

Regional Climate Perspective

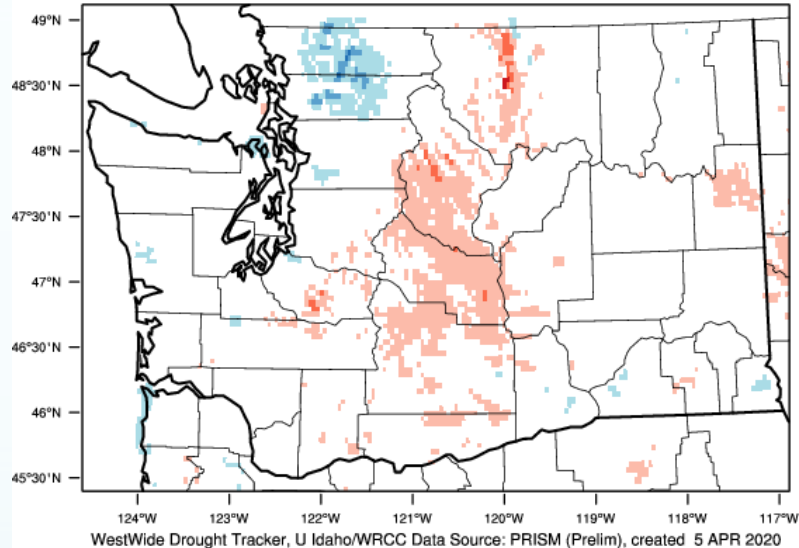
Nick Bond & Karin Bumbaco
Office of the Washington State Climatologist
Joint Institute for the Study of Atmosphere and Ocean
University of Washington
10 April 2020

2020 Water Year

Temperature

Washington - Mean Temperature

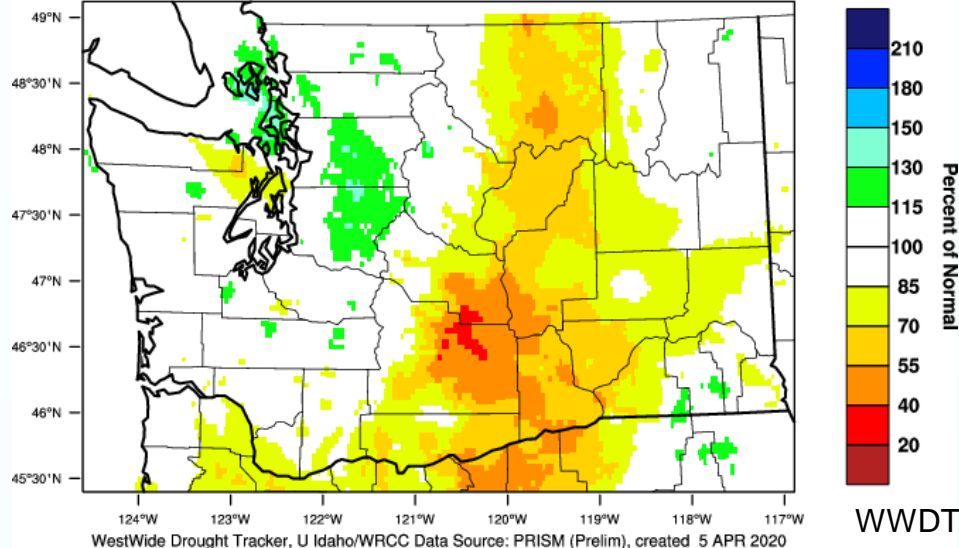
October-March 2020 Departure from 1981-2010 Normal



Precipitation

Washington - Precipitation

October-March 2020 Percent of 1981-2010 Normal



- Near-normal temperatures statewide ($+0.3^{\circ}\text{F}$)
- Near-normal precipitation averaged statewide (94% of normal) but a lot of variation regionally
 - Benton county average: 59% of normal (9th driest on record*)

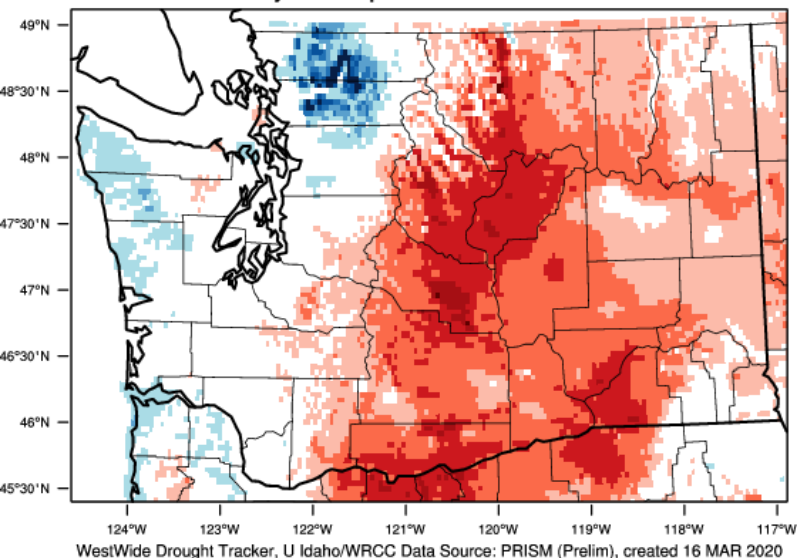
*records since 1895

February 2020

Temperature

Washington - Mean Temperature

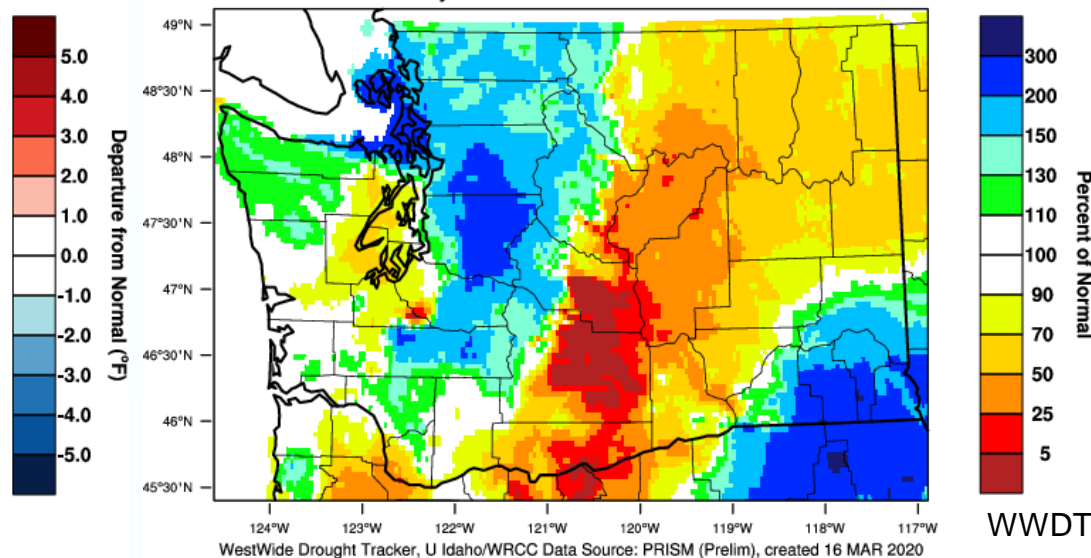
February 2020 Departure from 1981-2010 Normal



Precipitation

Washington - Precipitation

February 2020 Percent of 1981-2010 Normal



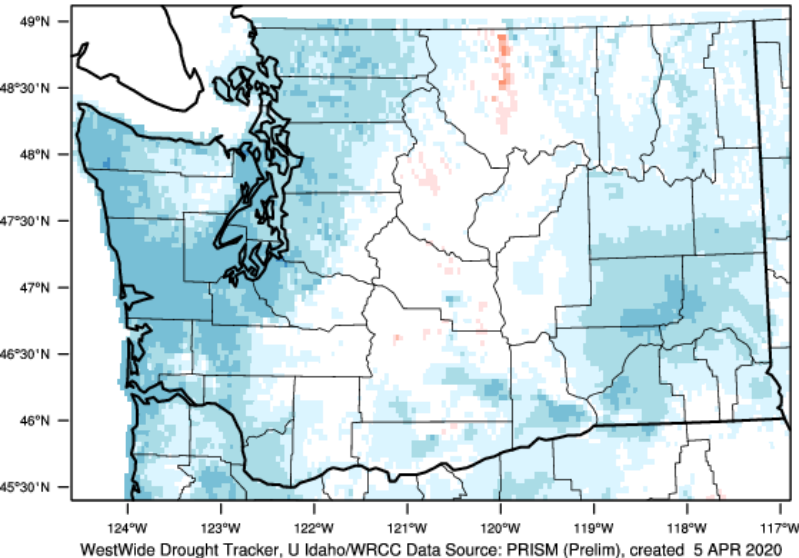
- Much above normal temperatures in eastern WA
 - Statewide: $+1.1^{\circ}\text{F}$
- Much drier than normal precipitation in eastern WA
 - Statewide: 115% of normal

March 2020

Temperature

Washington - Mean Temperature

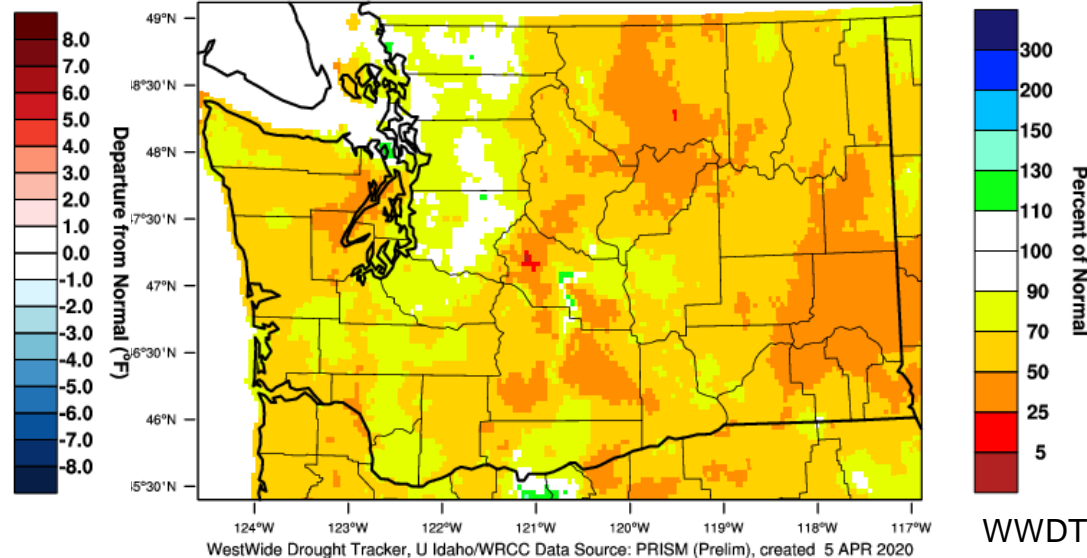
March 2020 Departure from 1981-2010 Normal



Precipitation

Washington - Precipitation

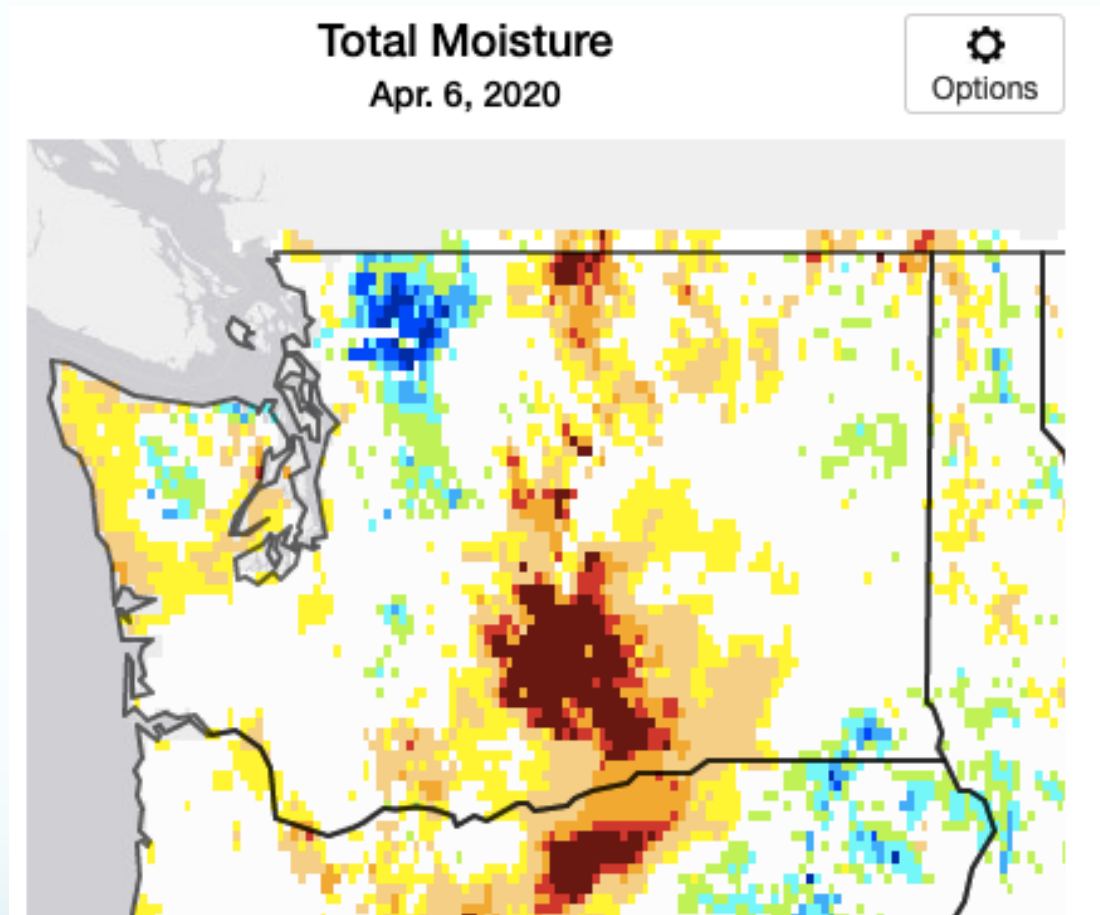
March 2020 Percent of 1981-2010 Normal



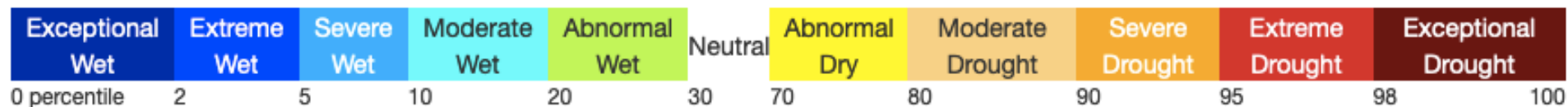
- Cooler than normal temperatures statewide (-1.6°F)
- Below normal precipitation averaged statewide (66% of normal; $-1.47''$)
 - For reference: March 2019 was 4th driest on record* statewide with 33% of normal precipitation

*records since 1895

Total Moisture



Wet-to-Dry Moisture Extremes Classification



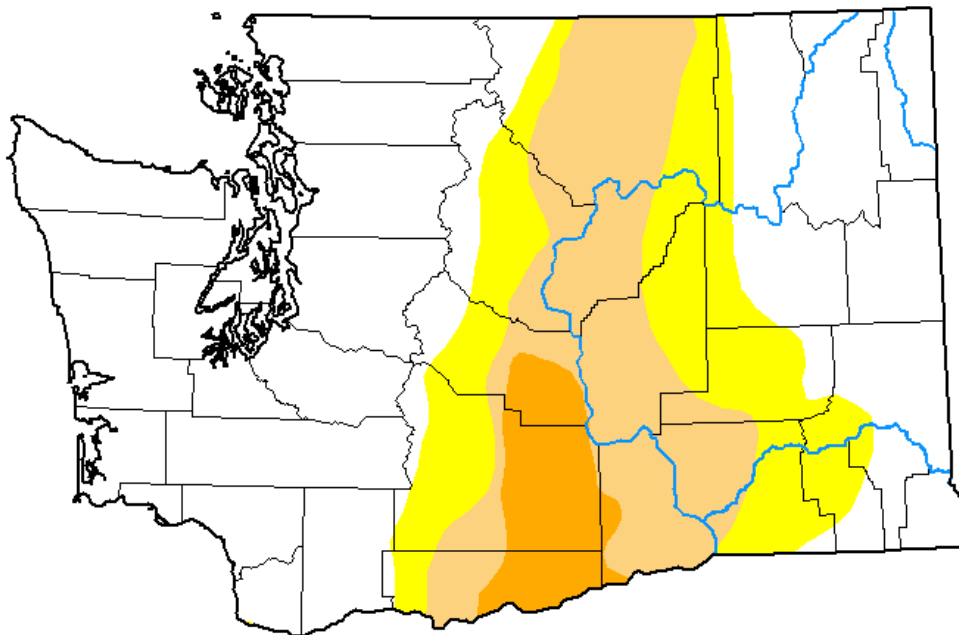
US Drought Monitor

U.S. Drought Monitor Washington







April 7, 2020

(Released Thursday, Apr. 9, 2020)

Valid 8 a.m. EDT



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>

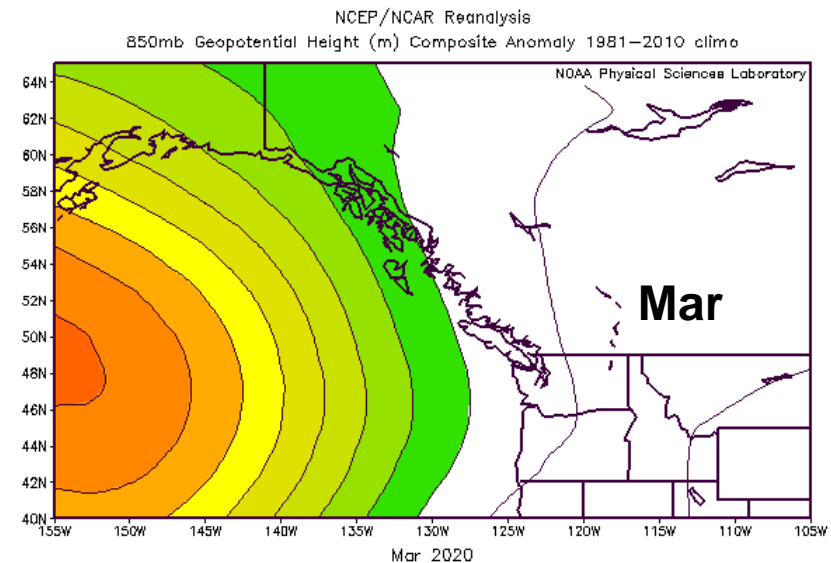
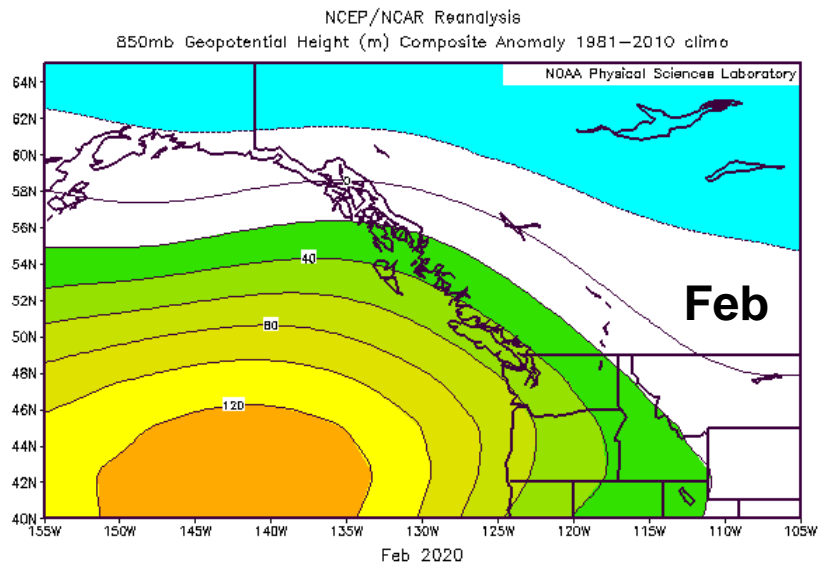
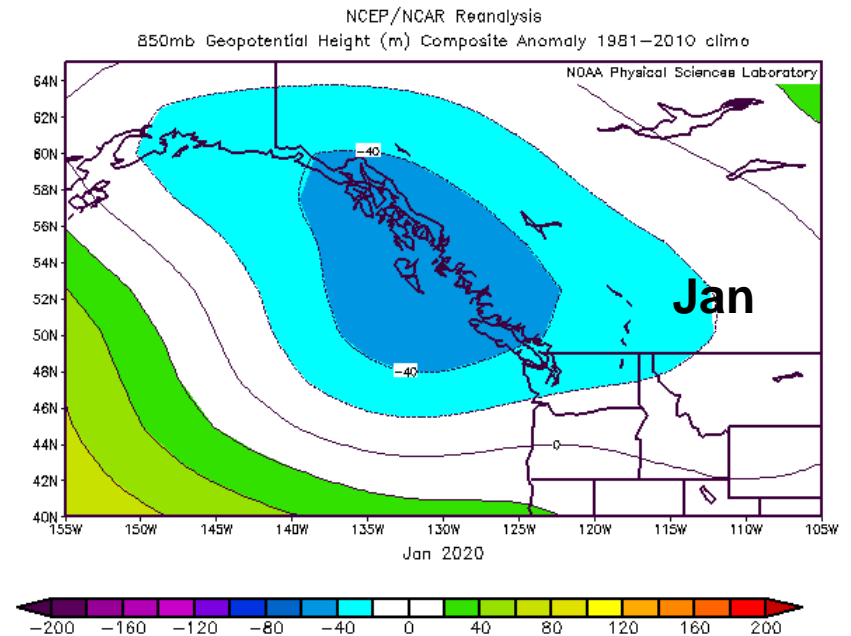
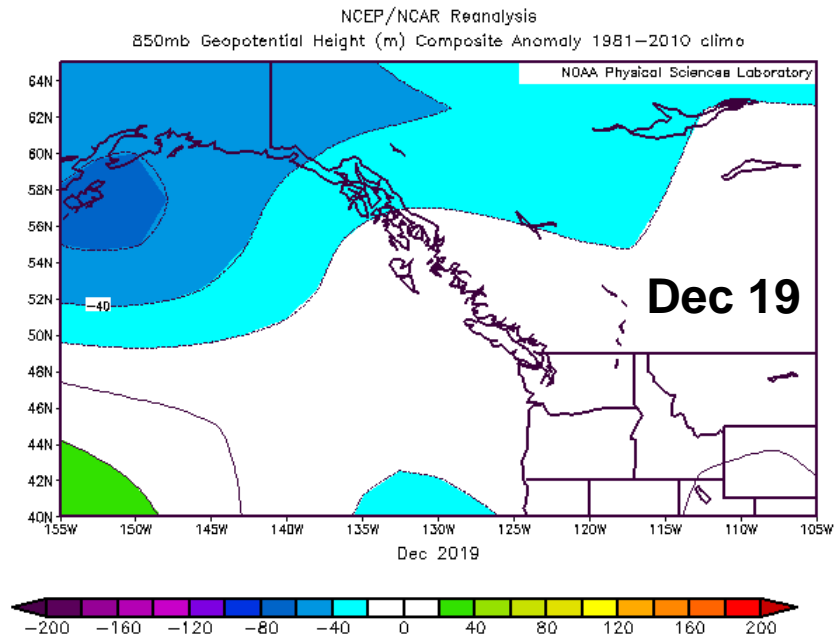
Author:

David Simeral
Western Regional Climate Center

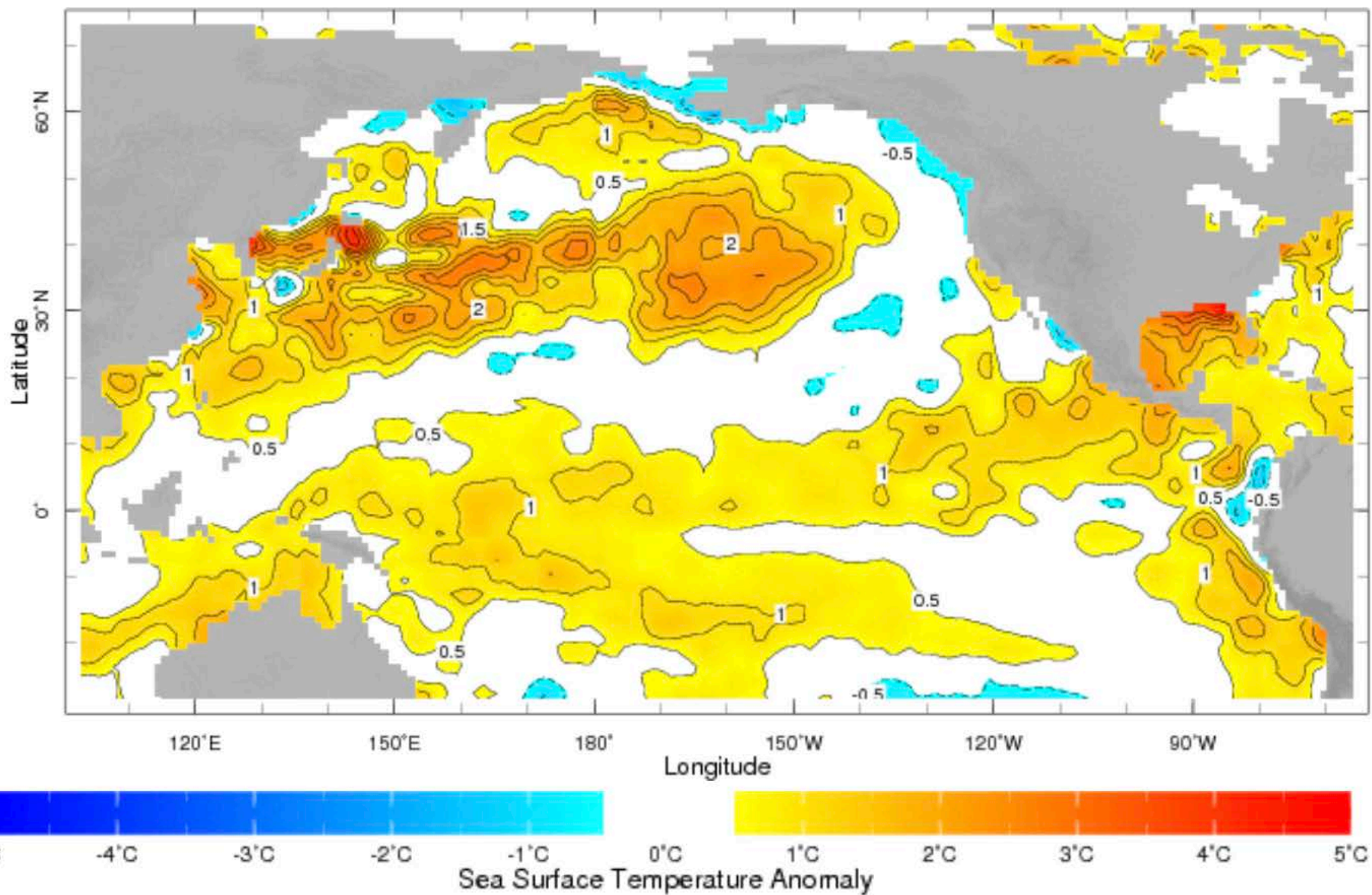


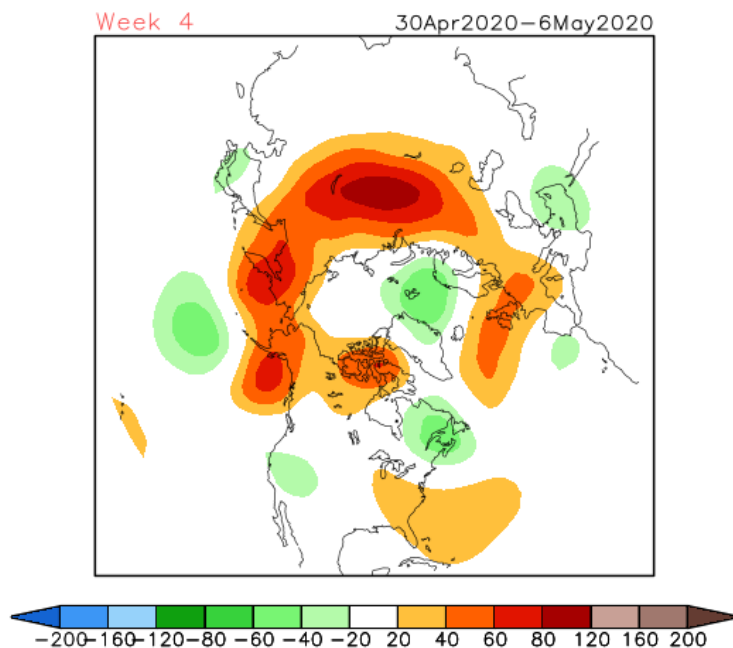
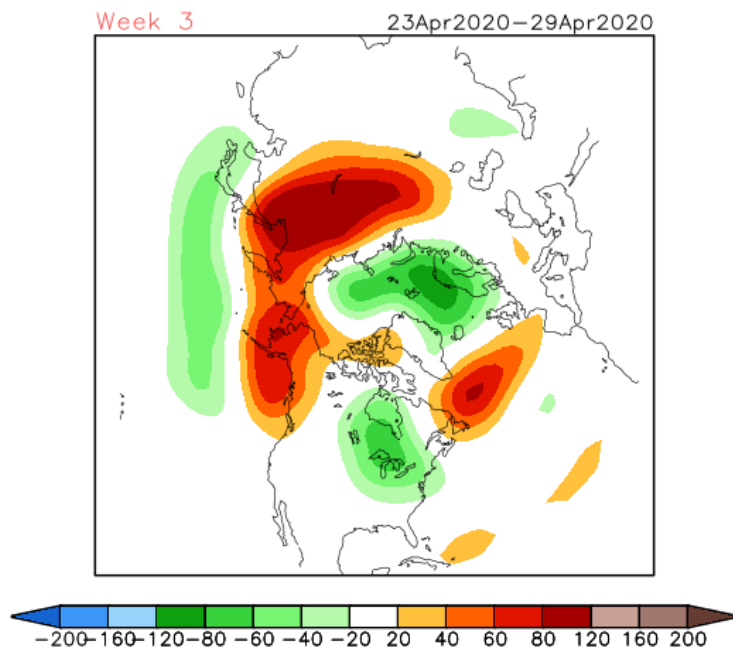
droughtmonitor.unl.edu

850 hPa Z Distributions: Mean westerly to northerly flow at 1500 m in 2020



Sea Surface Temperature Anomalies 1 April 2020

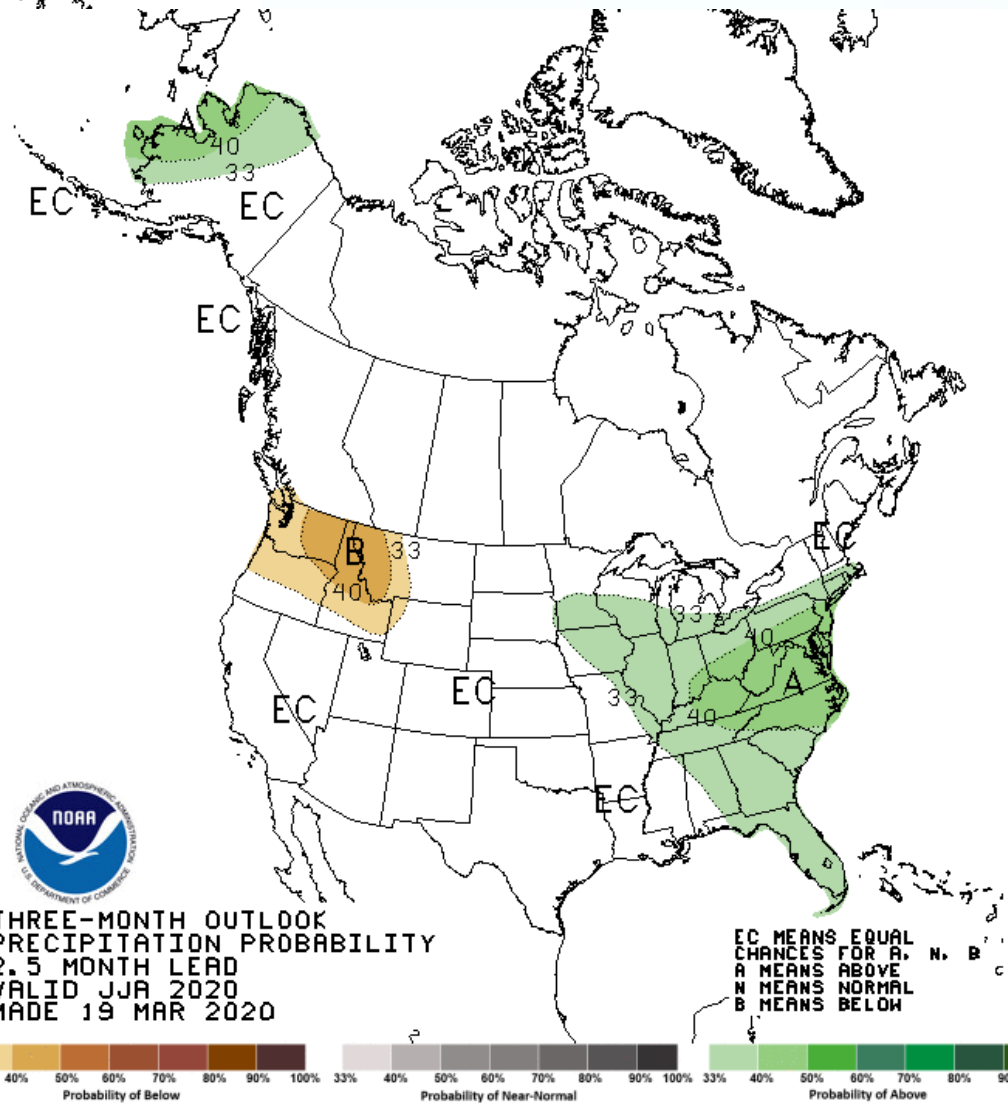
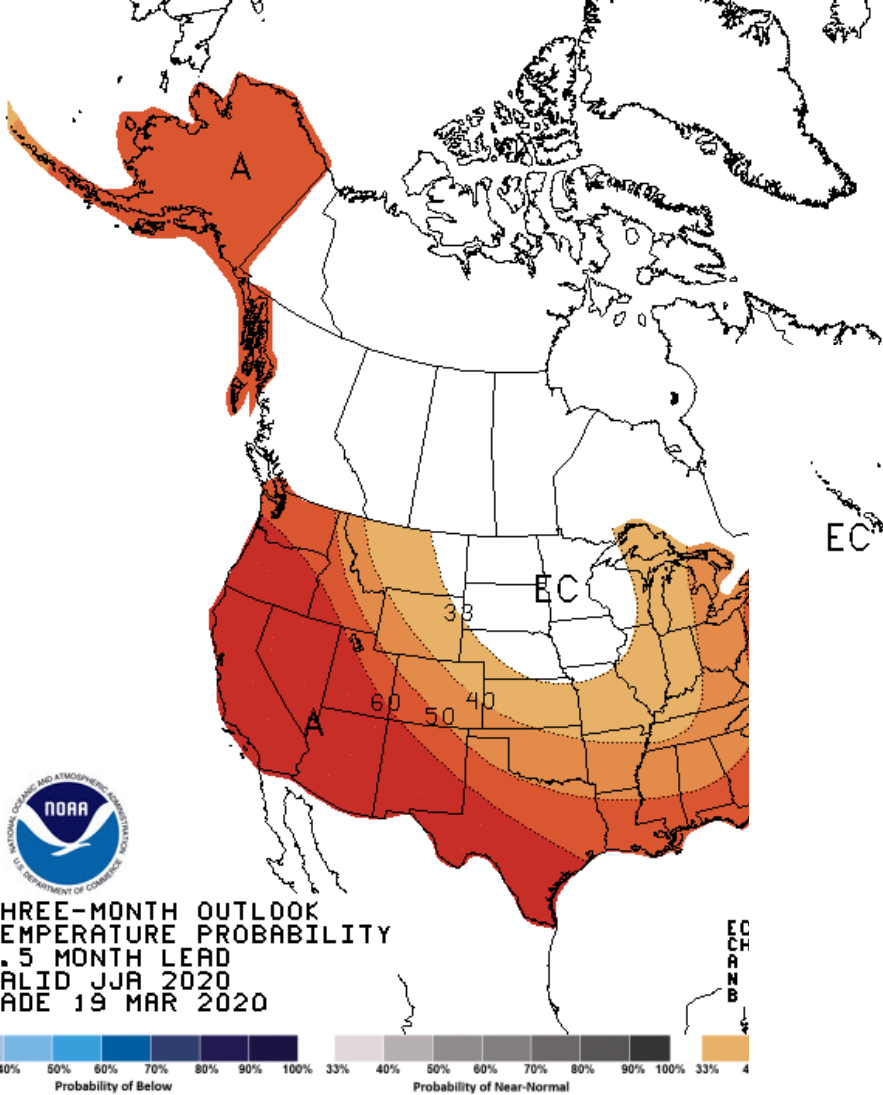




Latest Set of Week 3-4 Forecasts from CFSv2

Anomalous high 500 hPa Z over the the Gulf of Alaska: A weak signal for warmer and drier than normal weather (essentially a continuation of conditions that are liable to occur over the next couple of weeks)

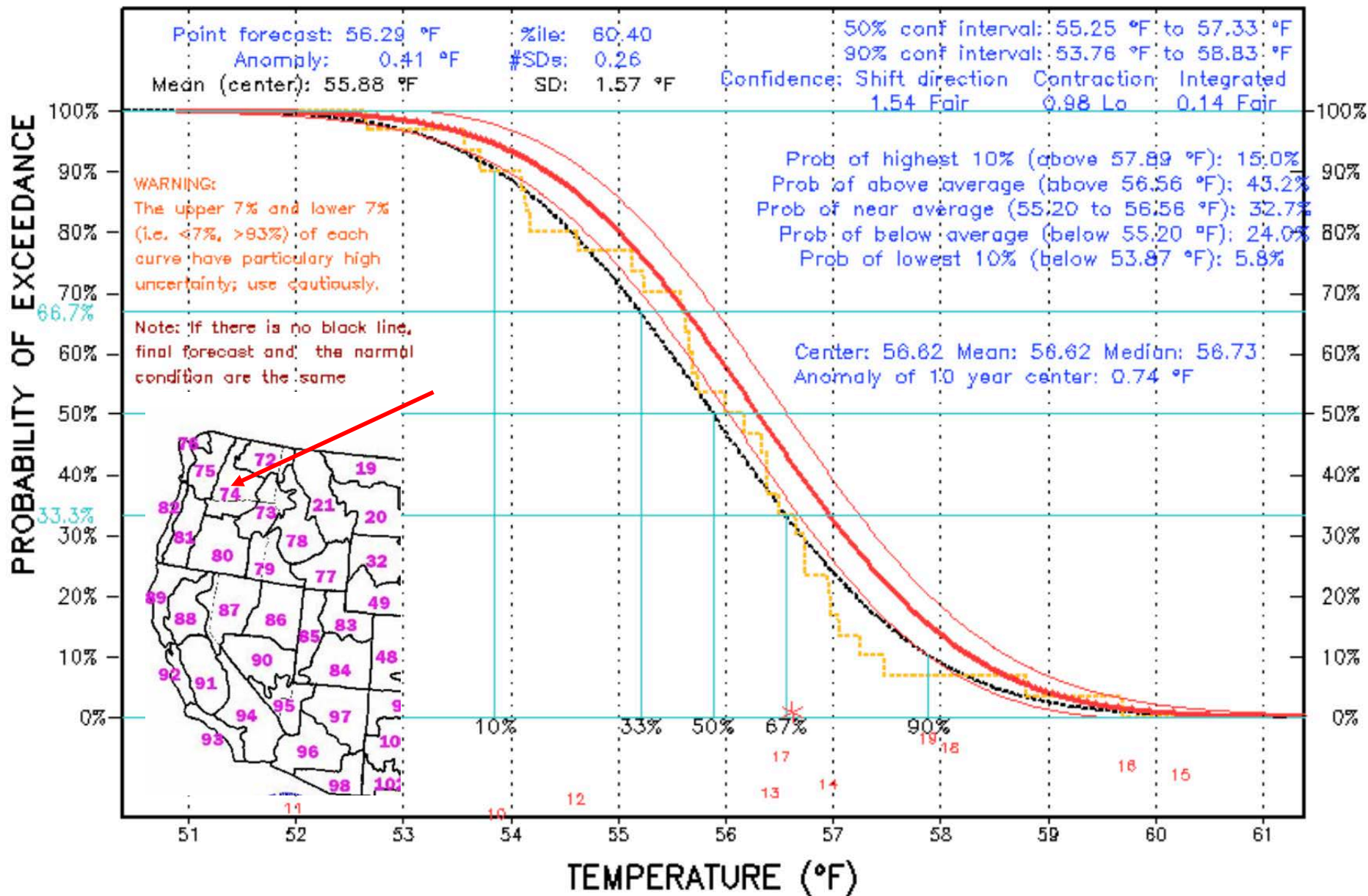
NOAA/CPC Forecasts for Jun-Aug 2020



MEAN TEMPERATURE OUTLOOK FOR AMJ 2020

0.5 MONTH LEAD OUTLOOK – MADE Mar 19 2020

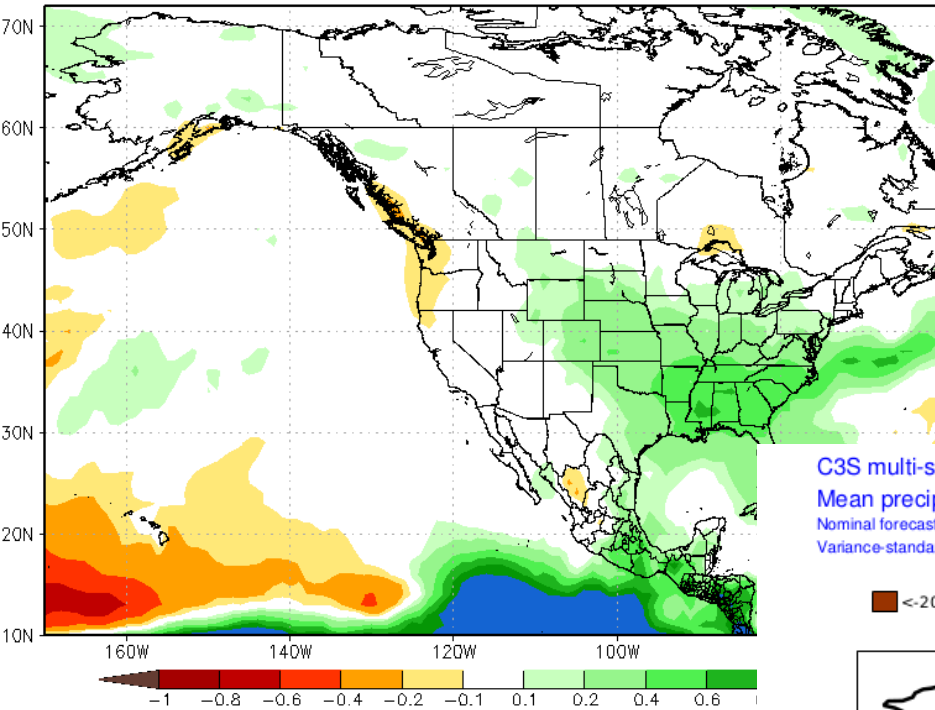
Climate Division 74 (Central Washington)



Climate Model Ensemble Projections for MJJ Precipitation

NMME

NMME Forecast of Prec. rate Anom IC=202004 for Lead 1 2020MJJ



IMME

C3S multi-system seasonal forecast

Mean precipitation anomaly

Nominal forecast start: 01/03/20

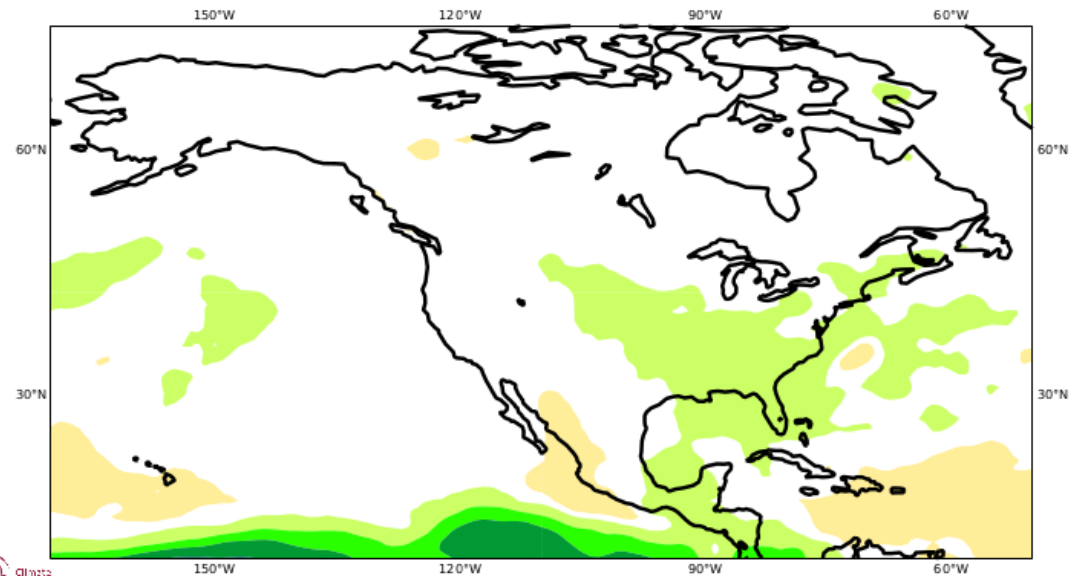
Variance-standardized mean

ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP

MJJ 2020

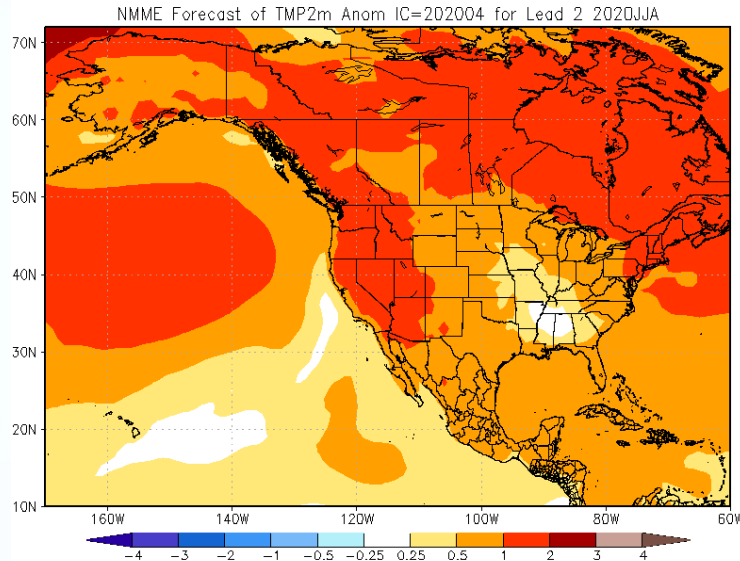
Legend for precipitation anomalies (mm):

<-200mm	-200...-100	-100...-50	-50...-10	-10...10	10...50	50...100	100...200	> 200mm
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Strong indication of warmer than normal temperatures for Jun-Aug

NMME



C3S multi-system seasonal forecast

Mean 2m temperature anomaly

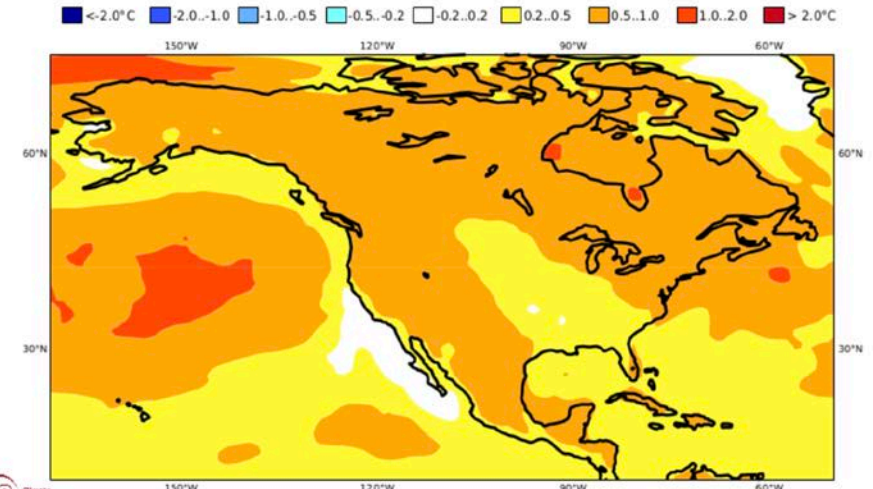
Nominal forecast start: 01/03/20

Variance-standardized mean

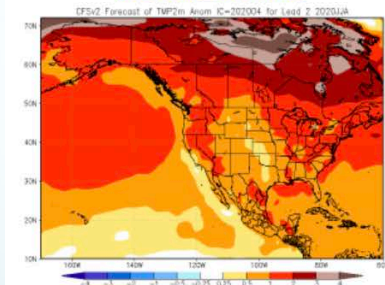
ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP

JJA 2020

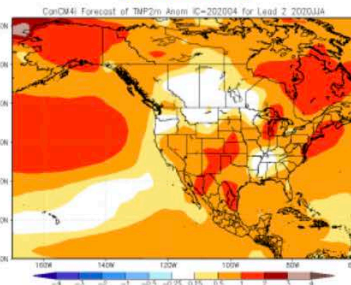
IMME



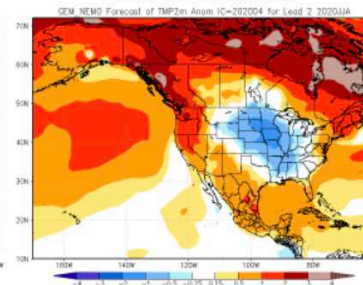
NCEP_CFSv2



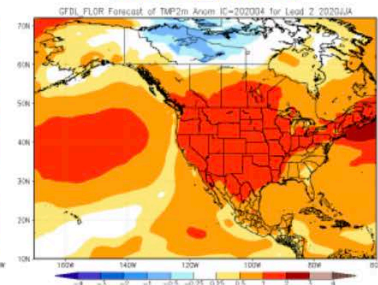
CanCM4i



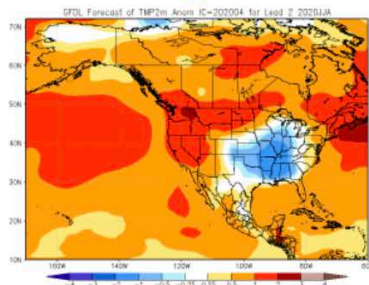
GEM_NEMO



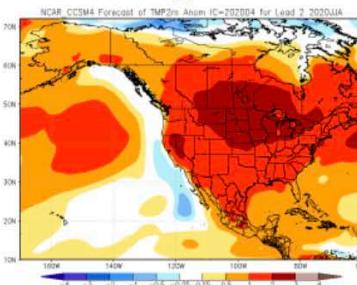
GFDL_FLOR



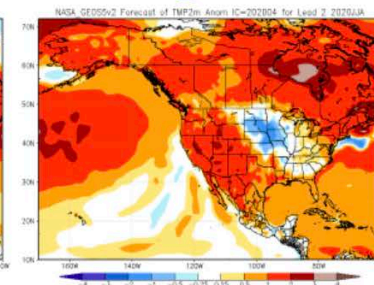
GFDL_CM2.1



NCAR_CCSM4

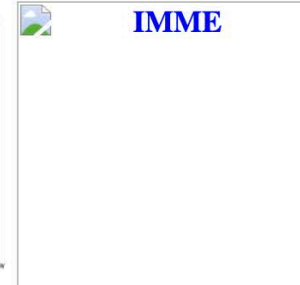


NASA_GEOS5v2



IMME

IMME



Final Remarks

- Near-normal temperatures for water year 2020 for most of the state, but dry east of the Cascades
- Overall cool conditions for March preserved snowpack in most locations, but the dry March worsened the Drought Monitor depiction in eastern WA
- ENSO not liable to be a significant player in the climate system during the next 6 months
- Expecting temperatures to run moderately above normal for spring but even warmer for summer (JJA)
- Spring precipitation is anybody's guess
- My lawn needs mowing every 5 days!