

Regional Climate Perspective

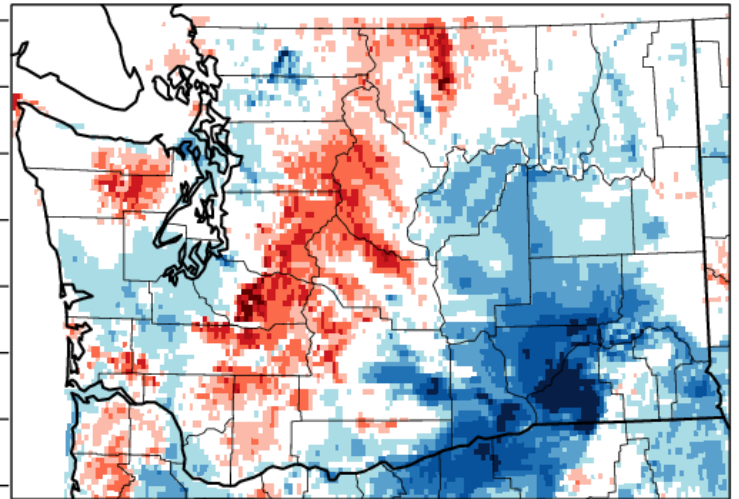
Nick Bond & Karin Bumbaco
Office of the Washington State Climatologist
Joint Institute for the Study of Atmosphere and Ocean
University of Washington
24 January 2020

2020 Water Year

Temperature

Washington - Mean Temperature

October-December 2019 Departure from 1981-2010 Normal

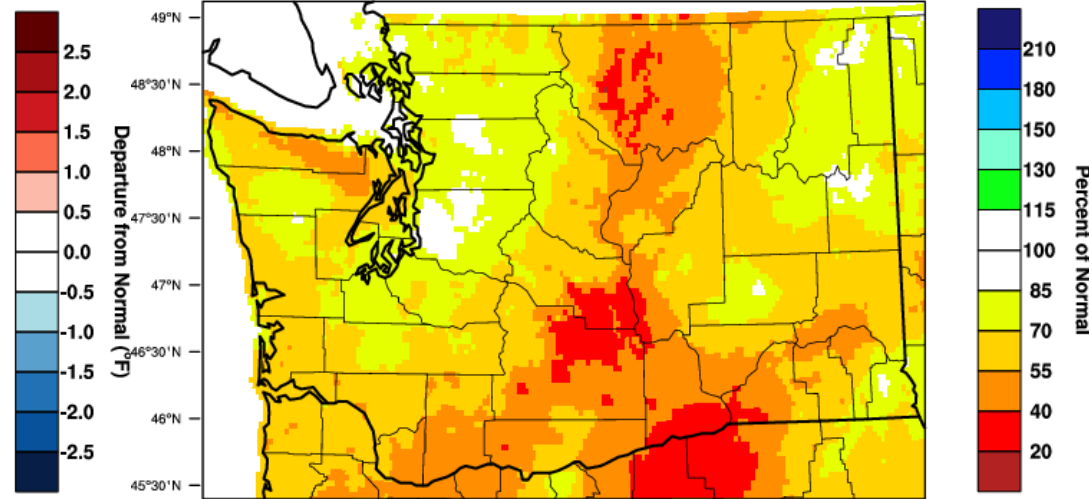


WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 JAN 2020

Precipitation

Washington - Precipitation

October-December 2019 Percent of 1981-2010 Normal



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

WWDT

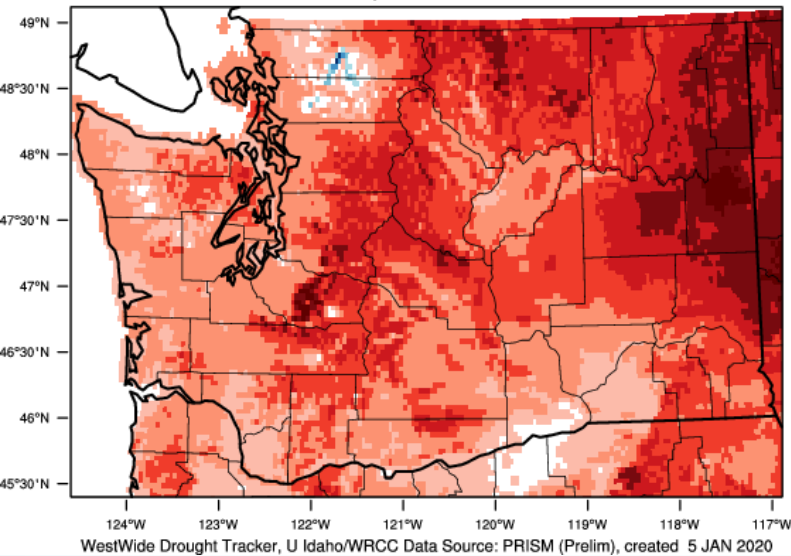
- Averaged statewide, near-normal temperatures (+0.1°F) but with obvious spatial variability
- Averaged statewide, WY 2020 precipitation is the 13th driest* on record (-5.52"; 67% of normal)

*records since 1895

December 2019

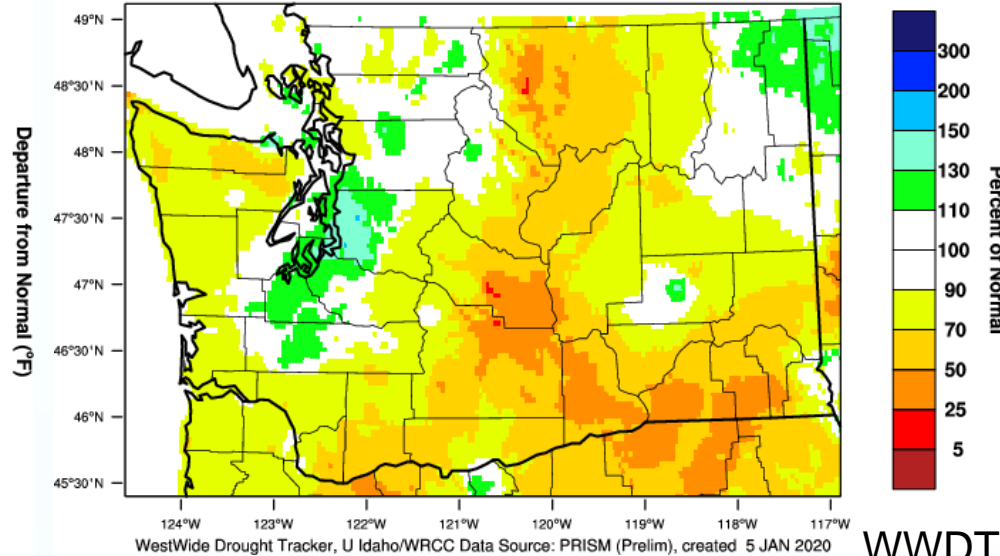
Temperature Washington - Mean Temperature

December 2019 Departure from 1981-2010 Normal



Precipitation Washington - Precipitation

December 2019 Percent of 1981-2010 Normal

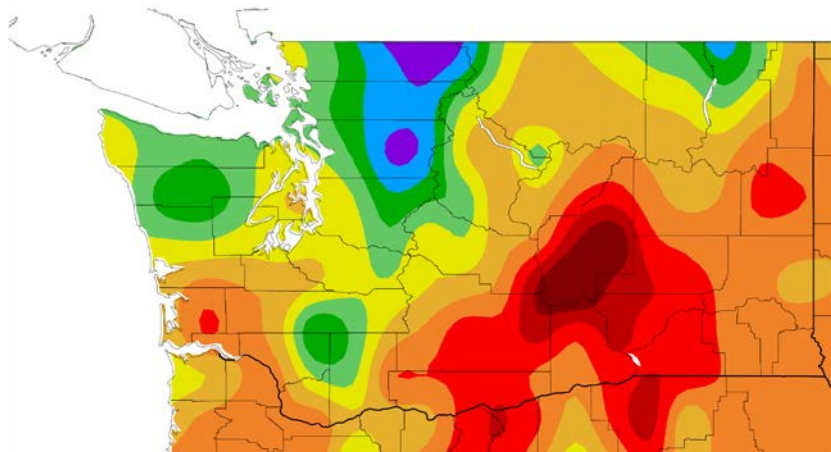


WWDT

- Above normal Dec temperatures (+3.5°F averaged statewide); in the upper third of the historical record
- Averaged statewide, December precipitation anomalies balance to some extent (-0.70" averaged statewide)

January 2020 so far

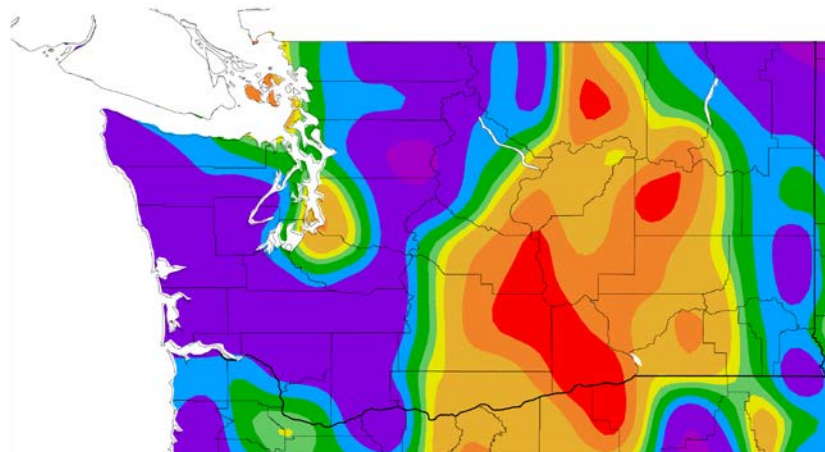
Departure from Normal Temperature (F)
1/1/2020 – 1/22/2020



Generated 1/23/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

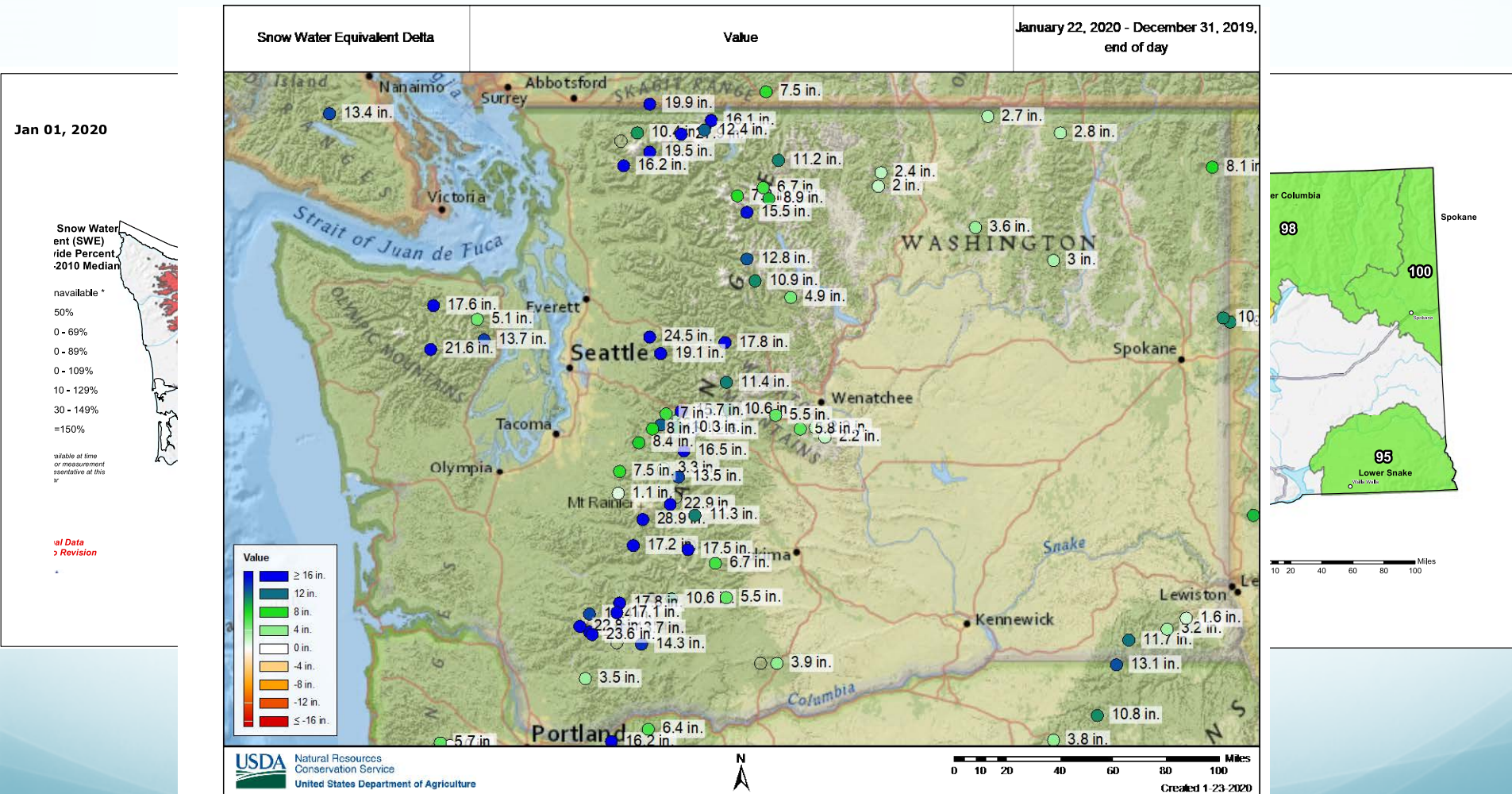
Percent of Normal Precipitation (%)
1/1/2020 – 1/22/2020



Generated 1/23/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

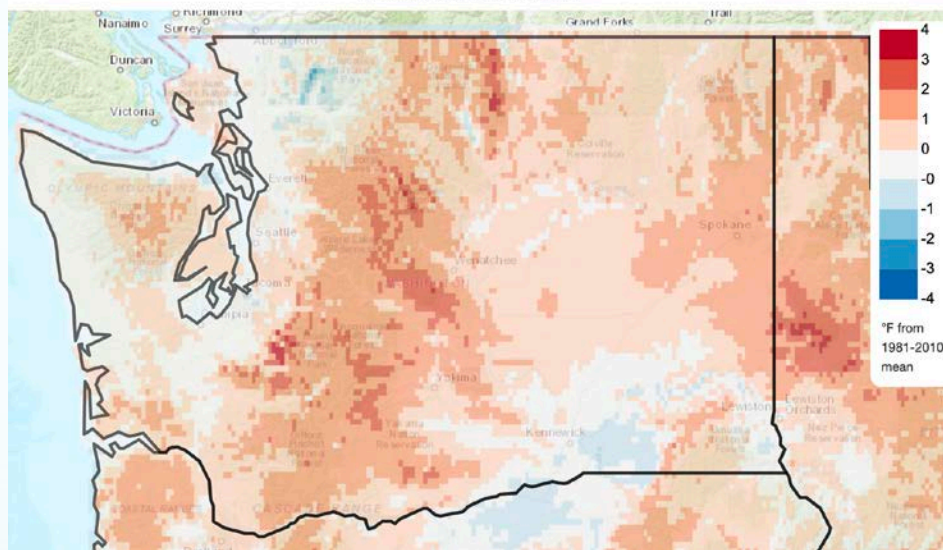
Huge Improvement in Snow



Last 90 Days

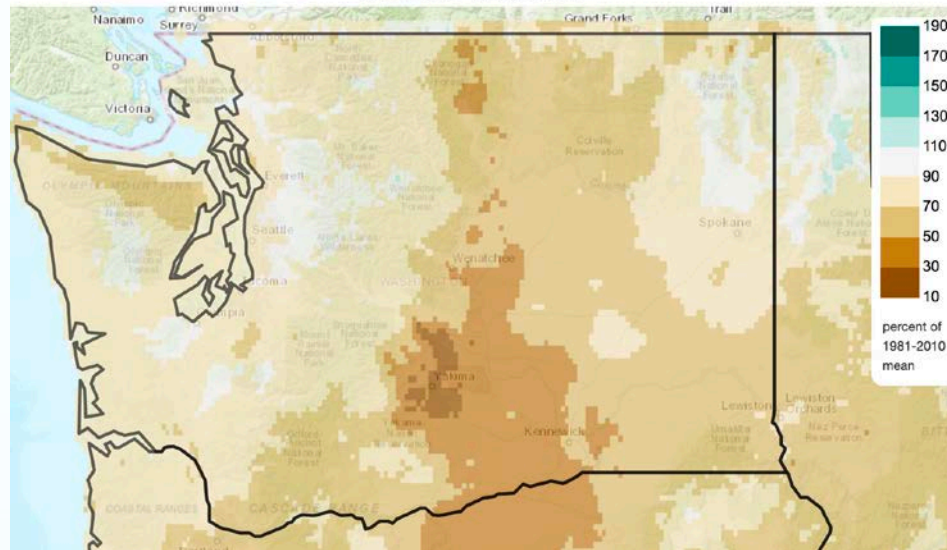
Mean Daily Temperature Anomaly, Last 90 Days

2019/10/25 - 2020/01/22



Total Precipitation Anomaly, Last 90 Days

2019/10/25 - 2020/01/22

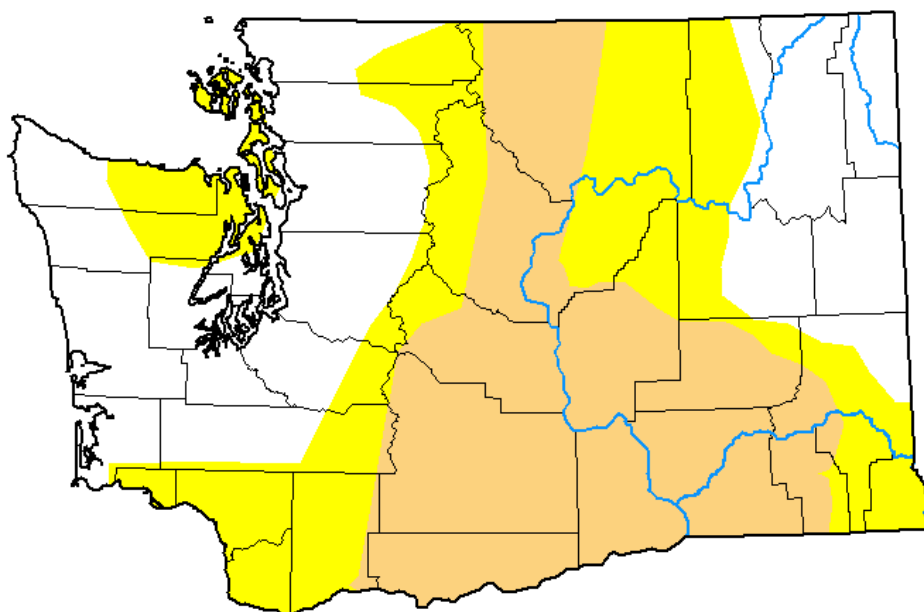


- January improved WY-to-date precipitation in some locations, but still below normal in eastern WA

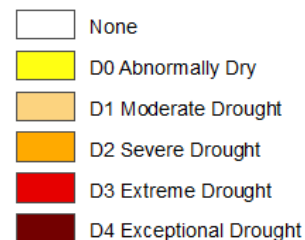
US Drought Monitor

U.S. Drought Monitor Washington

January 21, 2020
(Released Thursday, Jan. 23, 2020)
Valid 7 a.m. EST



Intensity:



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

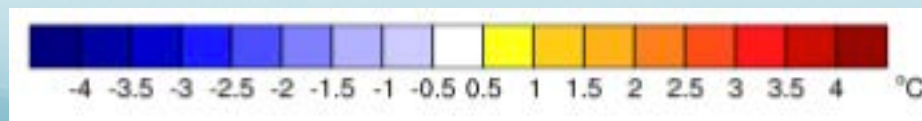
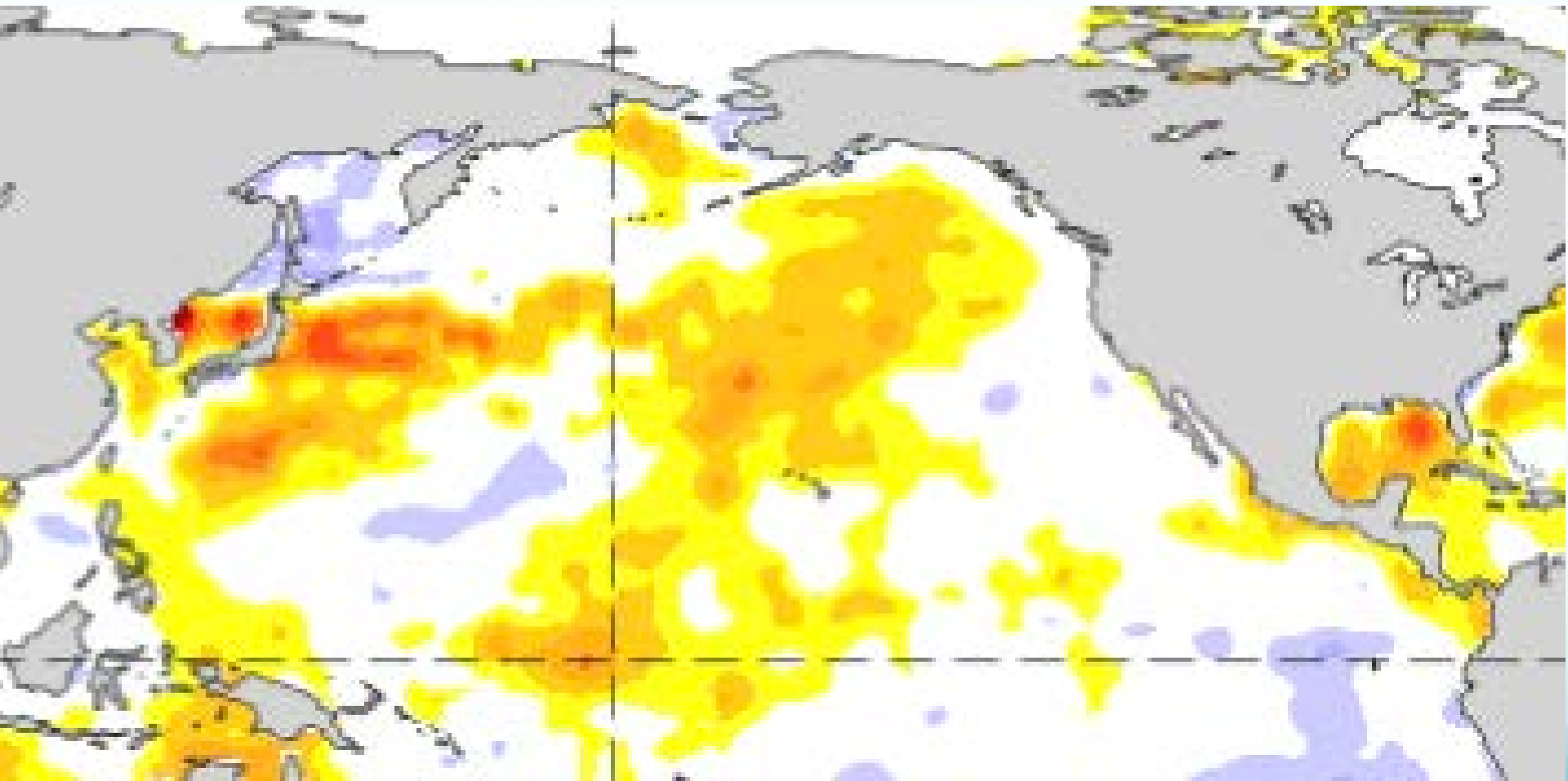
Author:

Richard Heim
NCEI/NOAA



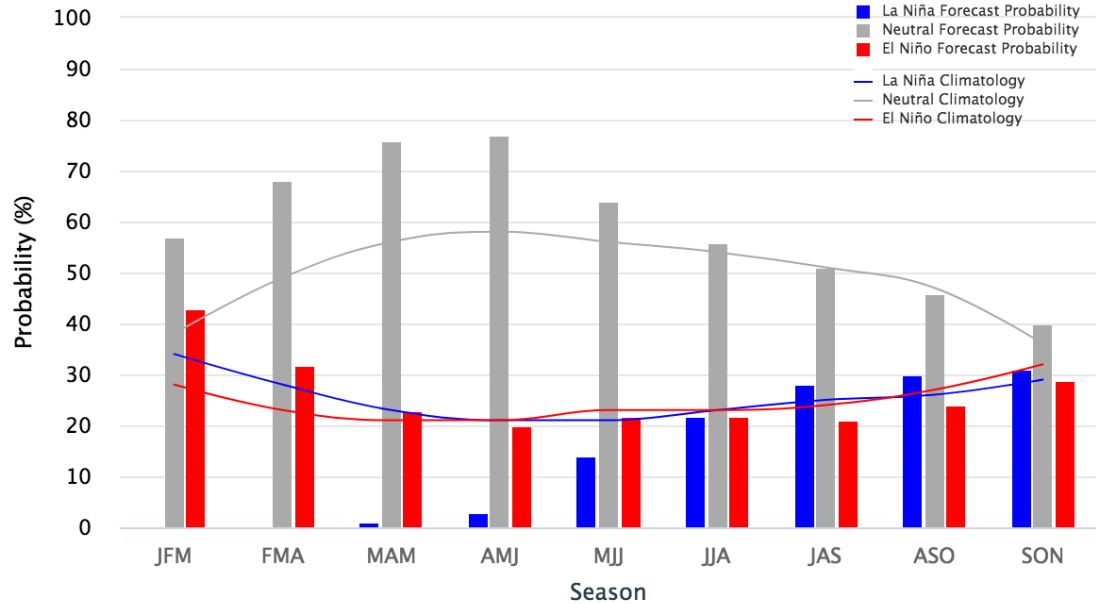
droughtmonitor.unl.edu

Sea Surface Temperature Anomalies 12-18 January 2020



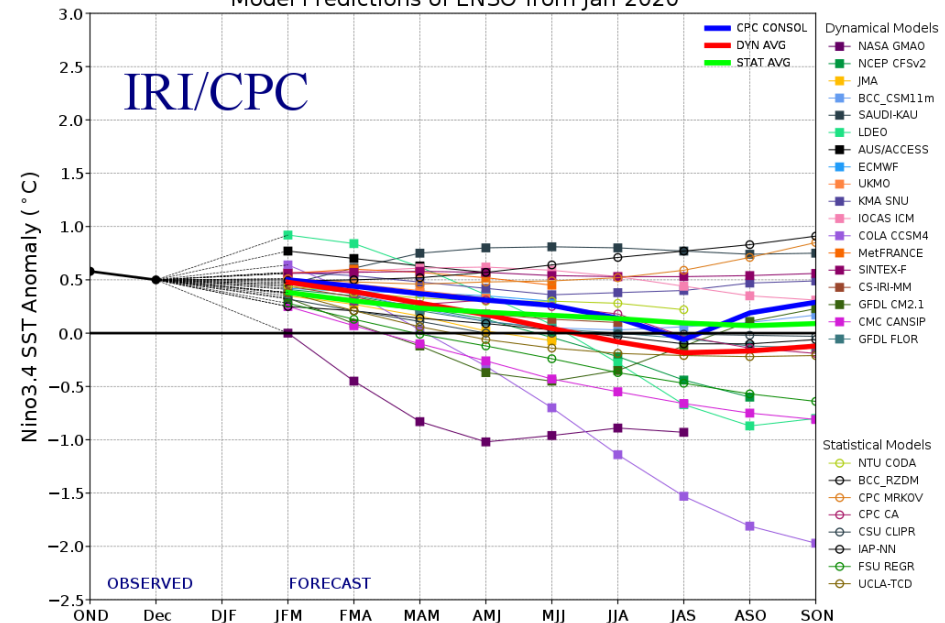
Mid-January 2020 IRI/CPC Model-Based Probabilistic ENSO Forecasts

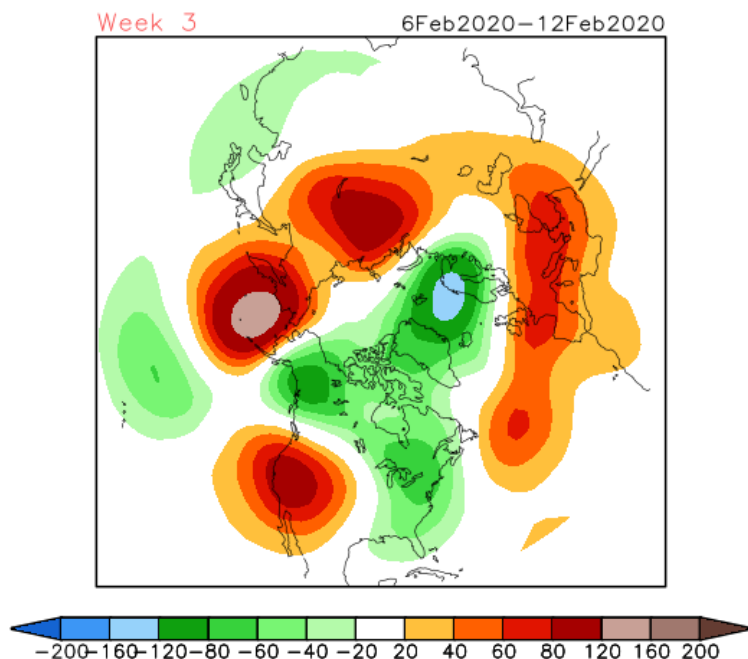
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5°C to 0.5°C



El Niño/La Niña Forecasts Indicate Elevated Odds of Near-Neutral Conditions through Summer 2020

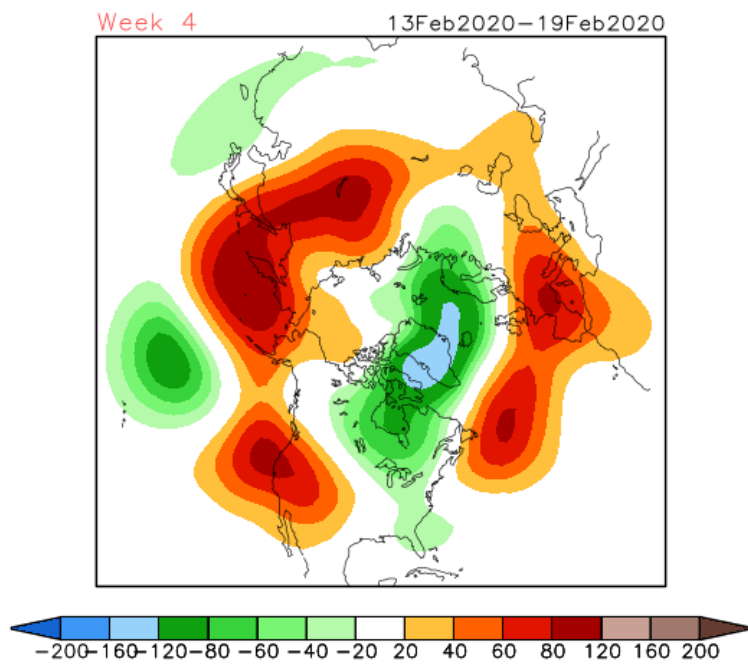
Model Predictions of ENSO from Jan 2020



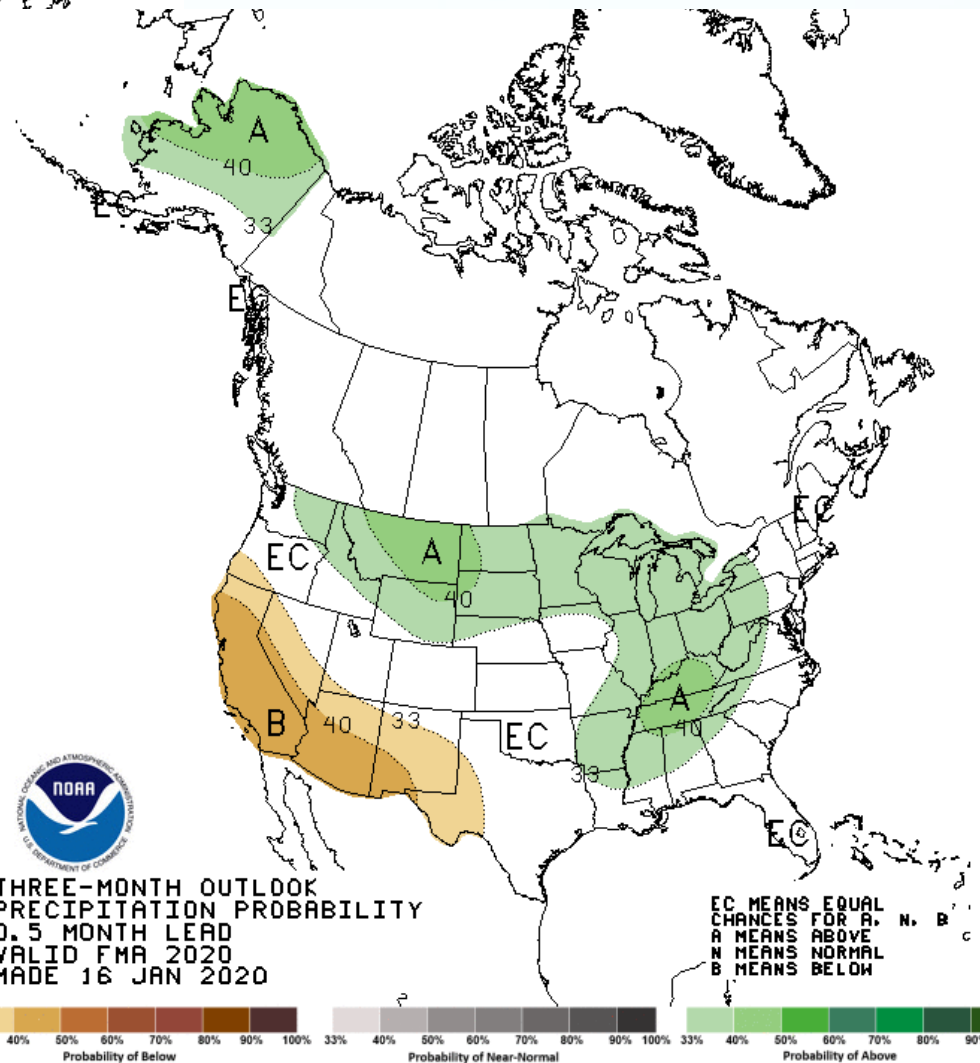
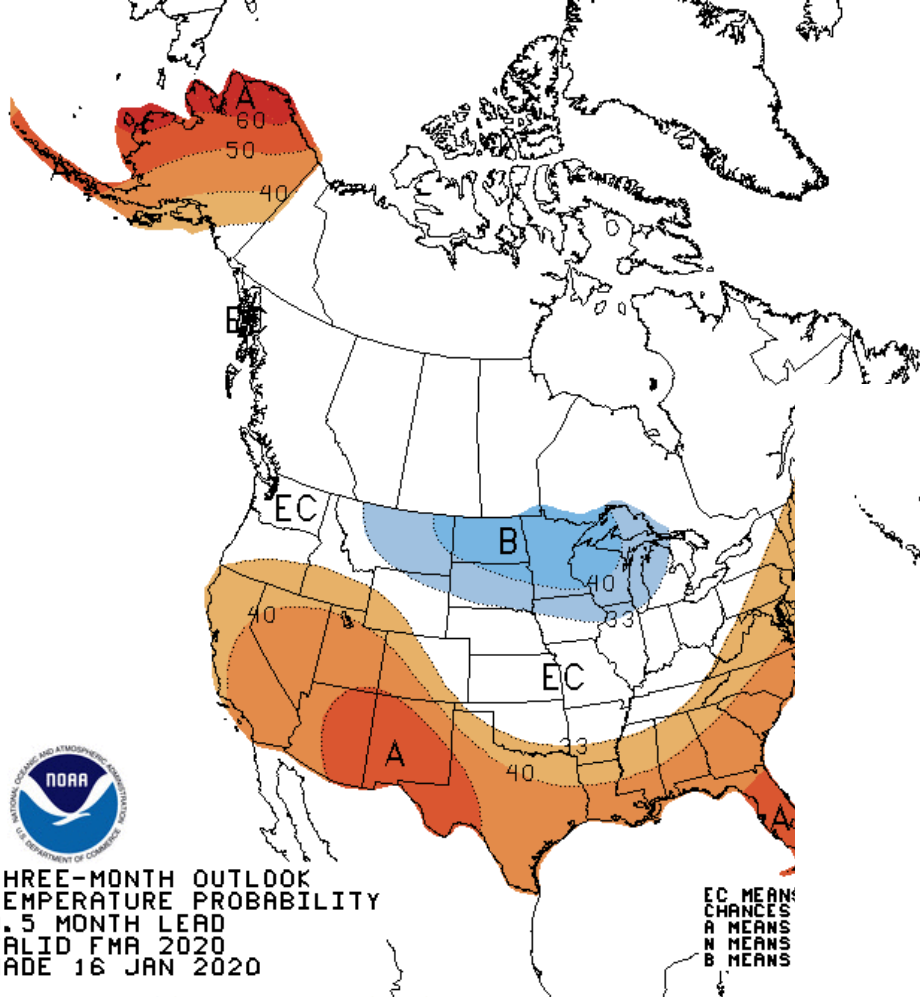


Latest Set of Week 3-4
Forecasts from CFSv2

Anomalously high 500 hPa Z
over west coast of lower
48 states: Stronger than
normal onshore-directed
flow and relatively warm and
wet weather for WA



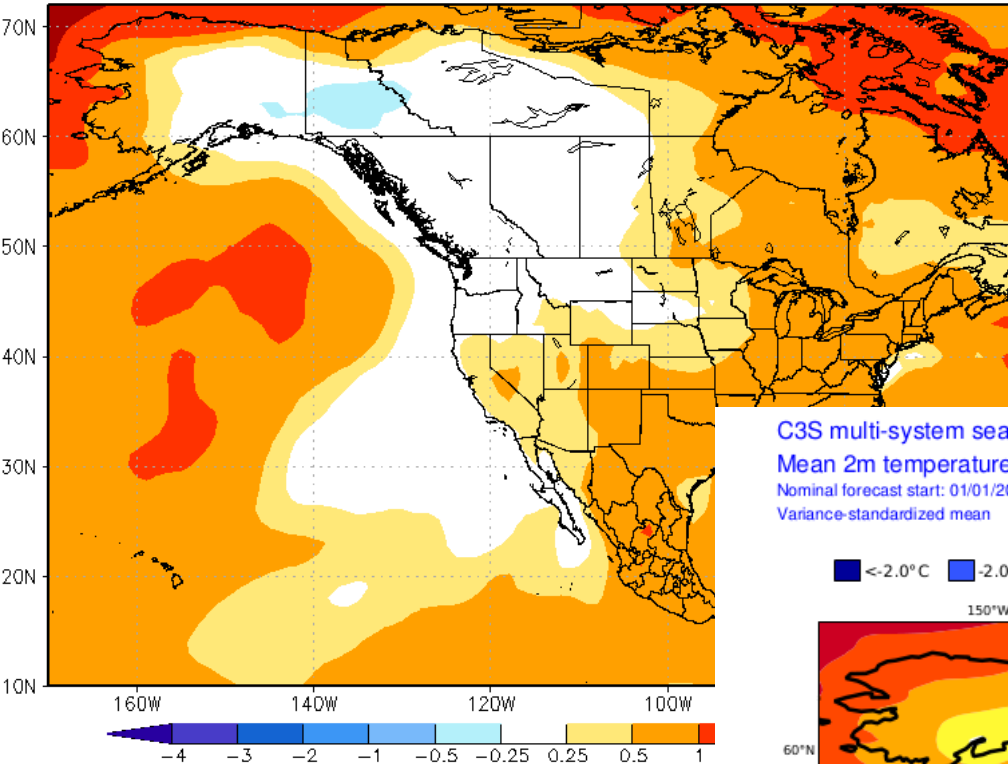
NOAA/CPC Forecasts for Feb-Apr 2020



Climate Model Ensemble Projections for FMA Temperature from Jan 2020

NMME

NMME Forecast of TMP2m Anom IC=202001 for Lead 1 2020FMA



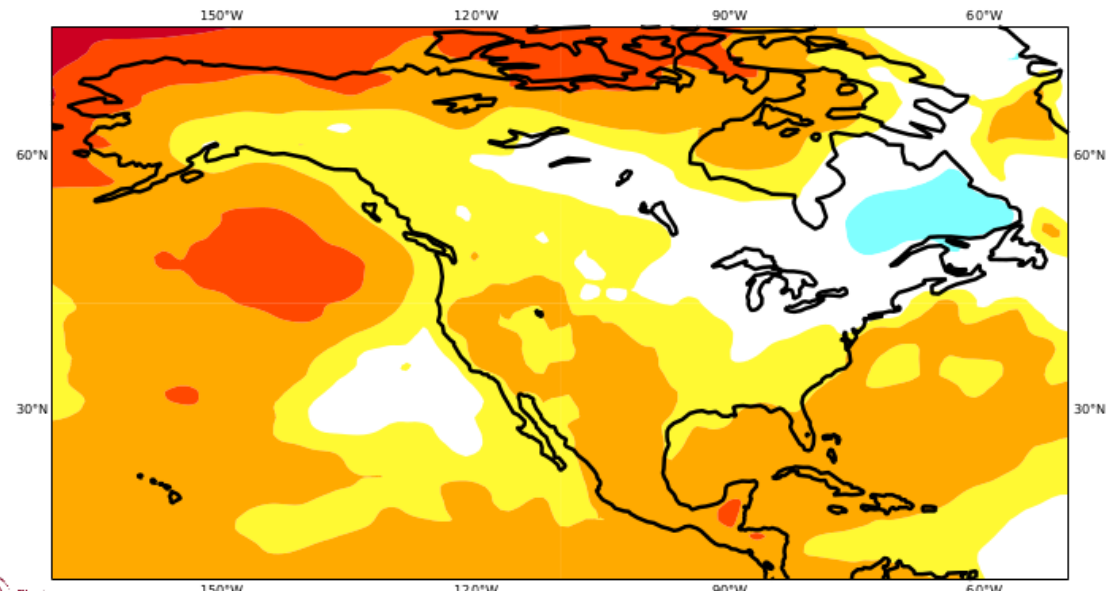
C3S multi-system seasonal forecast
Mean 2m temperature anomaly
Nominal forecast start: 01/01/20
Variance-standardized mean

IMME

ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP
FMA 2020

Legend for temperature anomalies (°C):

<-2.0°C	-2.0..-1.0	-1.0..-0.5	-0.5..-0.2	-0.2..0.2	0.2..0.5	0.5..1.0	1.0..2.0	> 2.0°C
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Variation among Models: Precipitation

IMME

NMME Forecast of Prec. rate Anom IC=202001 for Lead 1 2020FMA

C3S multi-system seasonal forecast

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

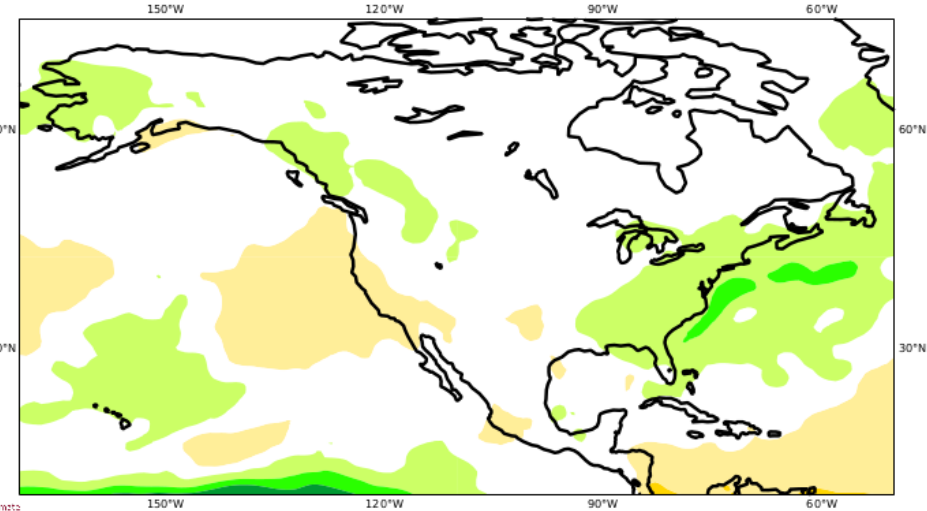
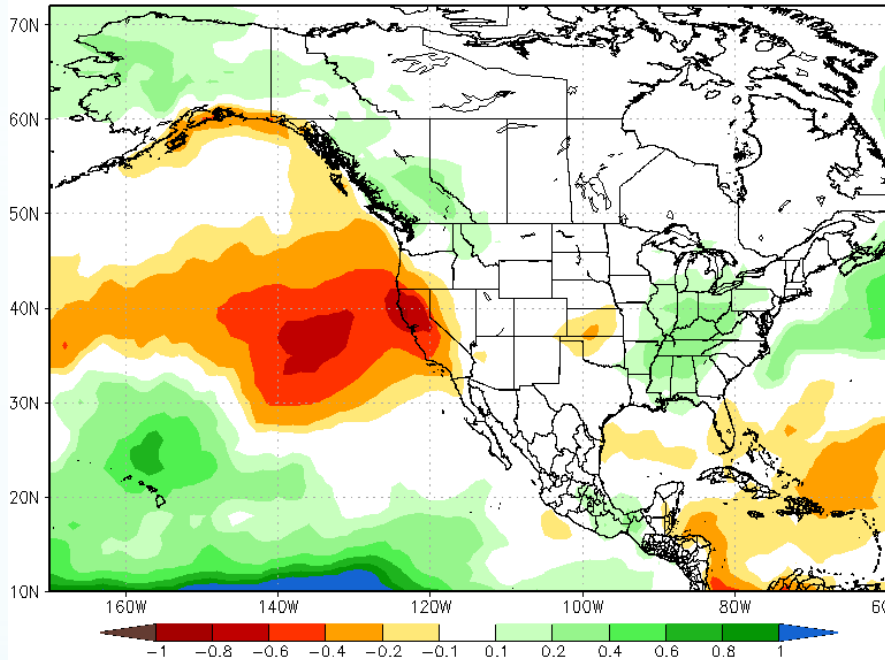
Mean precipitation anomaly

FMA 2020

Nominal forecast start: 01/01/20

Variance-standardized mean

Legend for precipitation anomalies (mm):
 <-200mm, -200..-100, -100..-50, -50..-10, -10..10, 10..50, 50..100, 100..200, >200mm

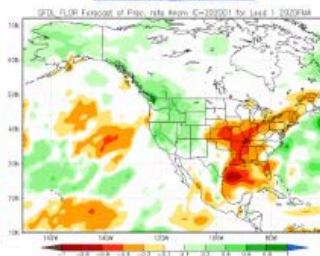
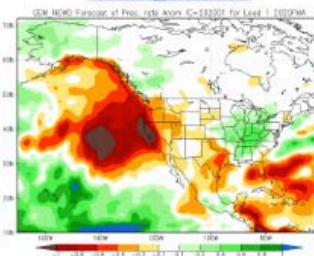
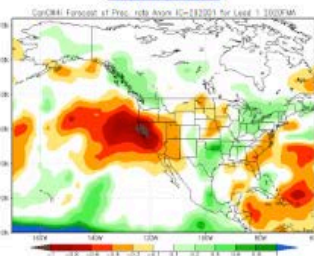
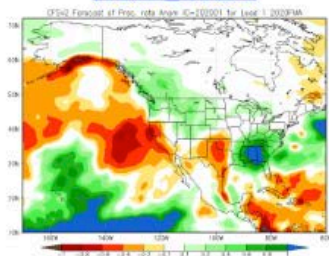


NCEP CFSv2

CanCM4i

GEM NEMO

GFDL FLOR



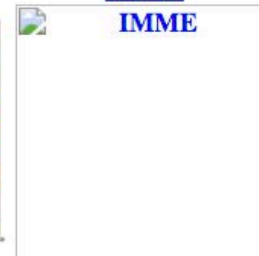
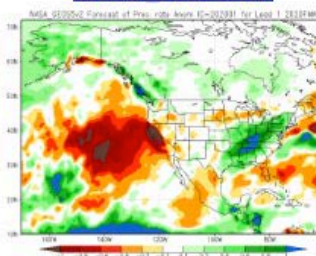
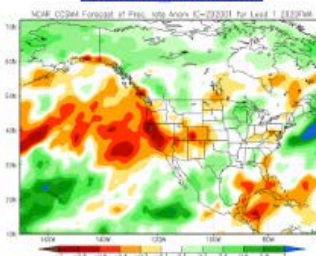
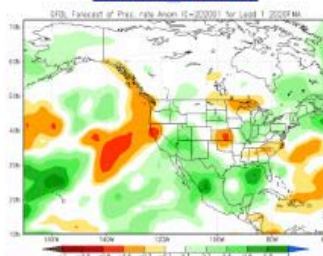
GFDL CM2.1

NCAR CCSM4

NASA GEOS5v2

IMME

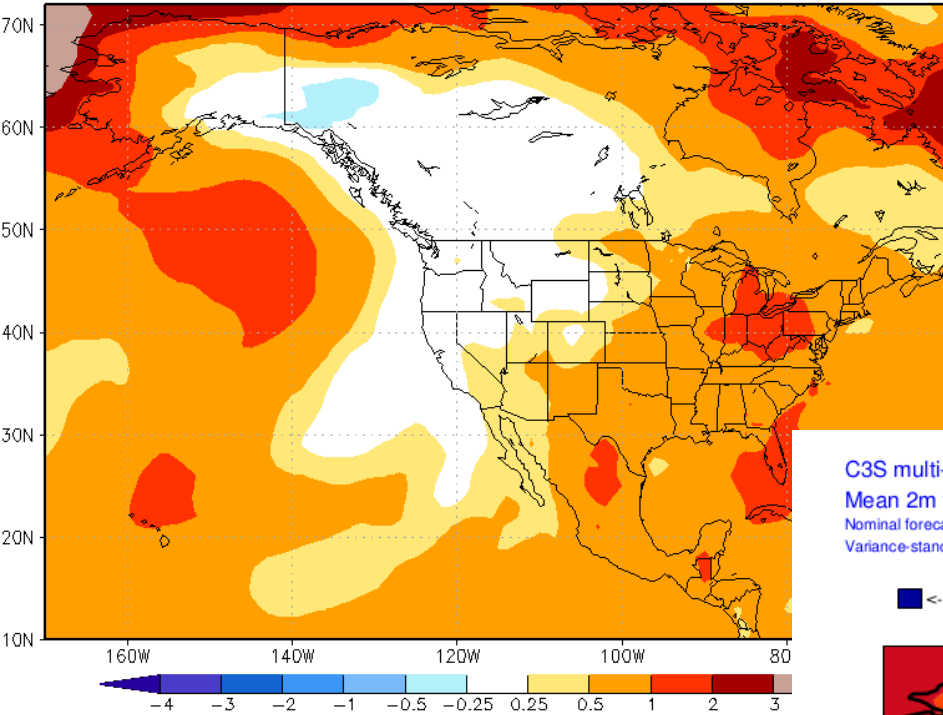
IMME



Climate Model Ensemble Projections for JFM Temperature from Dec 2019

NMME

NMME Forecast of TMP2m Anom IC=201912 for Lead 1 2020JFM

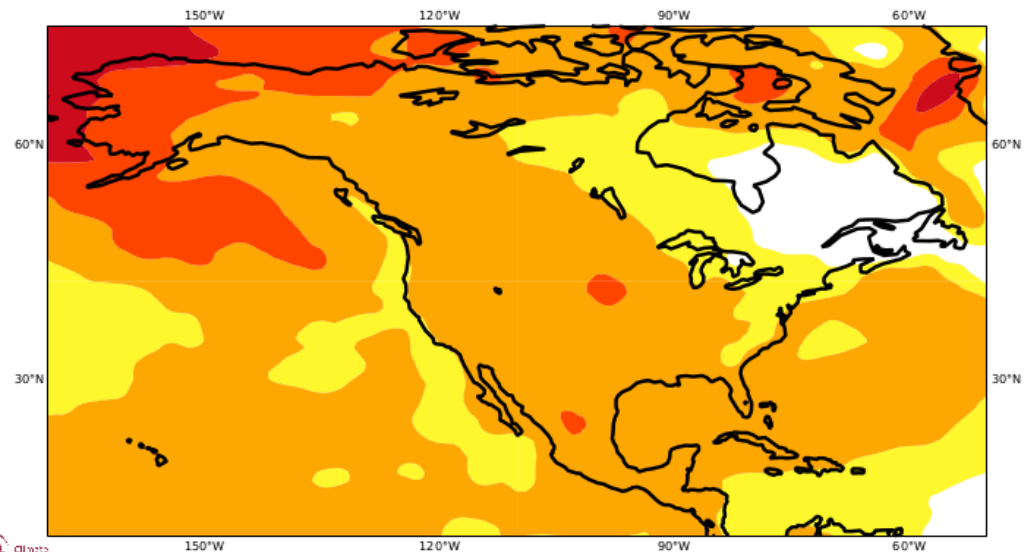


IMME

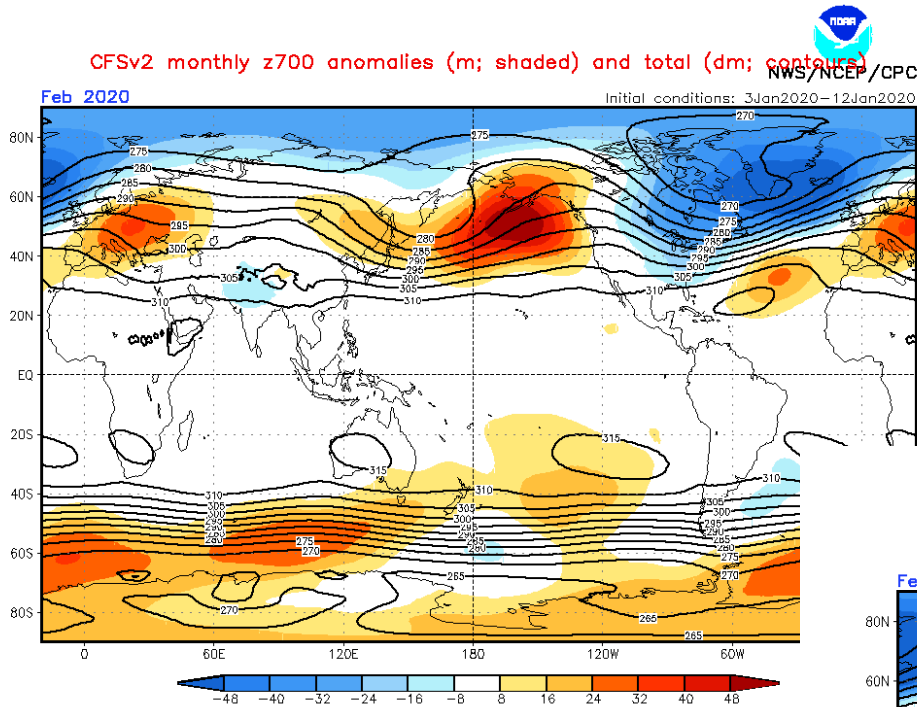
C3S multi-system seasonal forecast
Mean 2m temperature anomaly
Nominal forecast start: 01/11/19
Variance-standardized mean

ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP
JFM 2020

■ <-2.0°C ■ -2.0..-1.0 ■ -1.0..-0.5 ■ -0.5..-0.2 ■ -0.2..0.2 ■ 0.2..0.5 ■ 0.5..1.0 ■ 1.0..2.0 ■ > 2.0°C

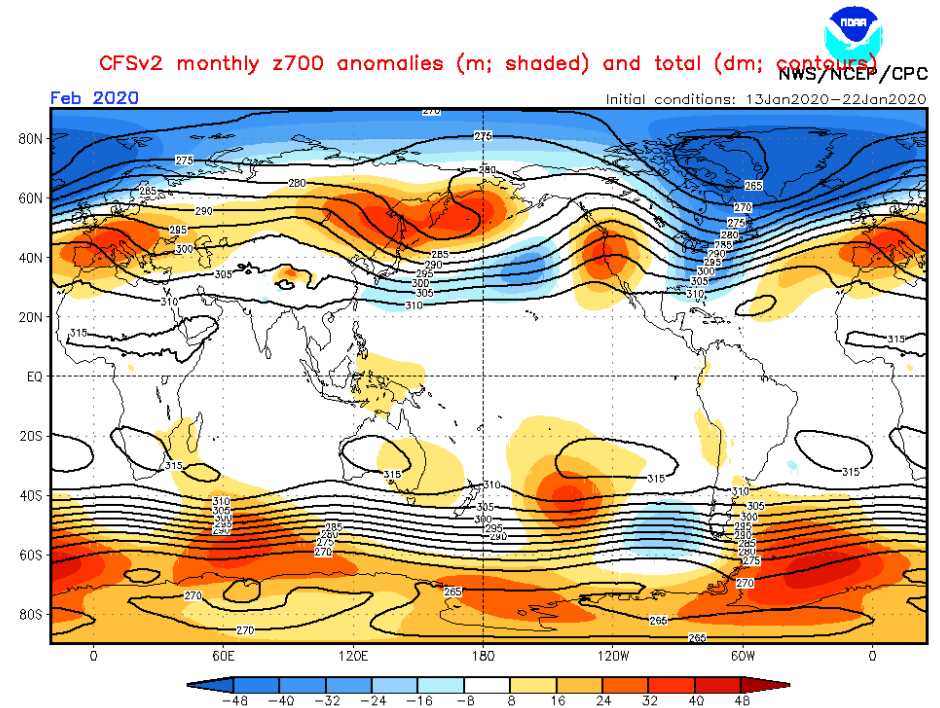


Early January Model Runs



Latest Simulations From NOAA's CFS Model Indicate a Warmer February

Latest Model Runs



Final Remarks

- Water year 2020 still warm and dry despite the wetter than normal January in western WA
- Remarkable early January mountain snowfall that made great improvements
- 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 the rest of winter into summer due to multi-year trends and climate model output
- My storm water system should continue to get challenged