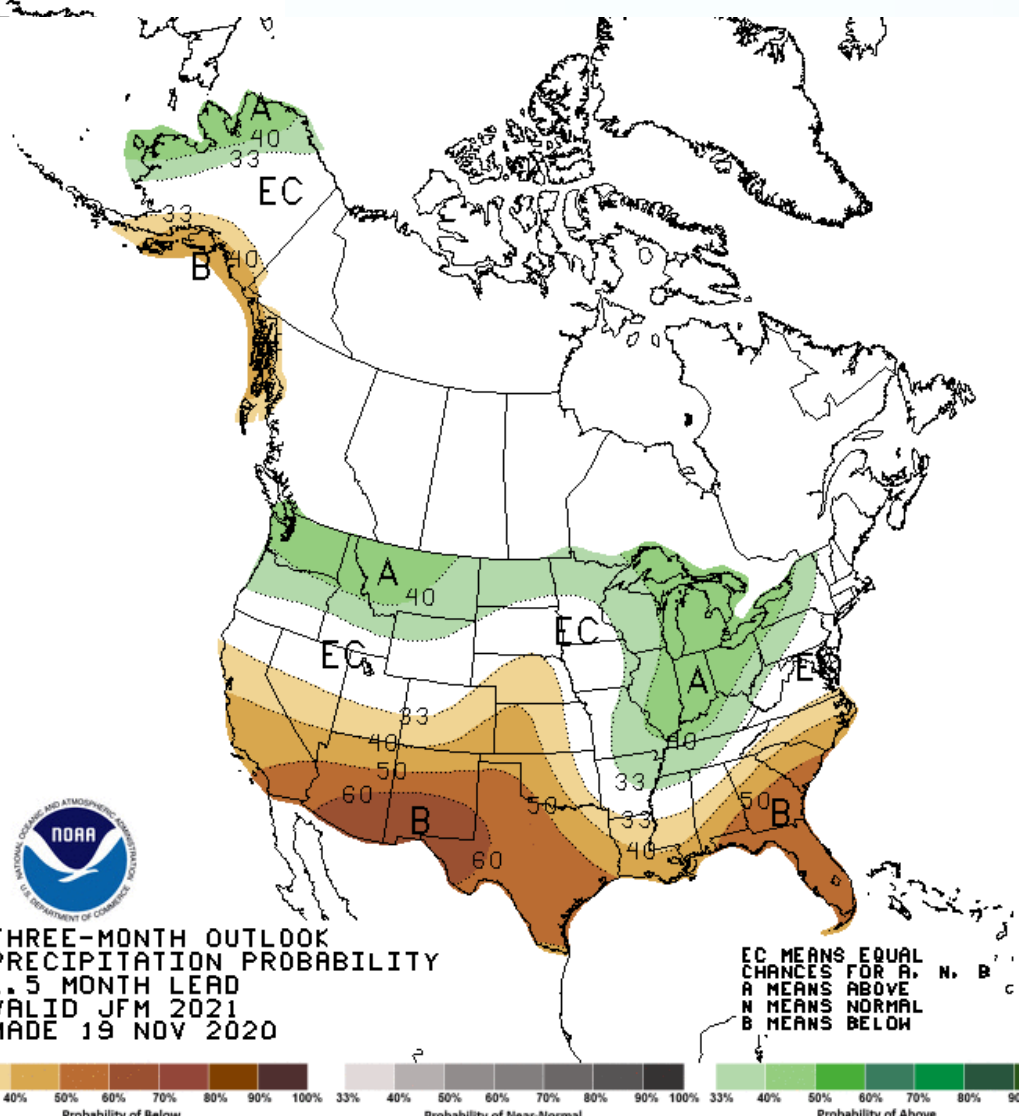
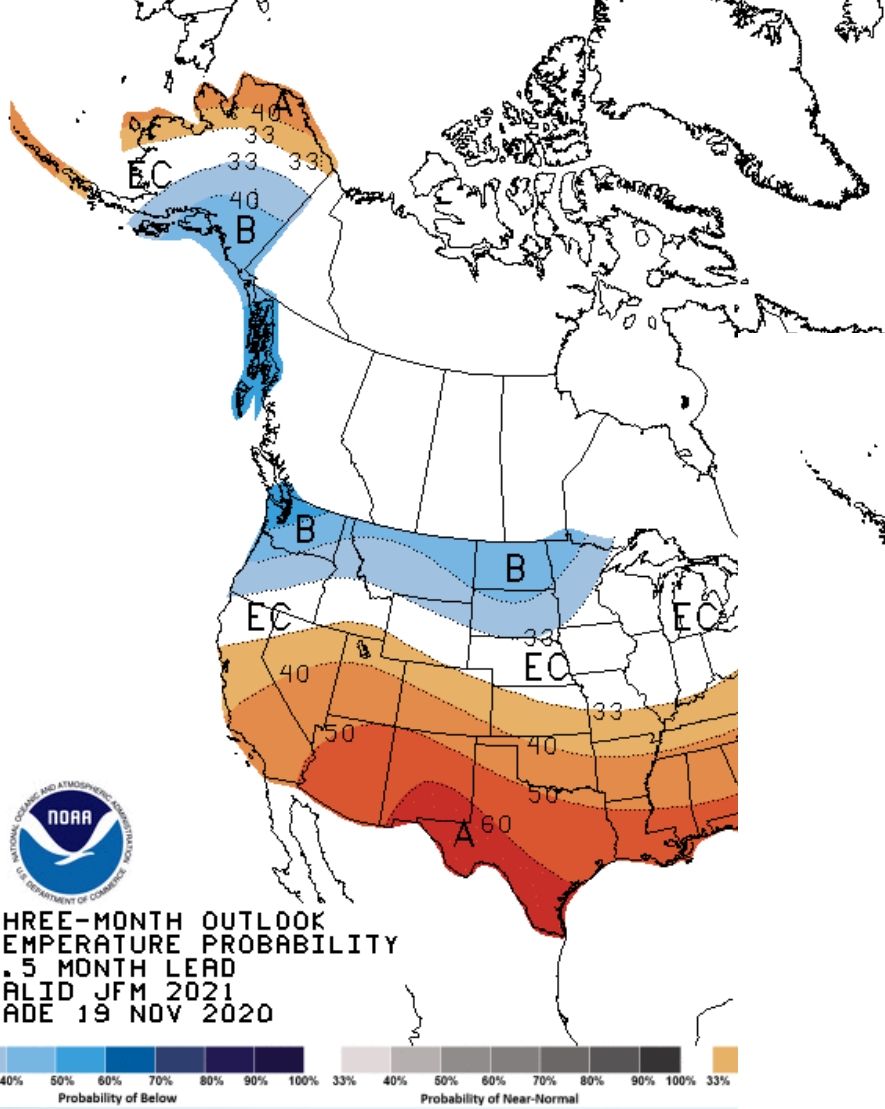
OLR break days a measure of the suppression of deep convection in the western tropical Pacific

The La Niña OLR Index

NMME Forecast of SST Anom IC=202012 for Lead 1 2021JFM



NOAA/CPC Forecasts for Jan-Mar 2021



EC MEANS EQUAL CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

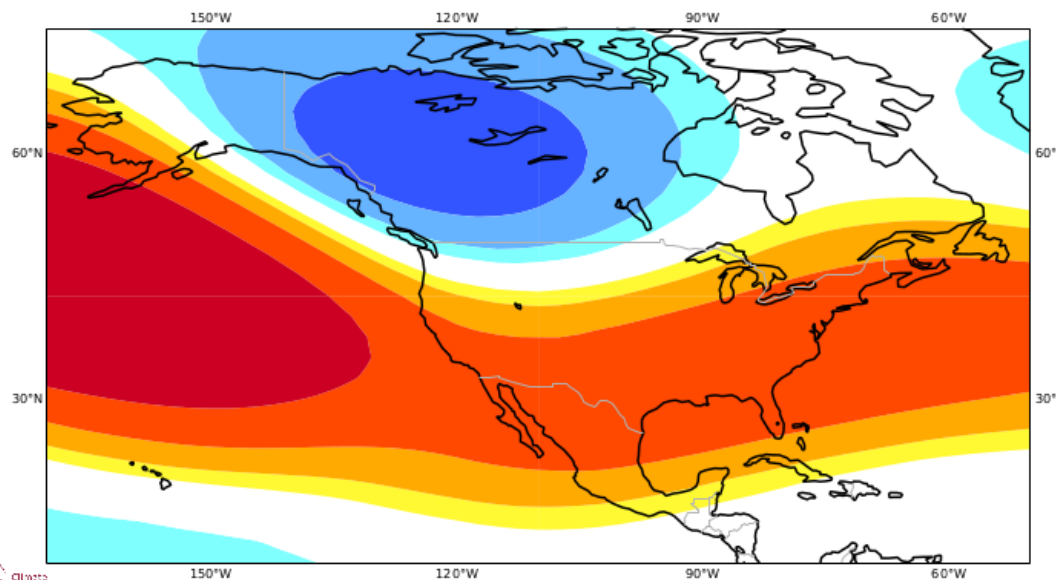
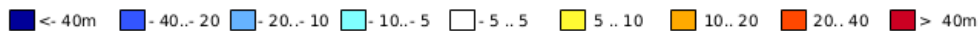
Mean Z500 anomaly

Nominal forecast start: 01/11/20

Variance-standardized mean

JFM 2021

Composite Maps from the International Multi-Model Ensemble



500 hPa Z



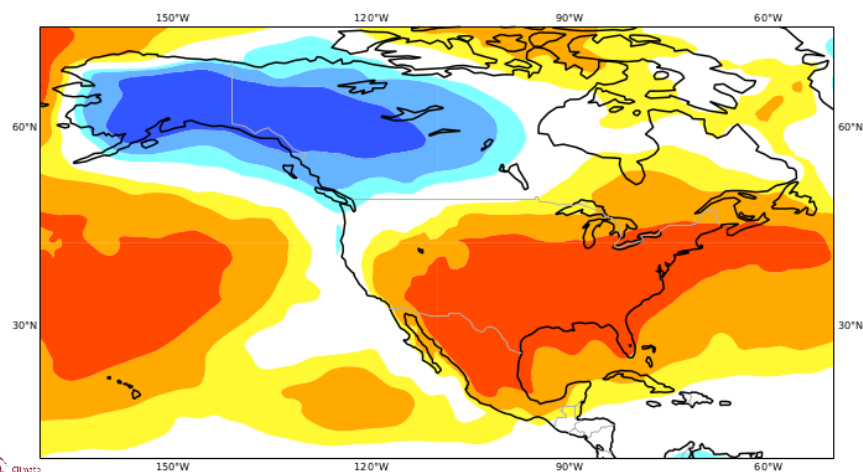
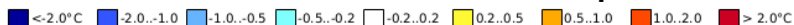
Mean 2m temperature anomaly

Nominal forecast start: 01/11/20

Variance-standardized mean

JFM 2021

Air Temperature



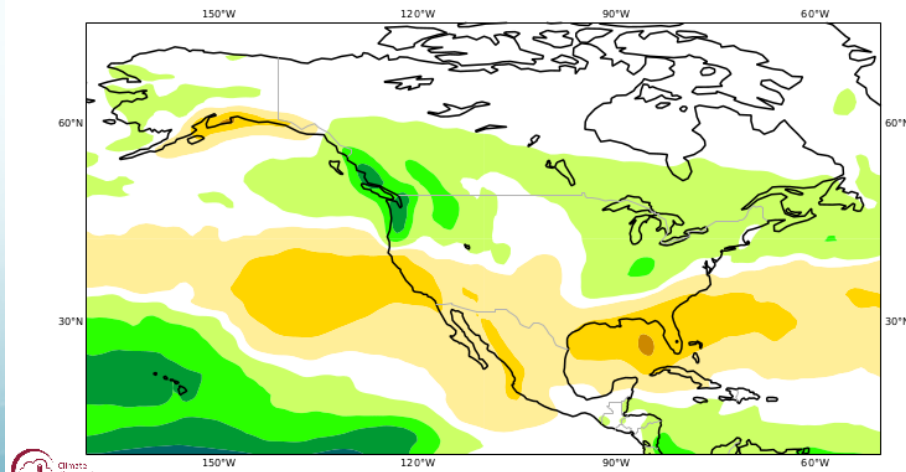
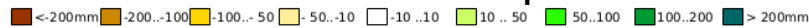
Mean precipitation anomaly

Nominal forecast start: 01/11/20

Variance-standardized mean

JFM 2021

Precipitation



Final Remarks

- Water year 2021 so far: on the warmer side with drier than normal conditions on the Peninsula and Lower Columbia Basin and wetter than normal conditions in SE WA and north central WA
- Drought Monitor showing substantial dryness carrying over from WY2020
- Central-eastern tropical Pacific is cooler than normal; La Nina will prevail during this winter
- Climate models tending to be slightly less enthusiastic about the prospects for cool temperatures this winter; they are still indicating anomalous NW flow, which would result in higher precipitation totals on the west side
- As far as is known, the WA Dept. of Ecology will be retaining a position for a drought coordinator