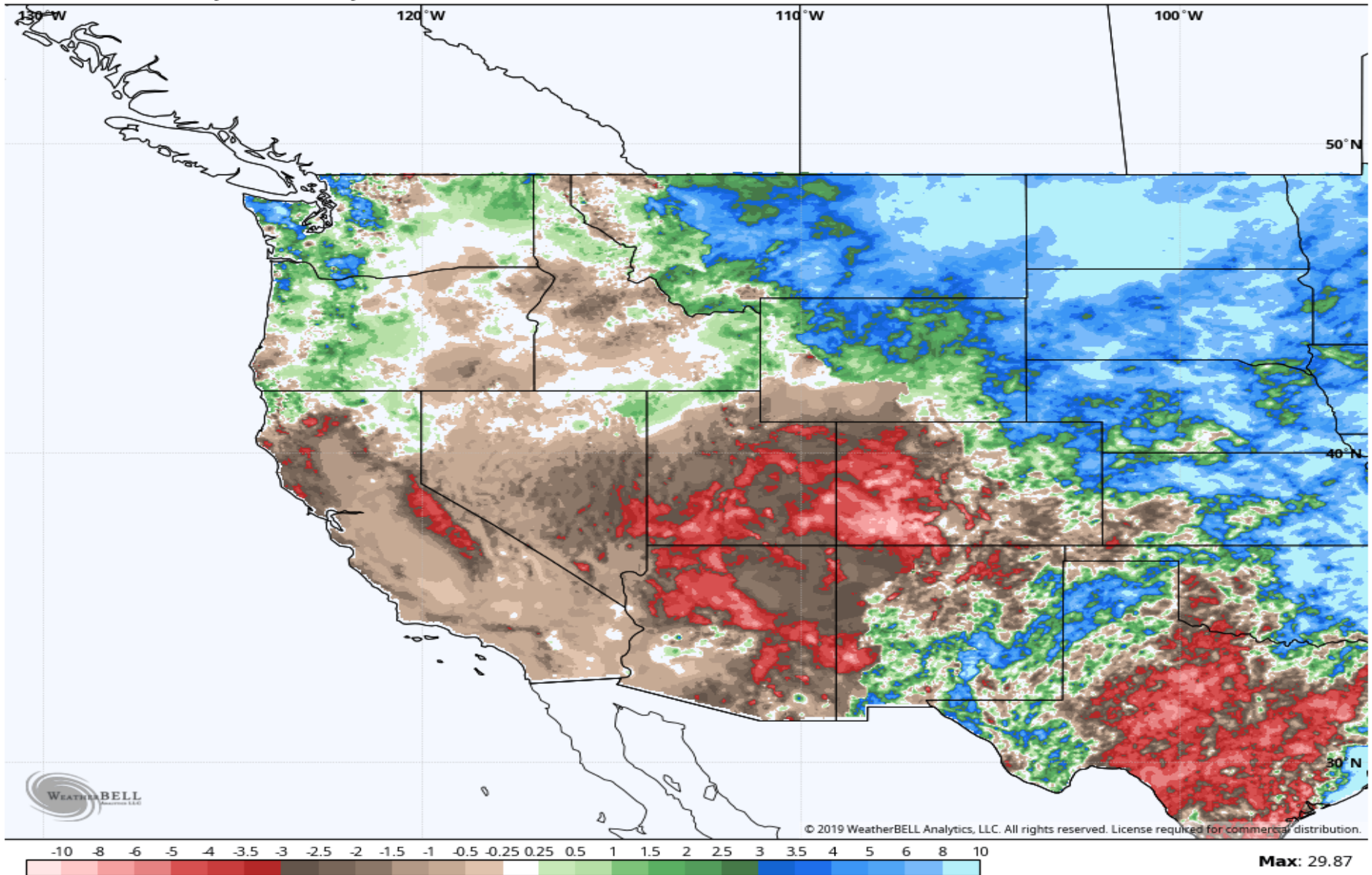


Precipitation +/- Inches of "Normal" Past 90 Days

HRAP 4 km • 90-Day Total Anomaly (Inches)

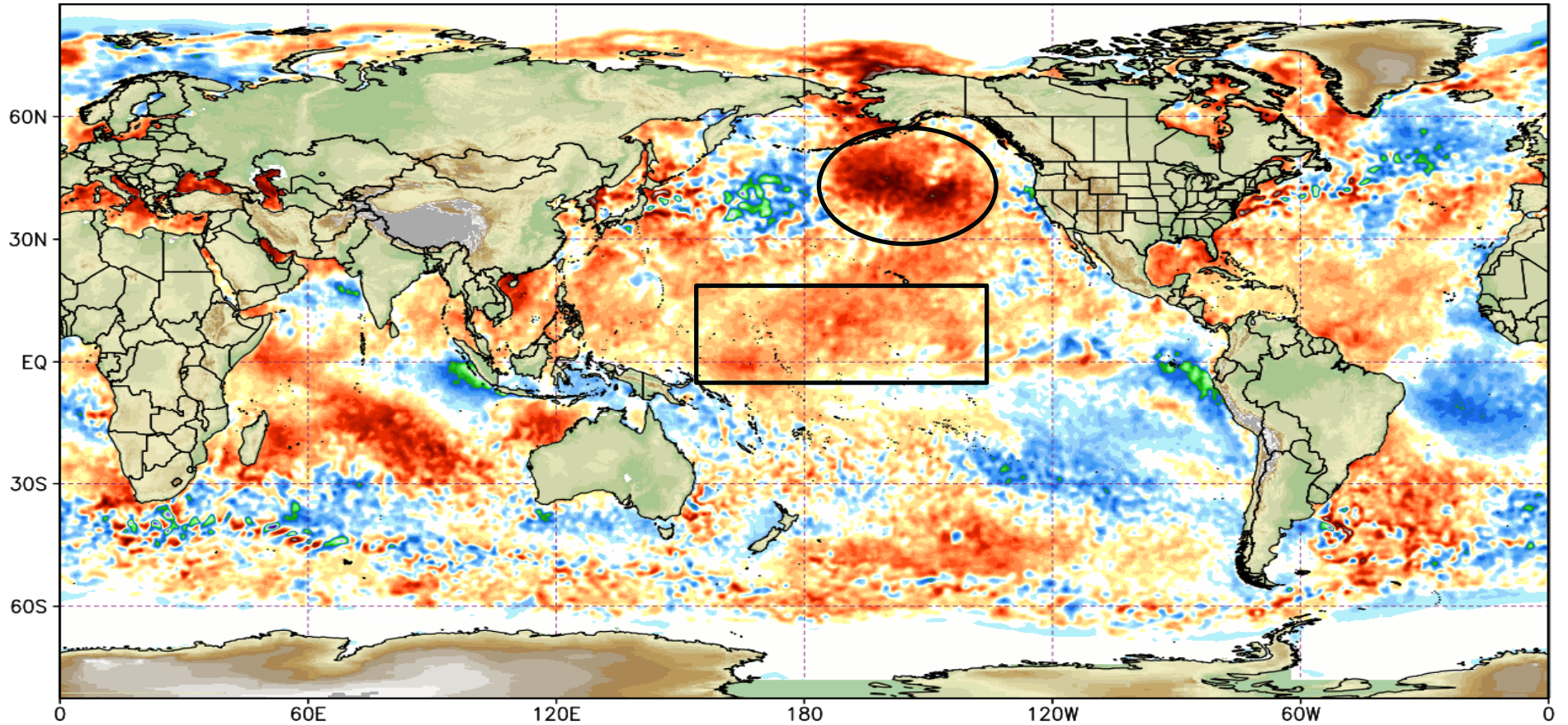
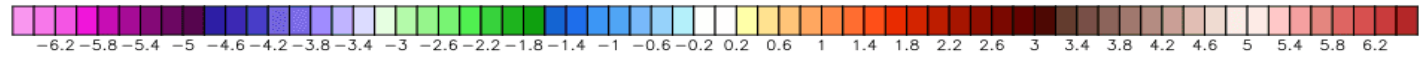
Valid: 12z Wed 30 Oct 2019



ENSO Update

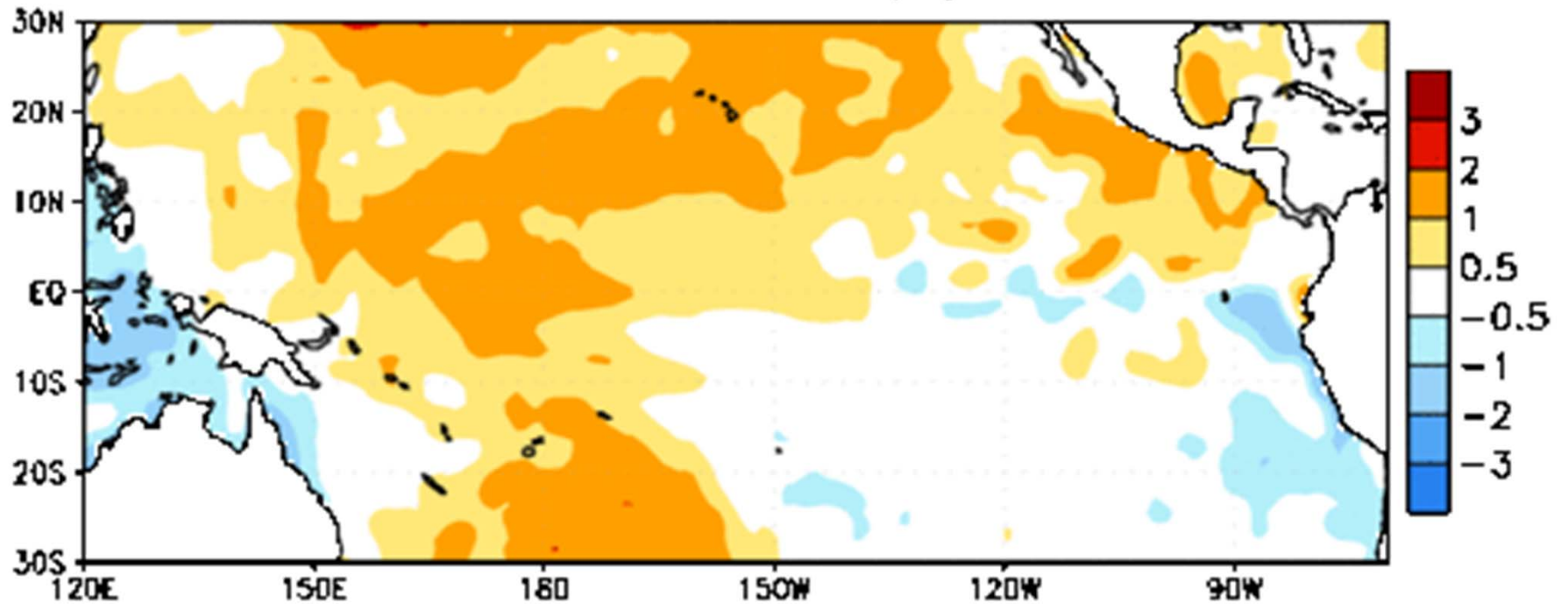
Sea Surface Temperature Anomalies 10/29/19

0.25° OISST Anomaly [°C]
00Z29OCT2019 1981-2010 Climo

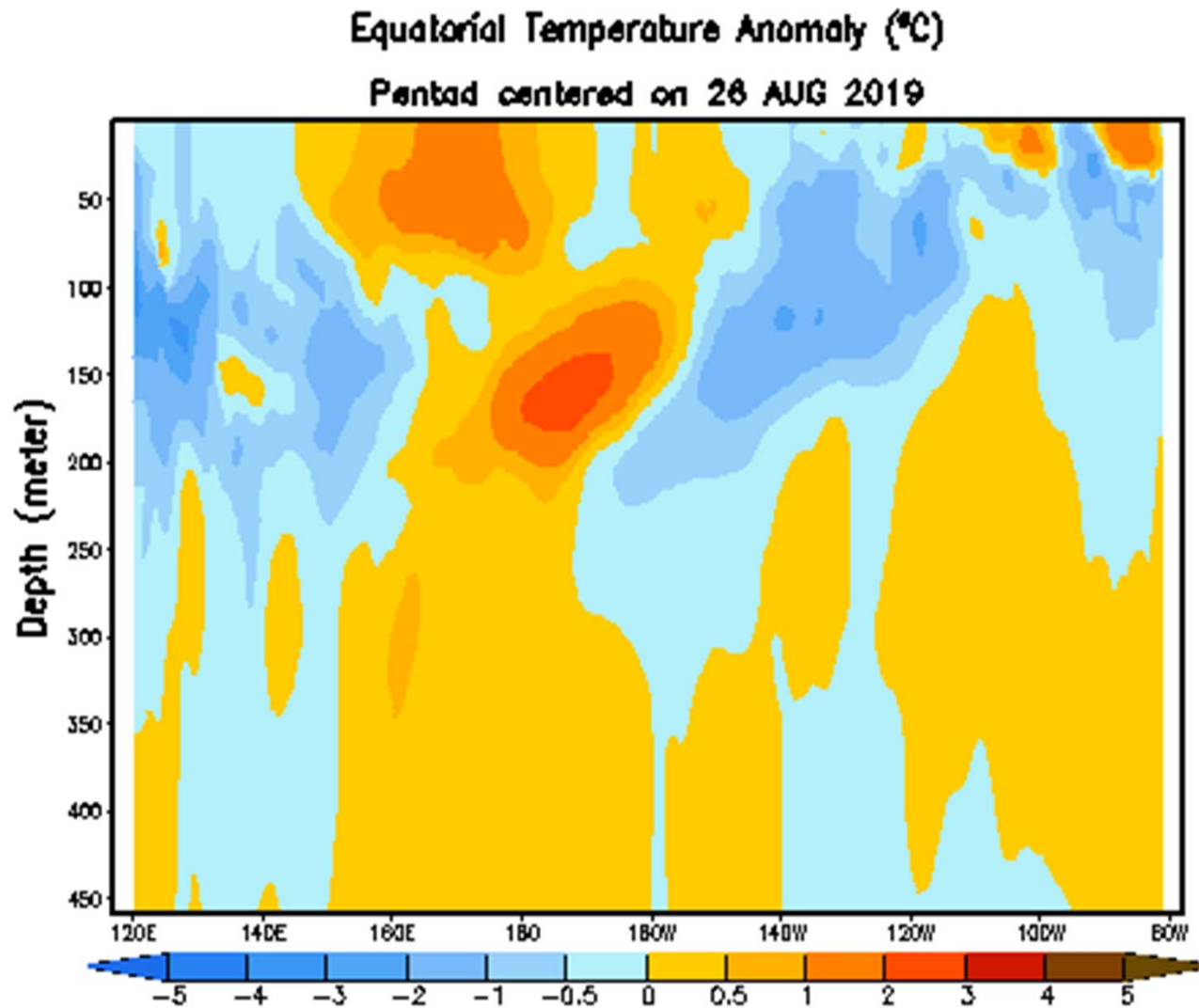


Neutral to weak Modoki El Niño...

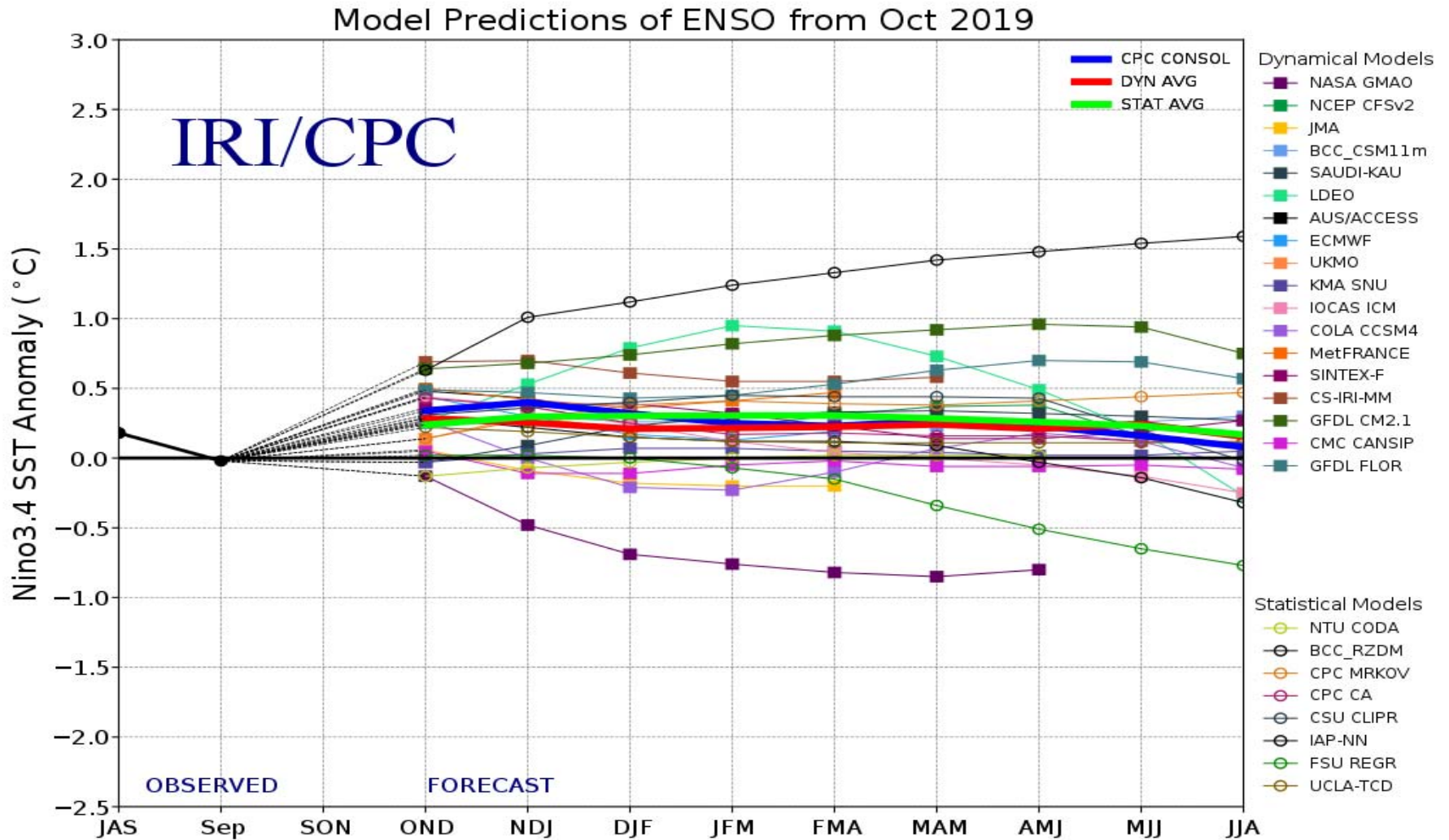
Week centered on 07 AUG 2019
SST Anomalies (°C)



Warmest water beneath the surface resides across the Central/Western Pacific...cooler farther east

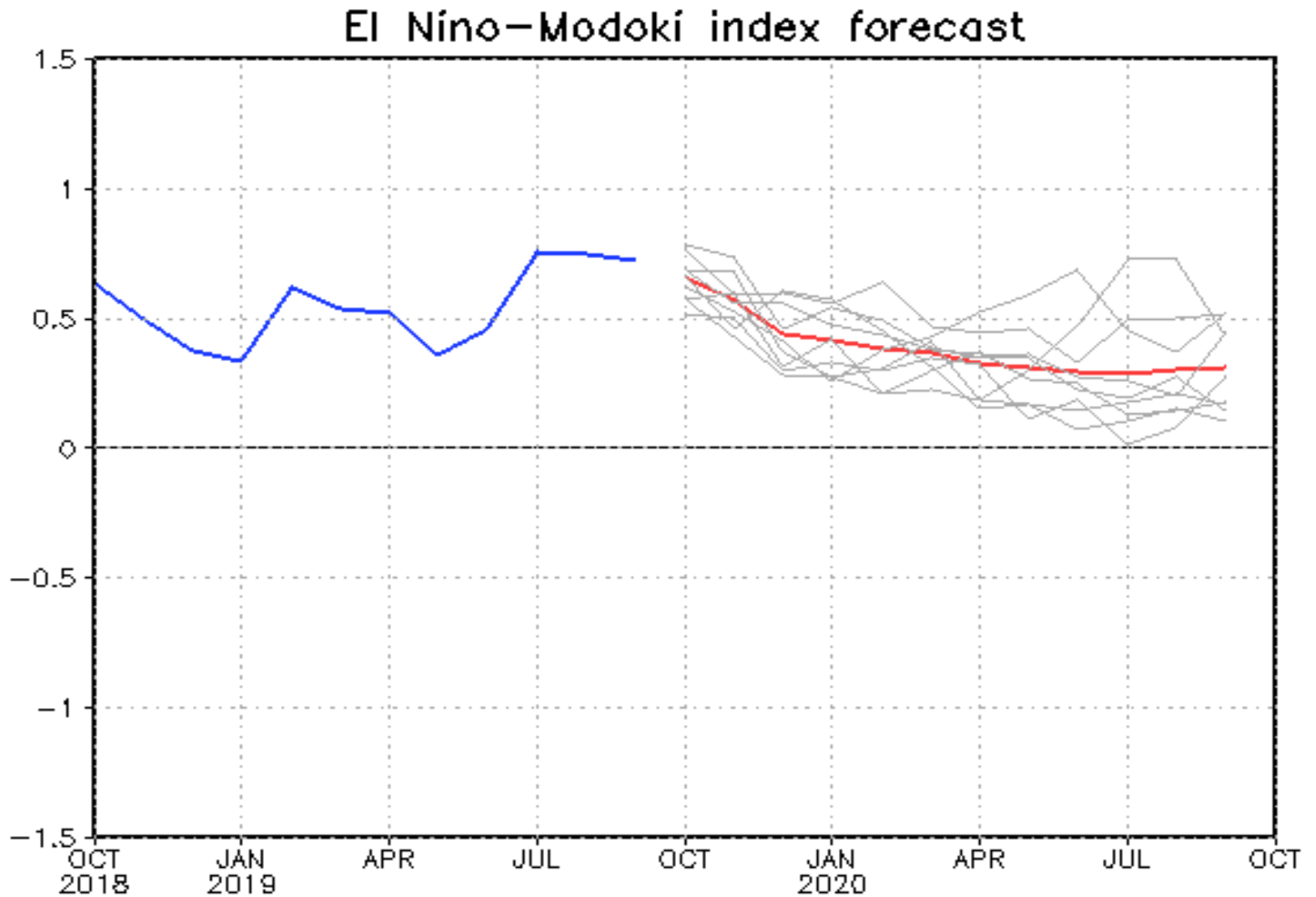


ENSO Plumes Ensemble Favors Neutral to Weak Modoki El Niño

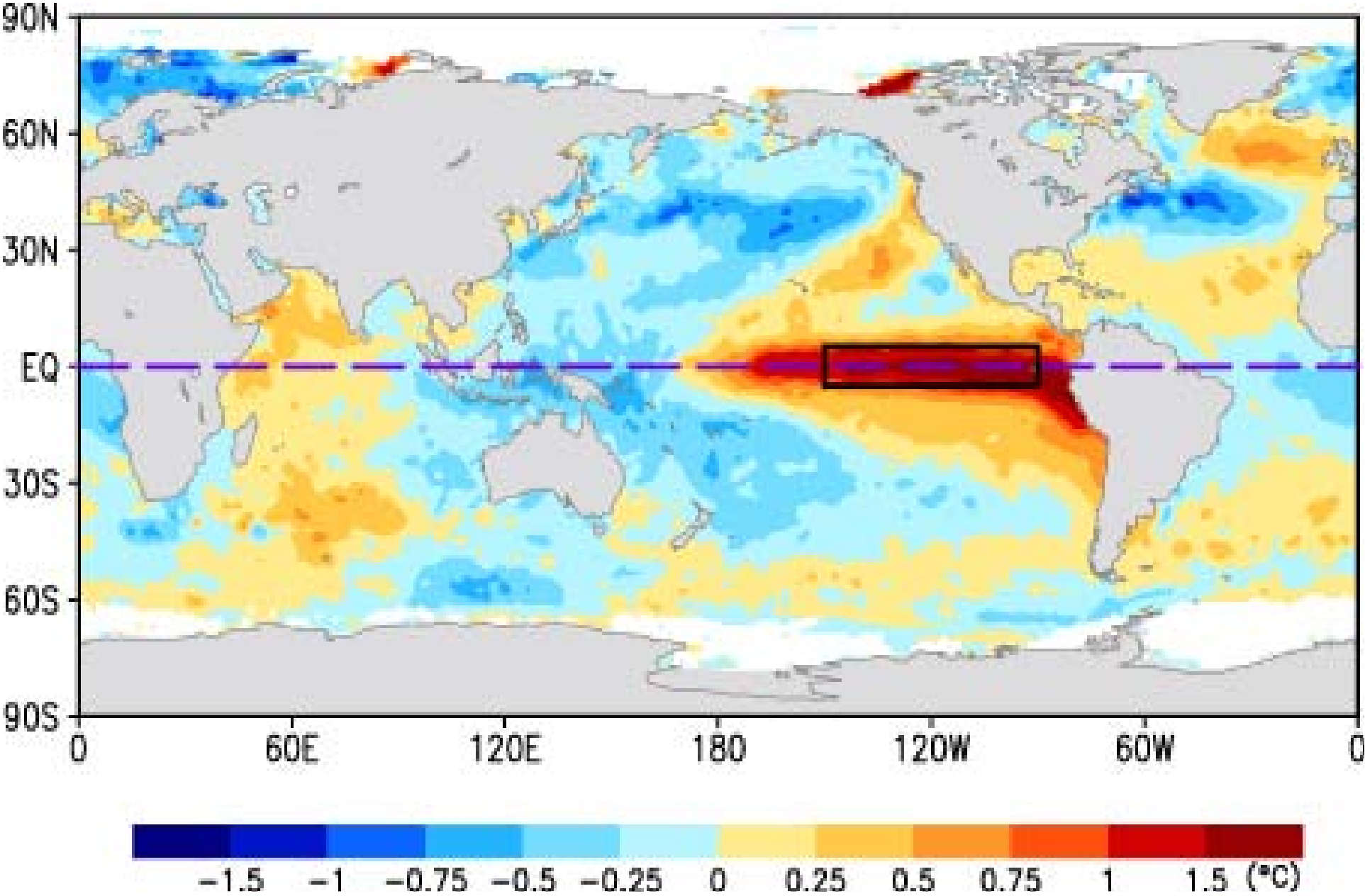


JAMSTEC Modoki Index

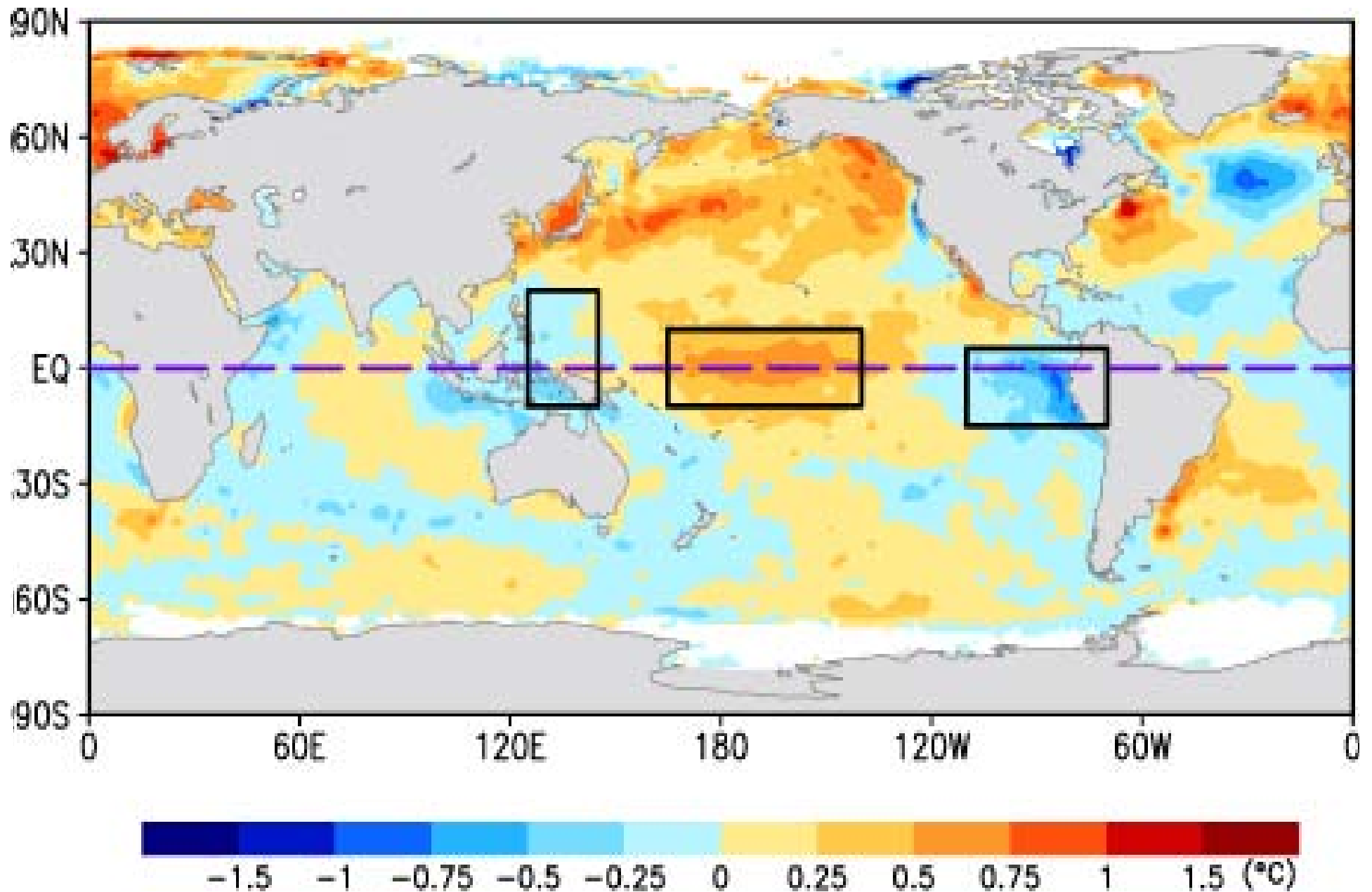
Weak Modoki El Niño Likely Continues



Traditional El Niño

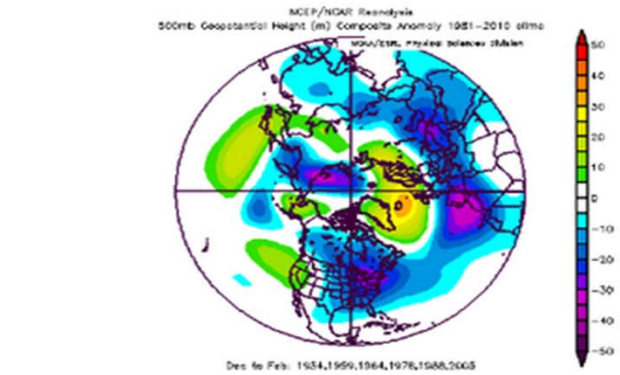
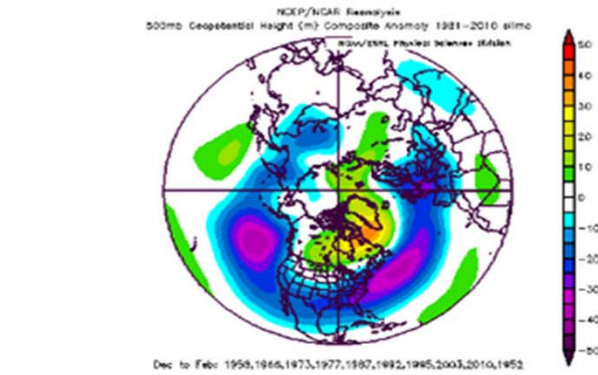
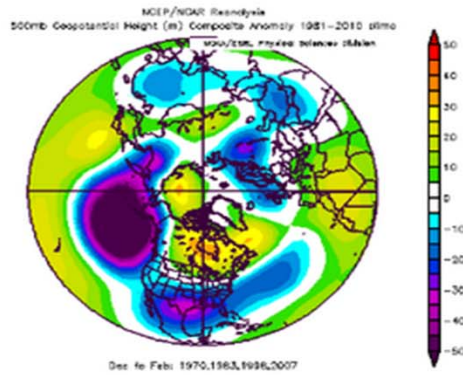
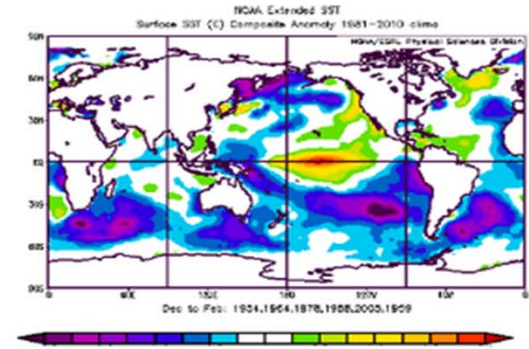
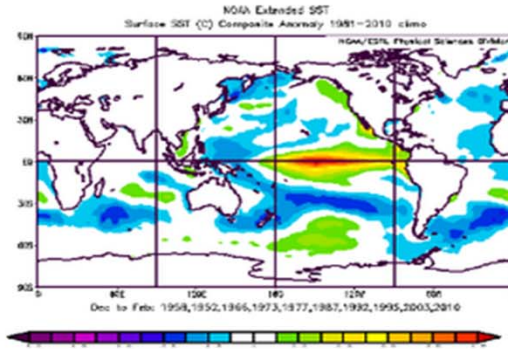
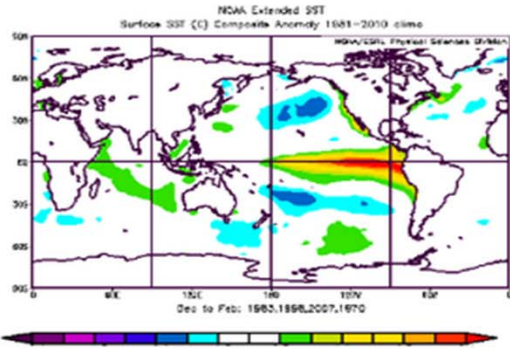


Modoki El Niño

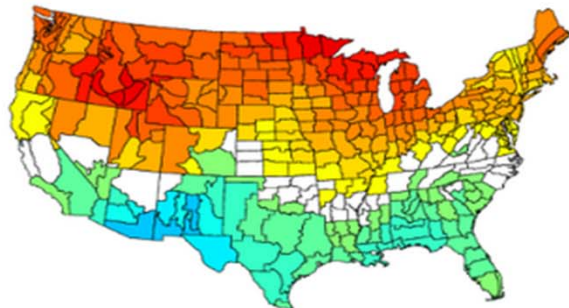


El Niño Types and Impacts

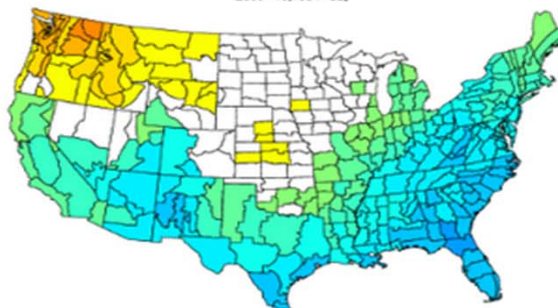
Traditional (East-Based) Hybrid (East-Central Based) Modoki (Central Based)



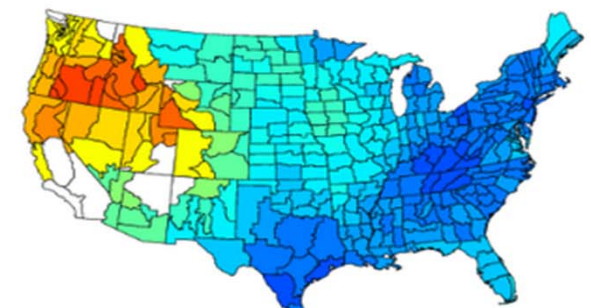
NOAA/NCDC Climate Division Composite Standardized Temperature Anomalies
Dec to Feb 1969-70, 1982-83, 1997-98, 2006-07
Versus 1981-2010 Longterm Average



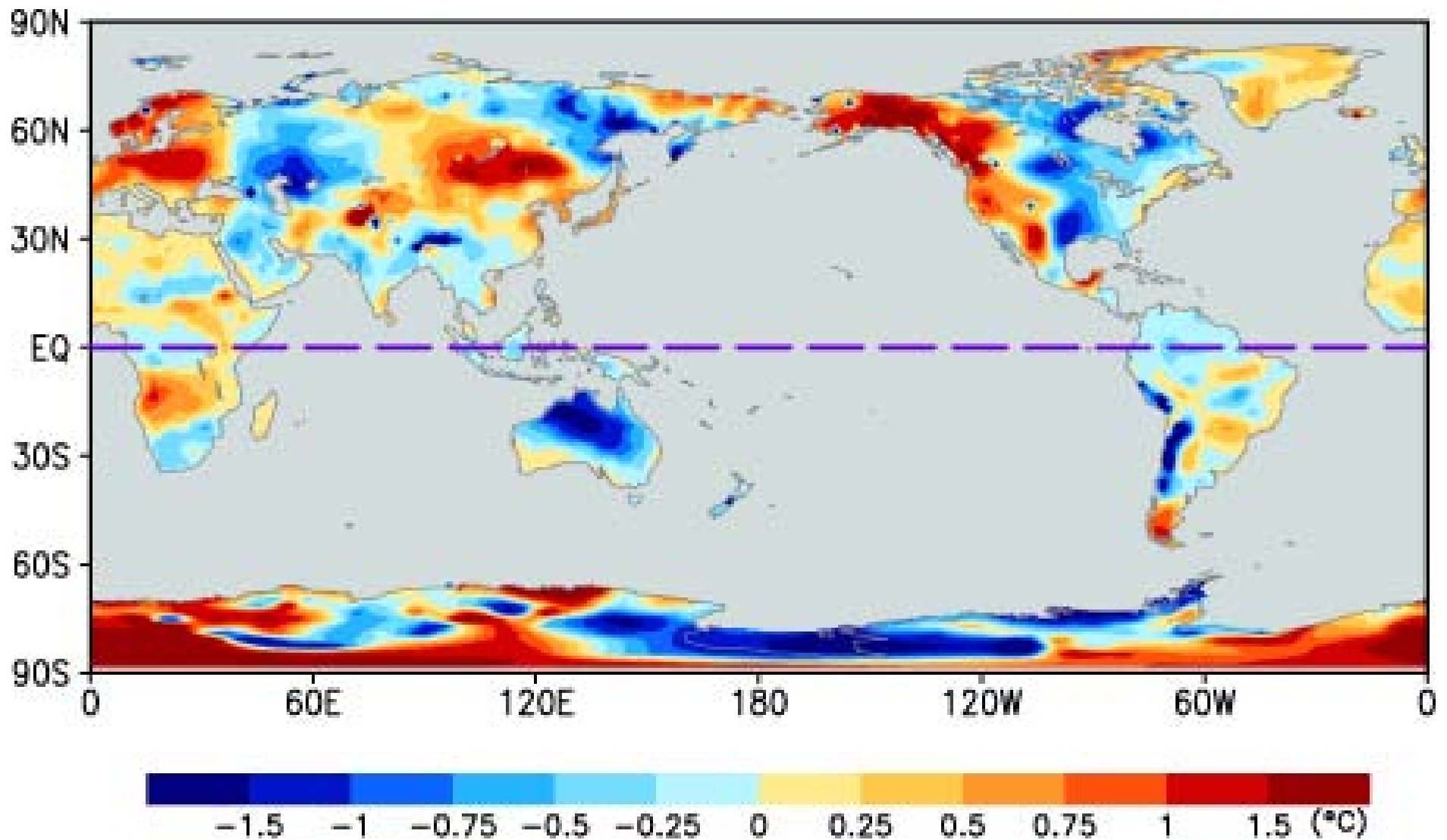
NOAA/NCDC Climate Division Composite Standardized Temperature Anomalies
Versus 1981-2010 Longterm Average
Dec to Feb 1957-58, 1965-66, 1972-73, 1976-77, 1986-87, 1991-92, 1994-95, 2002-03
2009-10, 1951-52,



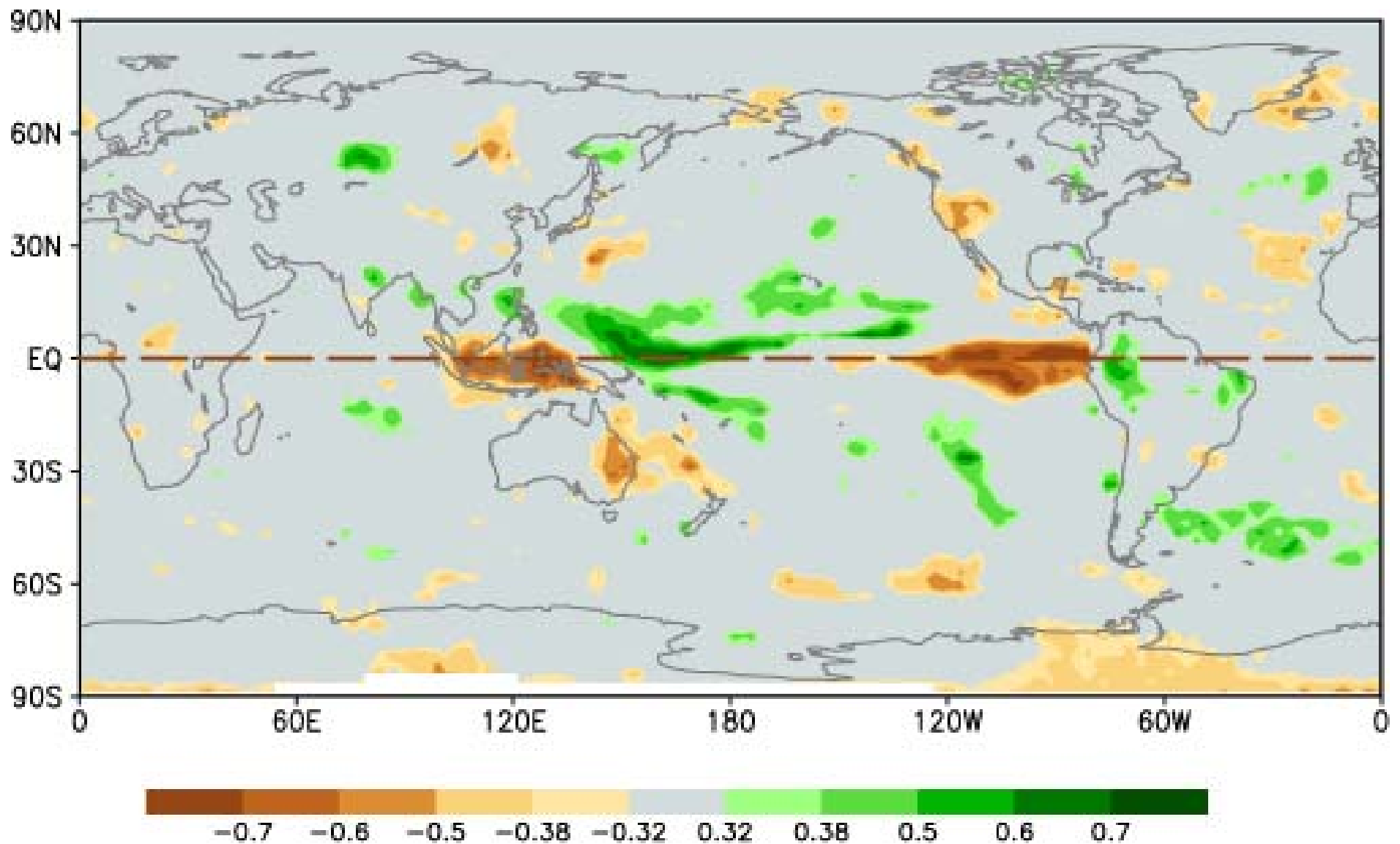
NOAA/NCDC Climate Division Composite Standardized Temperature Anomalies
Dec to Feb 1953-54, 1958-59, 1963-64, 1977-78, 1987-88, 2004-05
Versus 1981-2010 Longterm Average



Typical Modoki El Niño Global Temperature

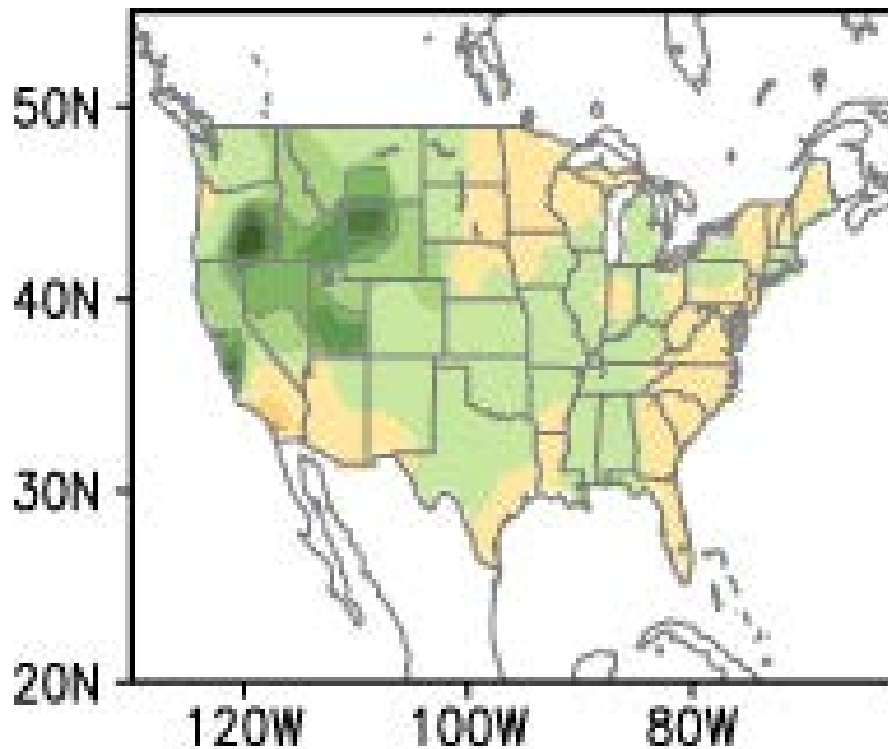


Typical Modoki El Niño Global Precipitation

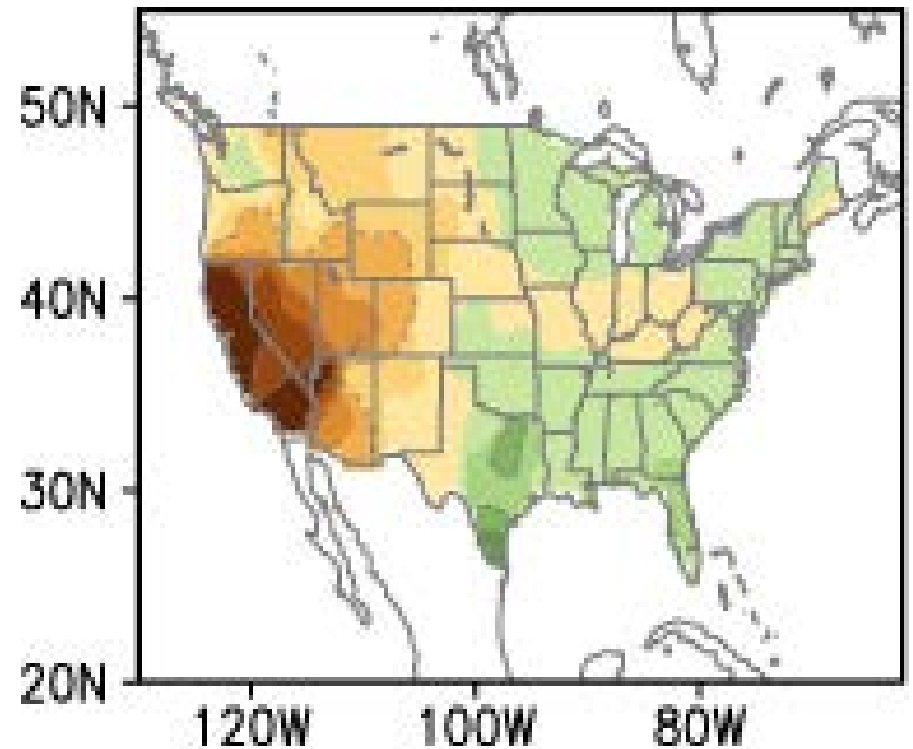


Precipitation Differences With Different El Niños

- Traditional El Niño



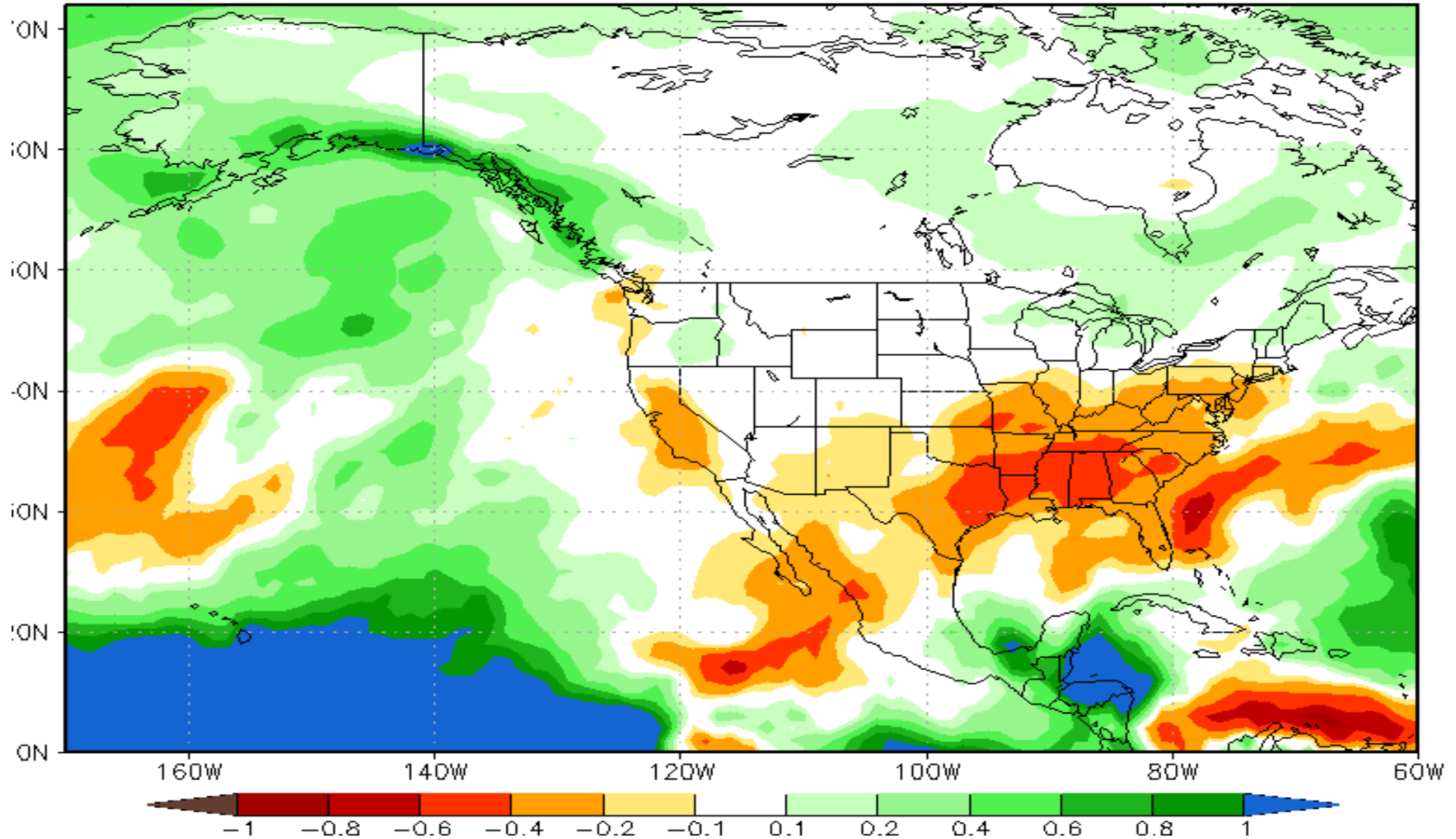
- Modoki El Niño



NMME Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

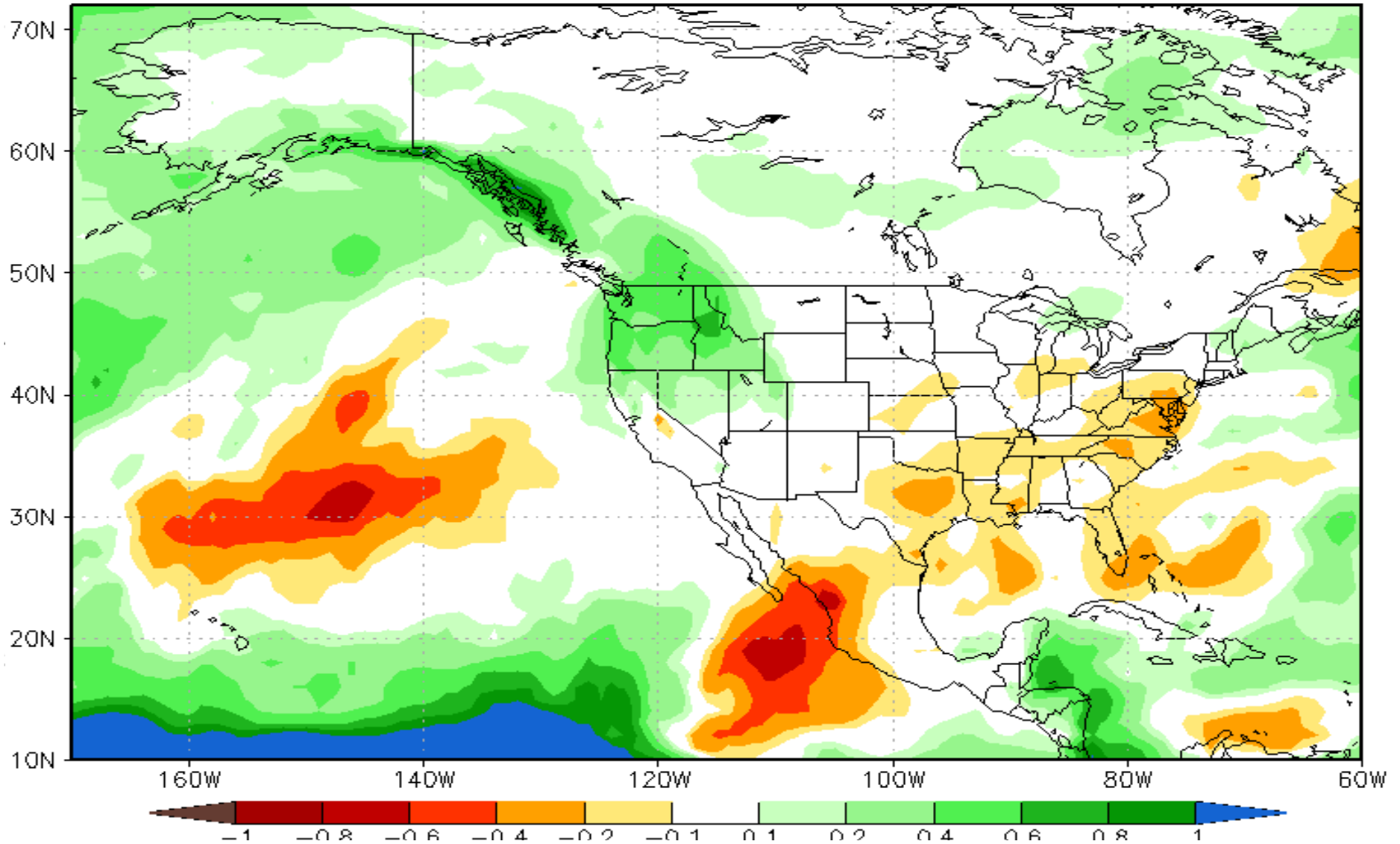
NMME Forecast of Prec. rate Anom IC=201910 for Lead 1 2019Nov



NMME Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

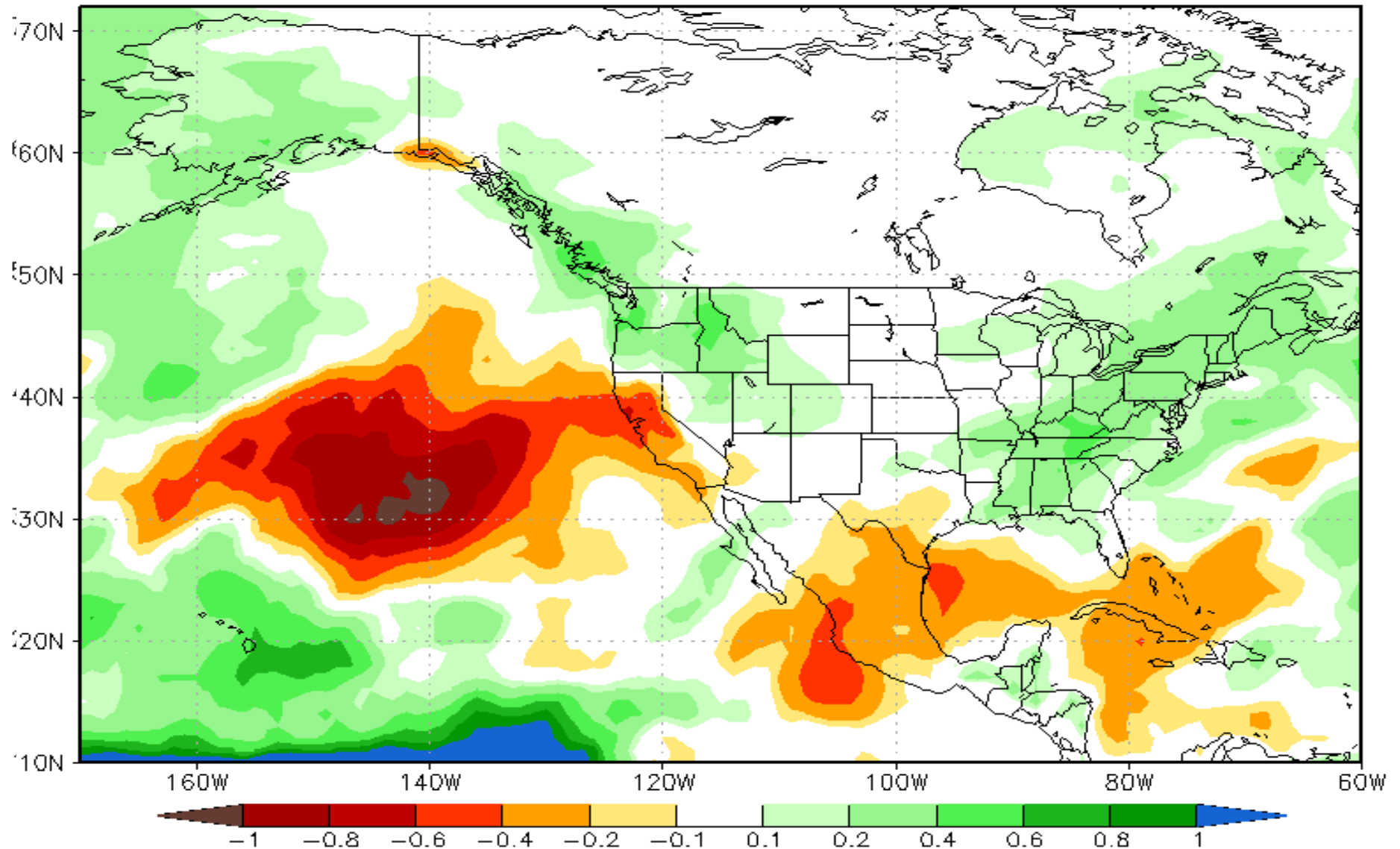
NMME Forecast of Prec. rate Anom IC=201910 for Lead 2 2019Dec



NMME Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

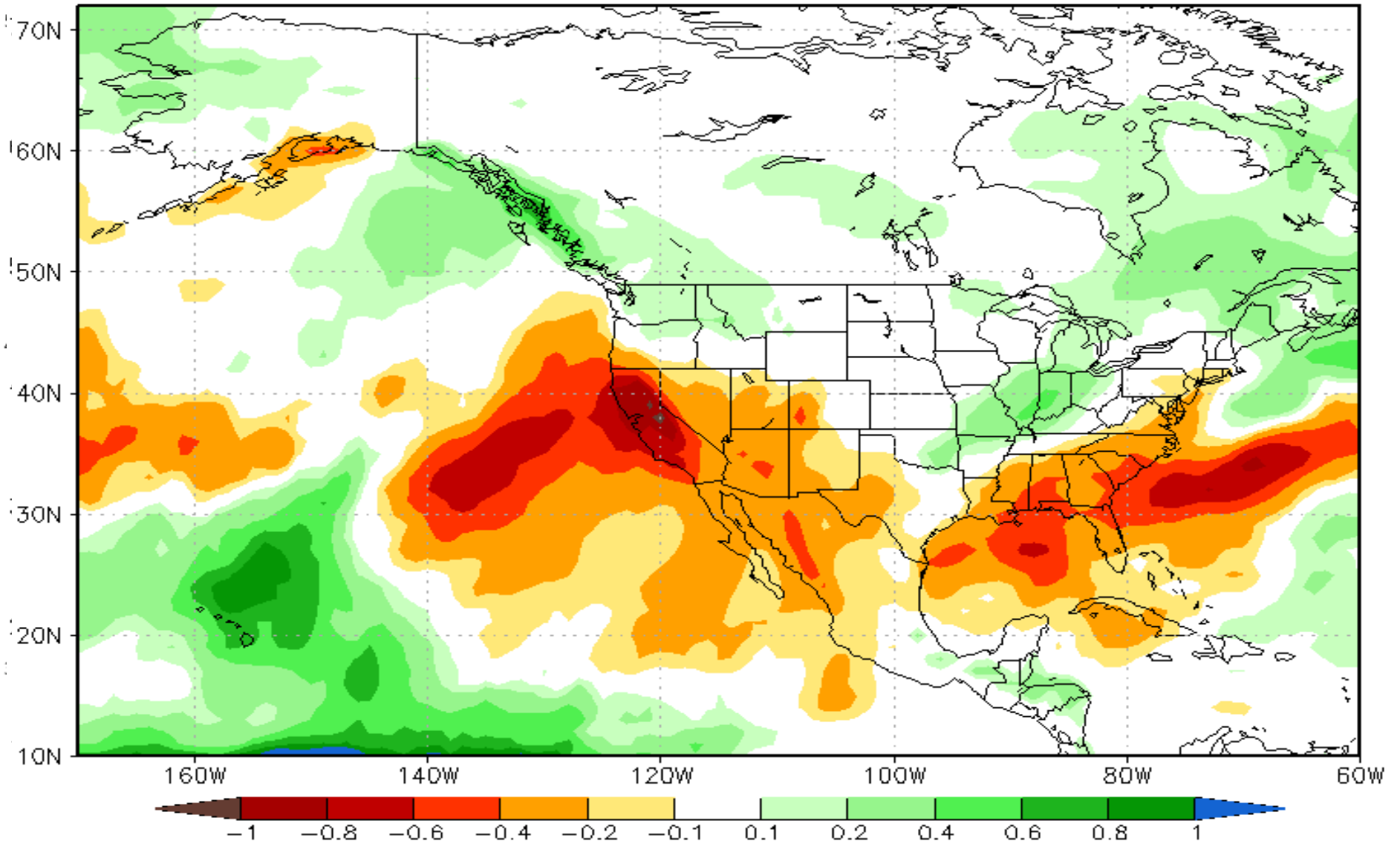
NMME Forecast of Prec. rate Anom IC=201910 for Lead 3 2020Jan



NMME Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

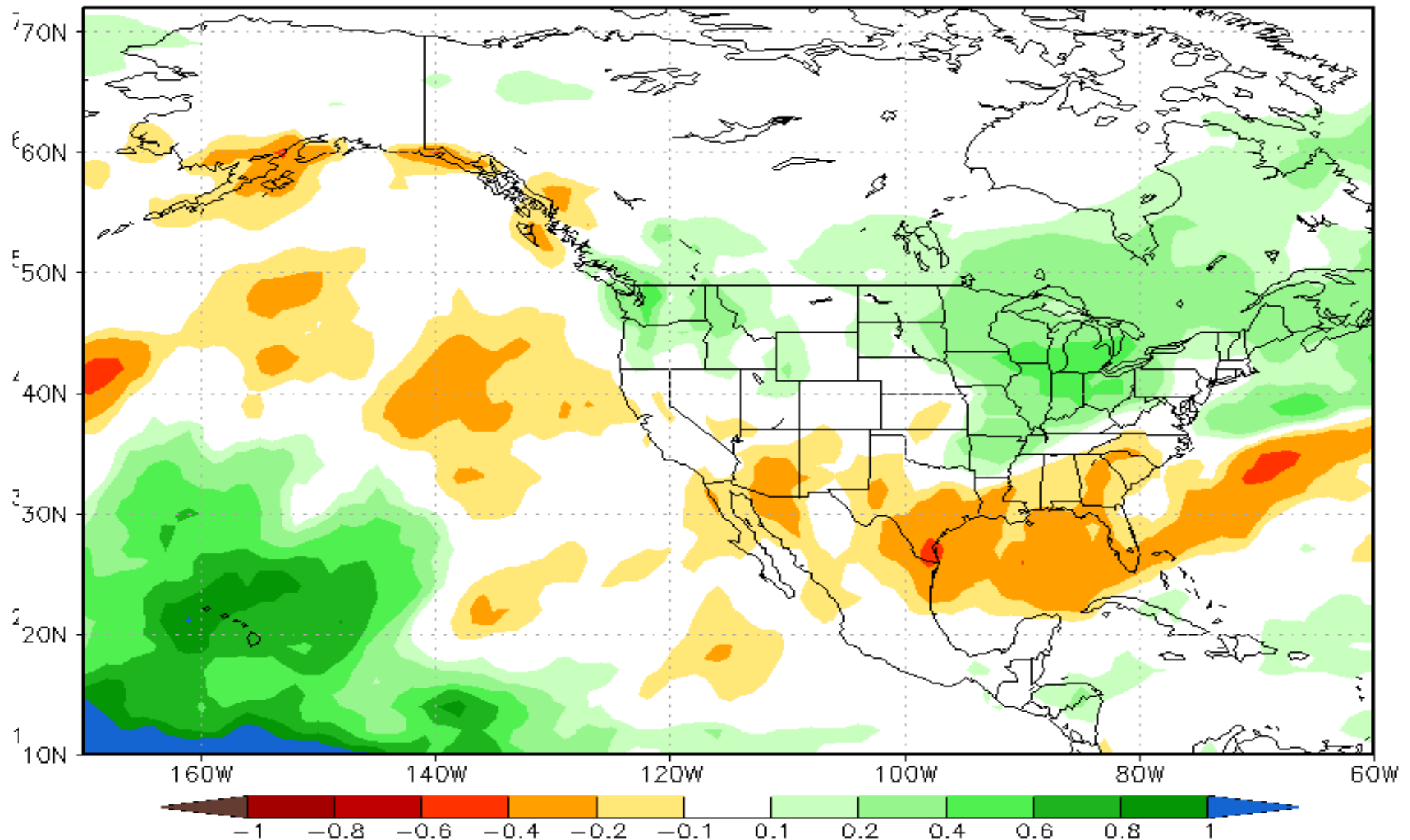
NMME Forecast of Prec. rate Anom IC=201910 for Lead 4 2020Feb



NMME Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

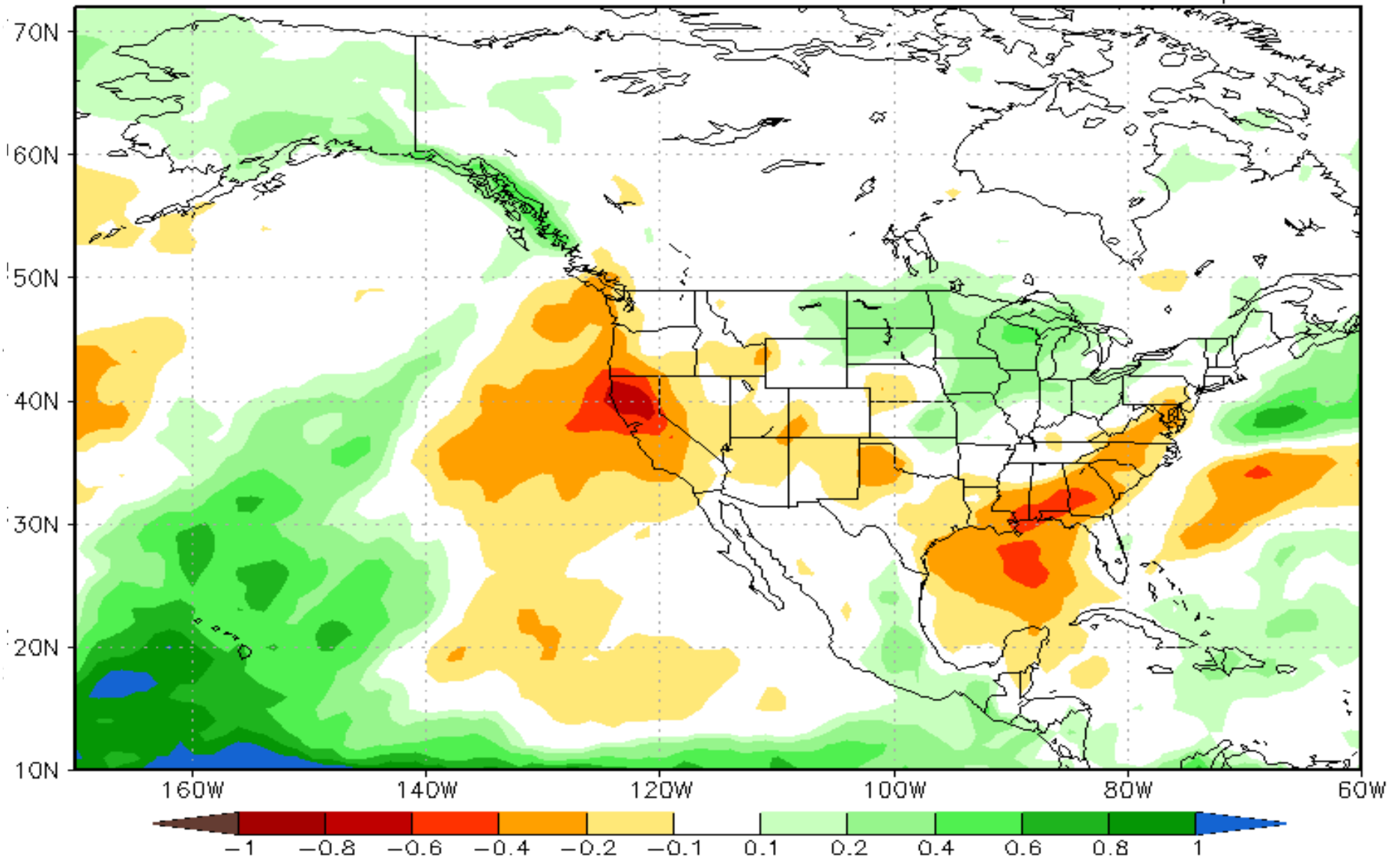
NMME Forecast of Prec. rate Anom IC=201910 for Lead 5 2020Mar



NMME Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

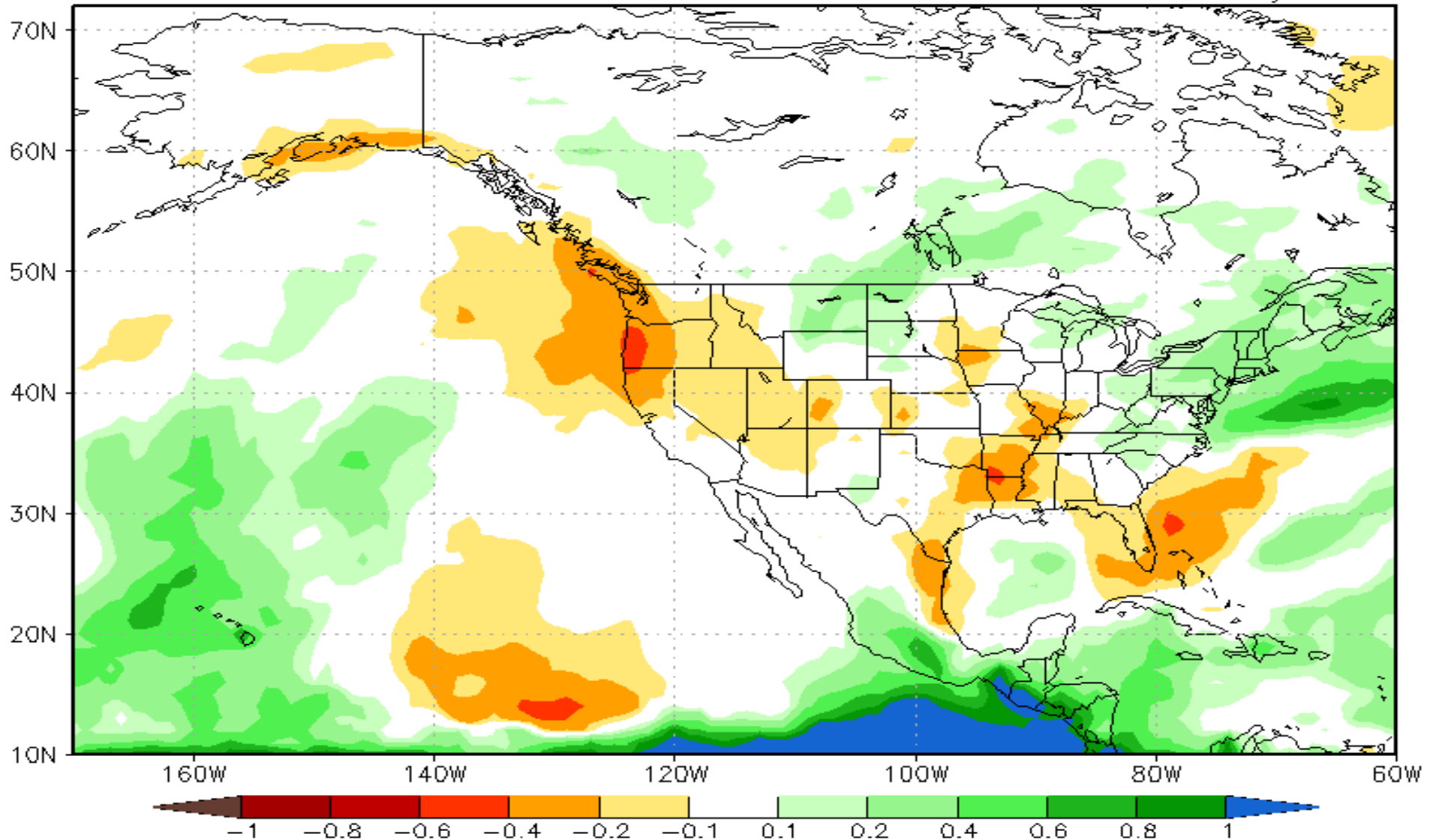
NMME Forecast of Prec. rate Anom IC=201910 for Lead 6 2020Apr



NMME Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

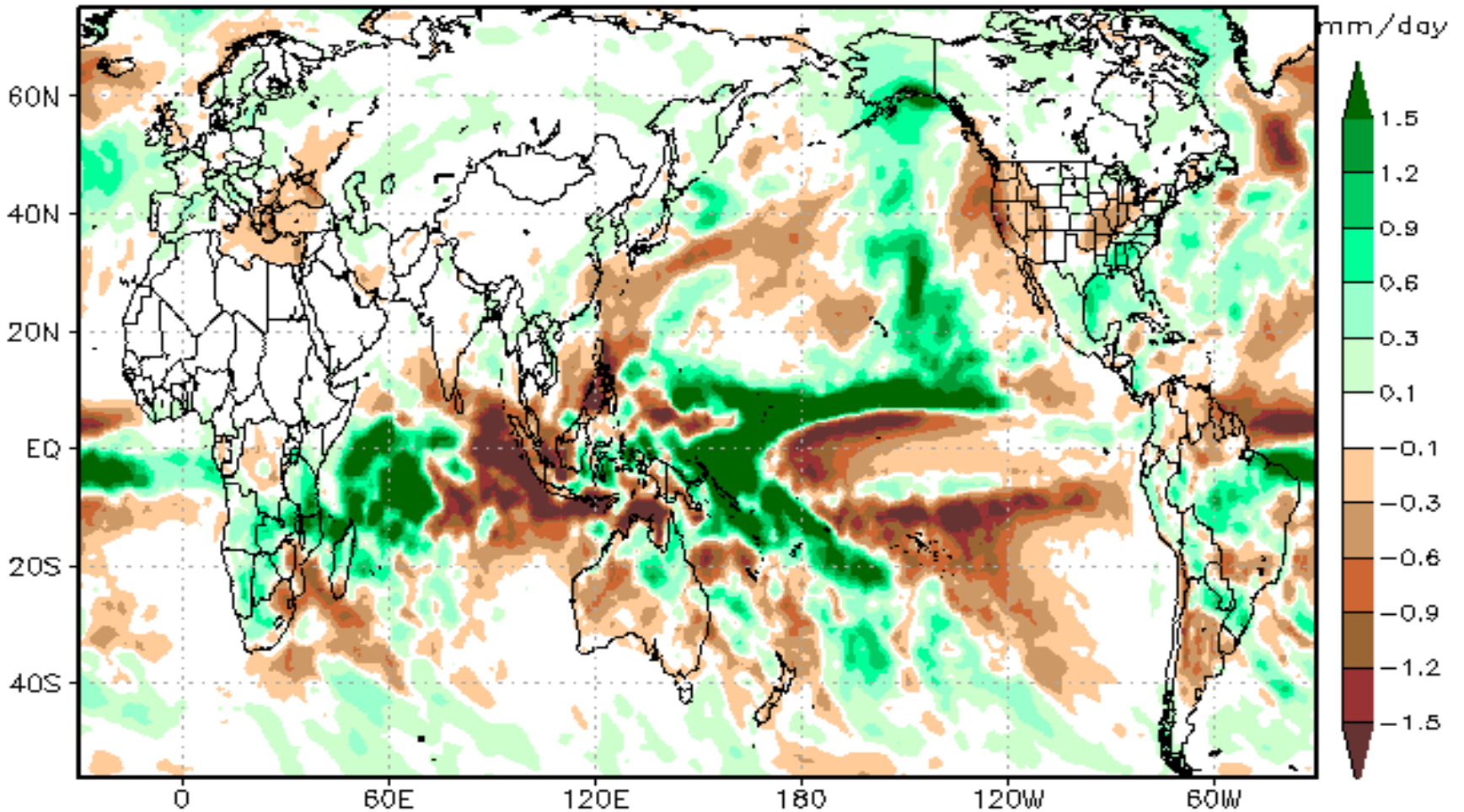
NMME Forecast of Prec. rate Anom IC=201910 for Lead 7 2020May



JAMSTEC Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

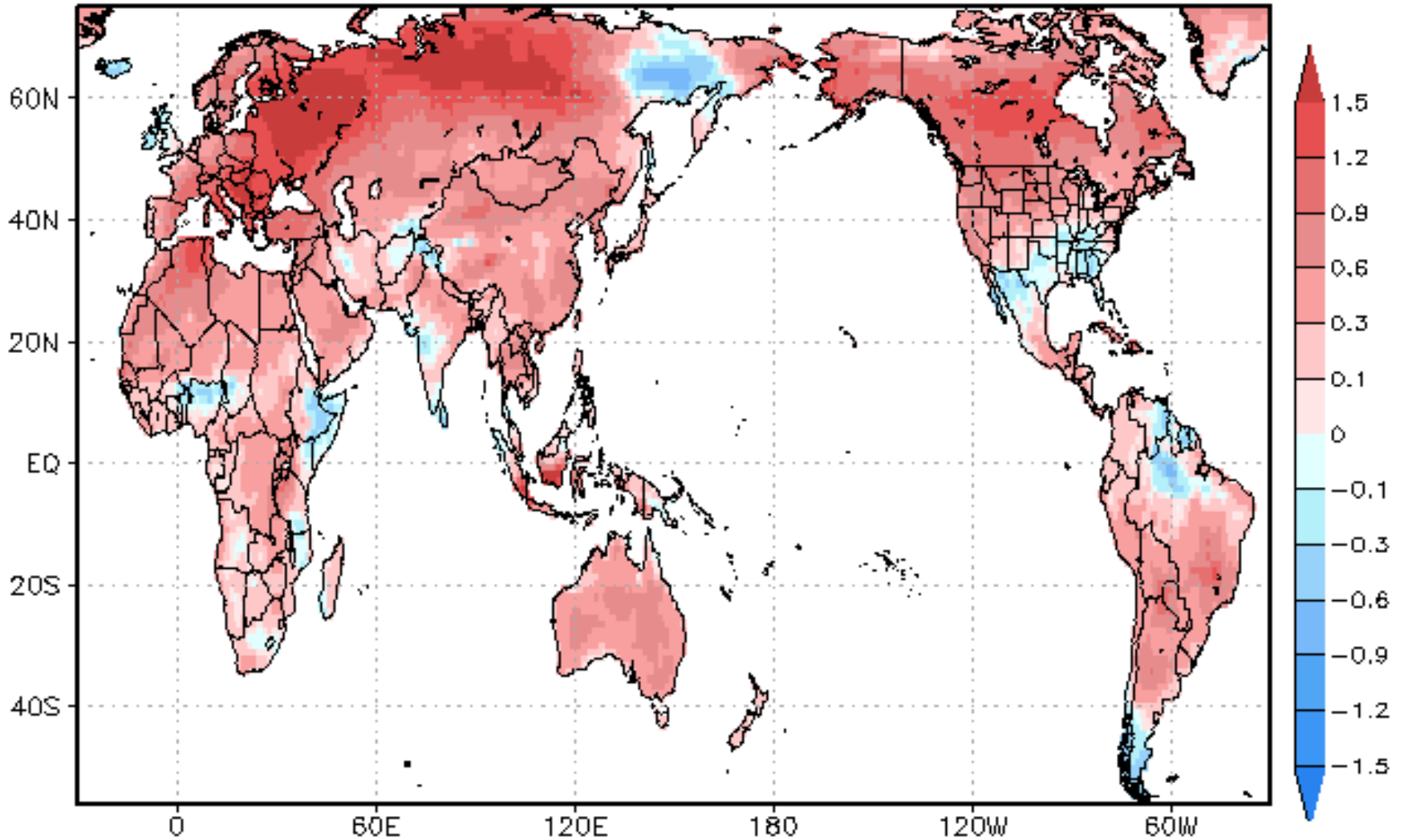
Predicted DJF2019/2020 tprepa from 1oct2019 (9-member)



JAMSTEC Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

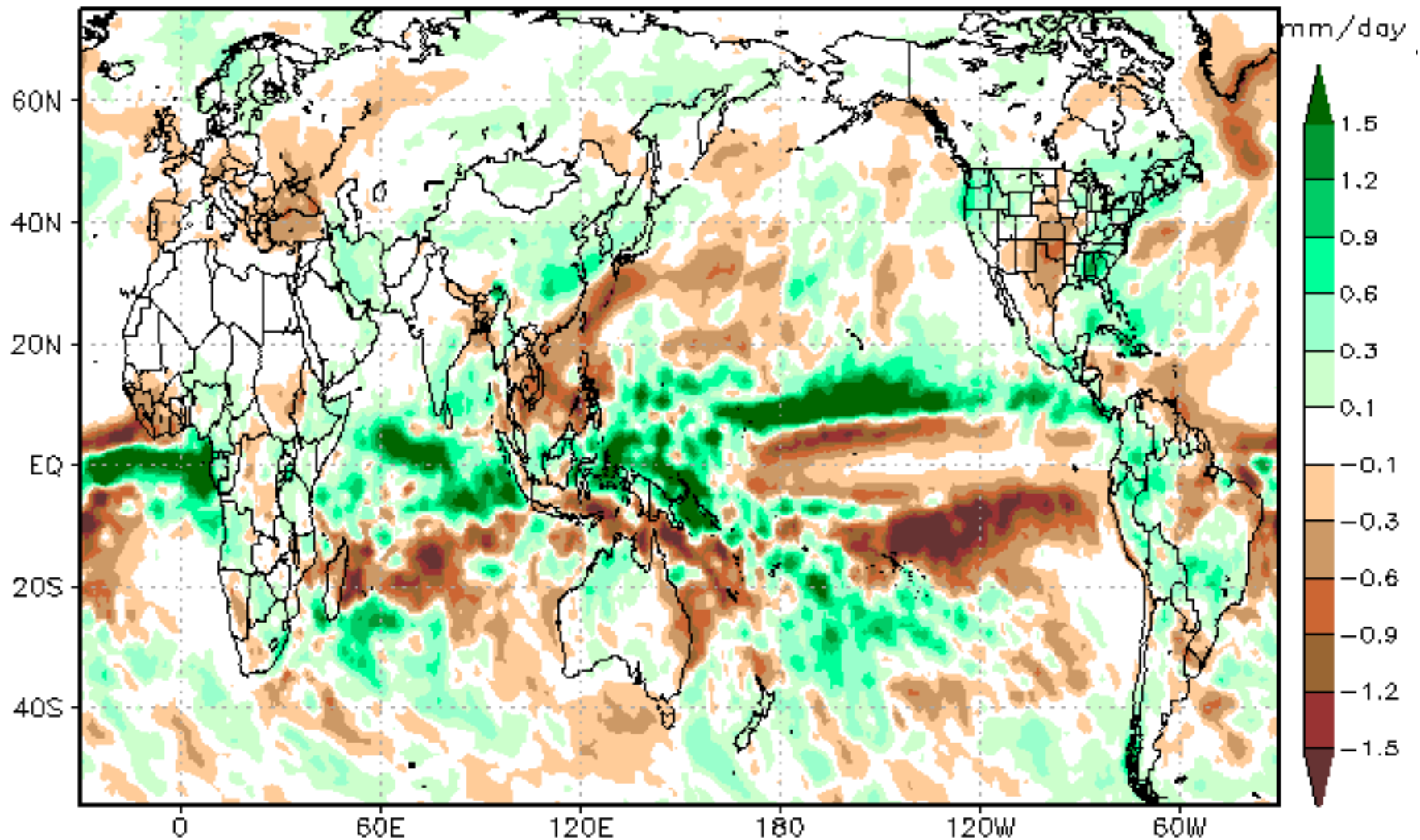
Predicted SON2018 temp2 anom. from 1jul2018 (9-member)



JAMSTEC Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

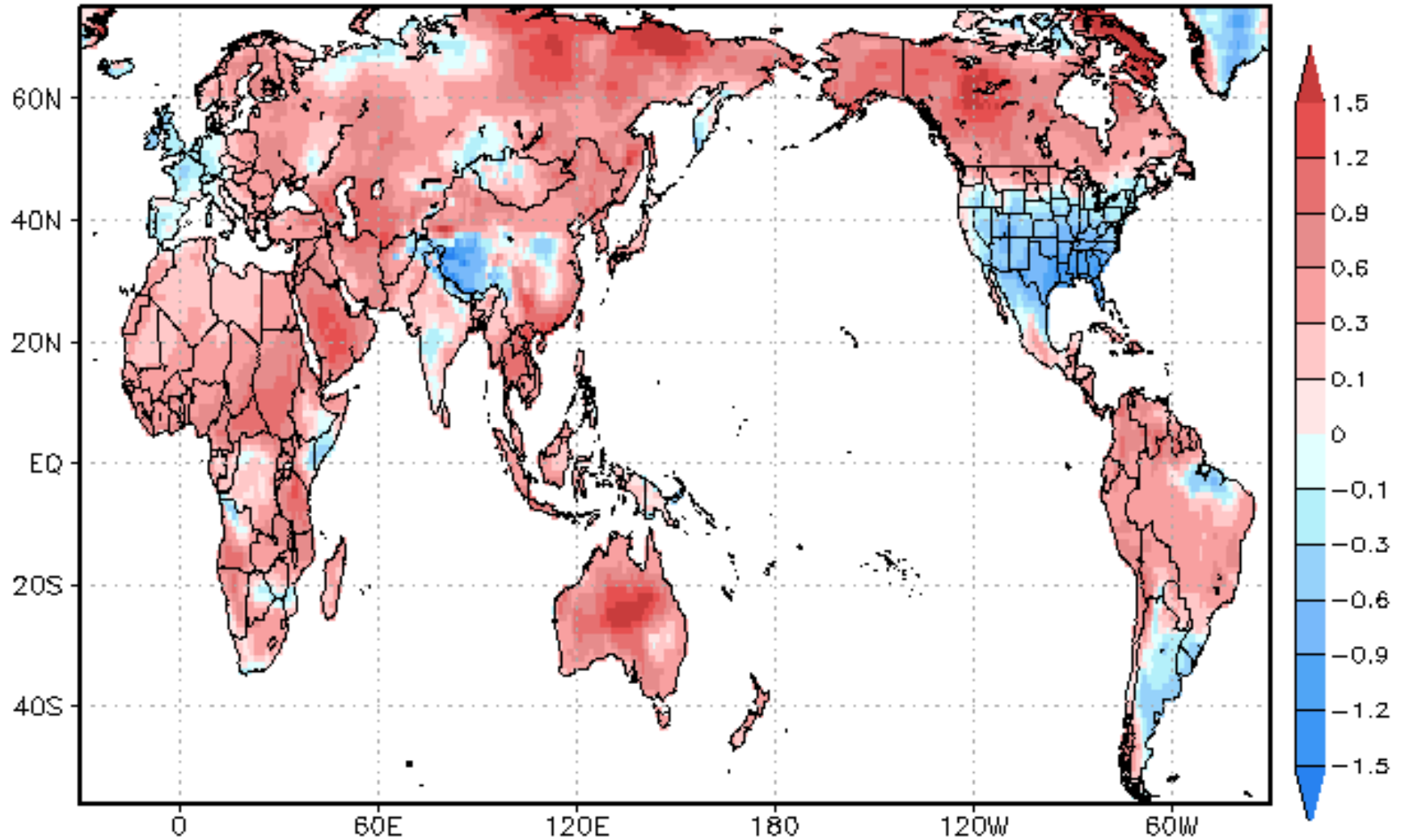
Predicted MAM2020 tprep anom. from 1oct2019 (9-member)



JAMSTEC Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

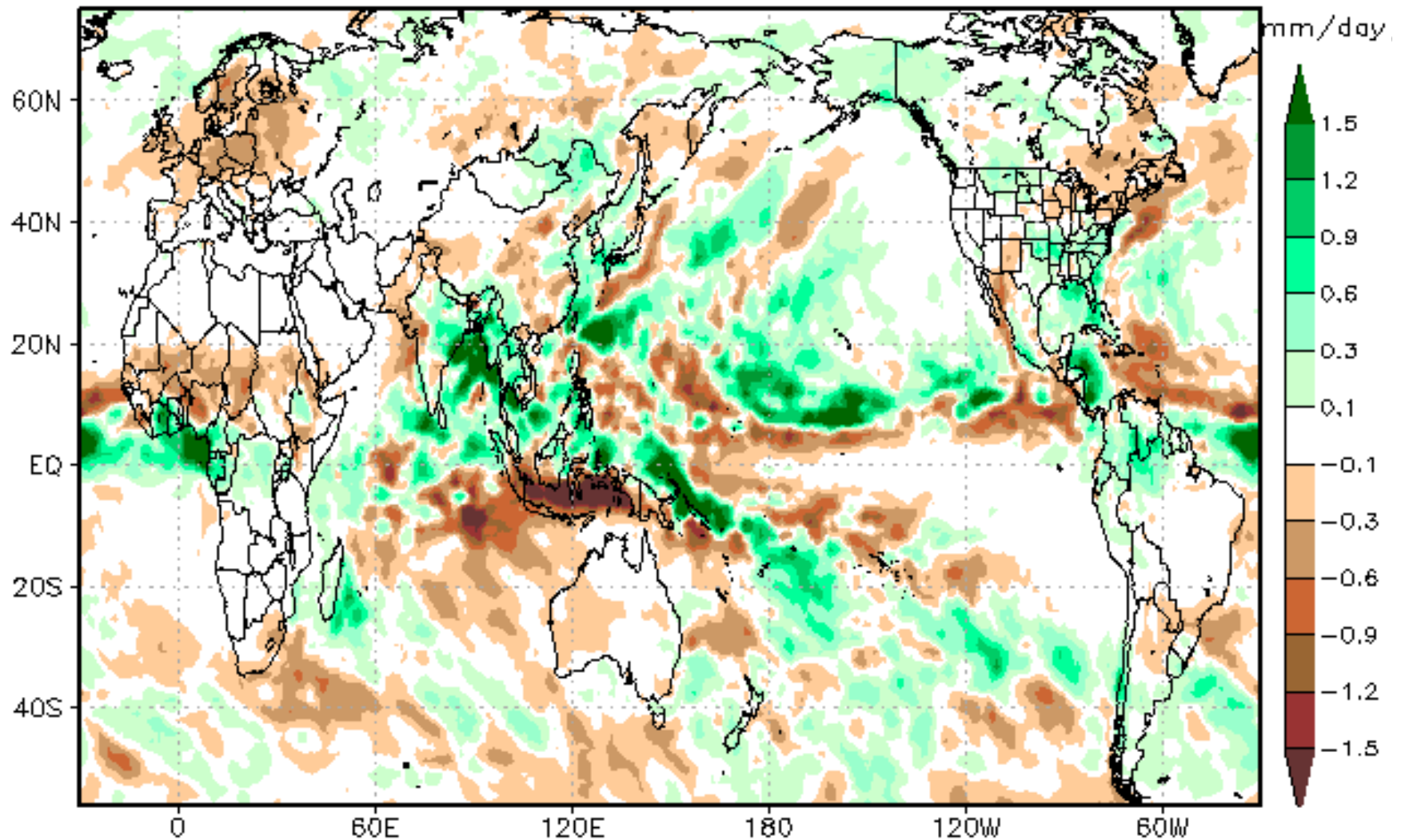
Predicted DJF2018/2019 temp2 from 1jul2018 (9-member)



JAMSTEC Model Precipitation Forecast

Green = Wetter Brown = Drier White = "Average"

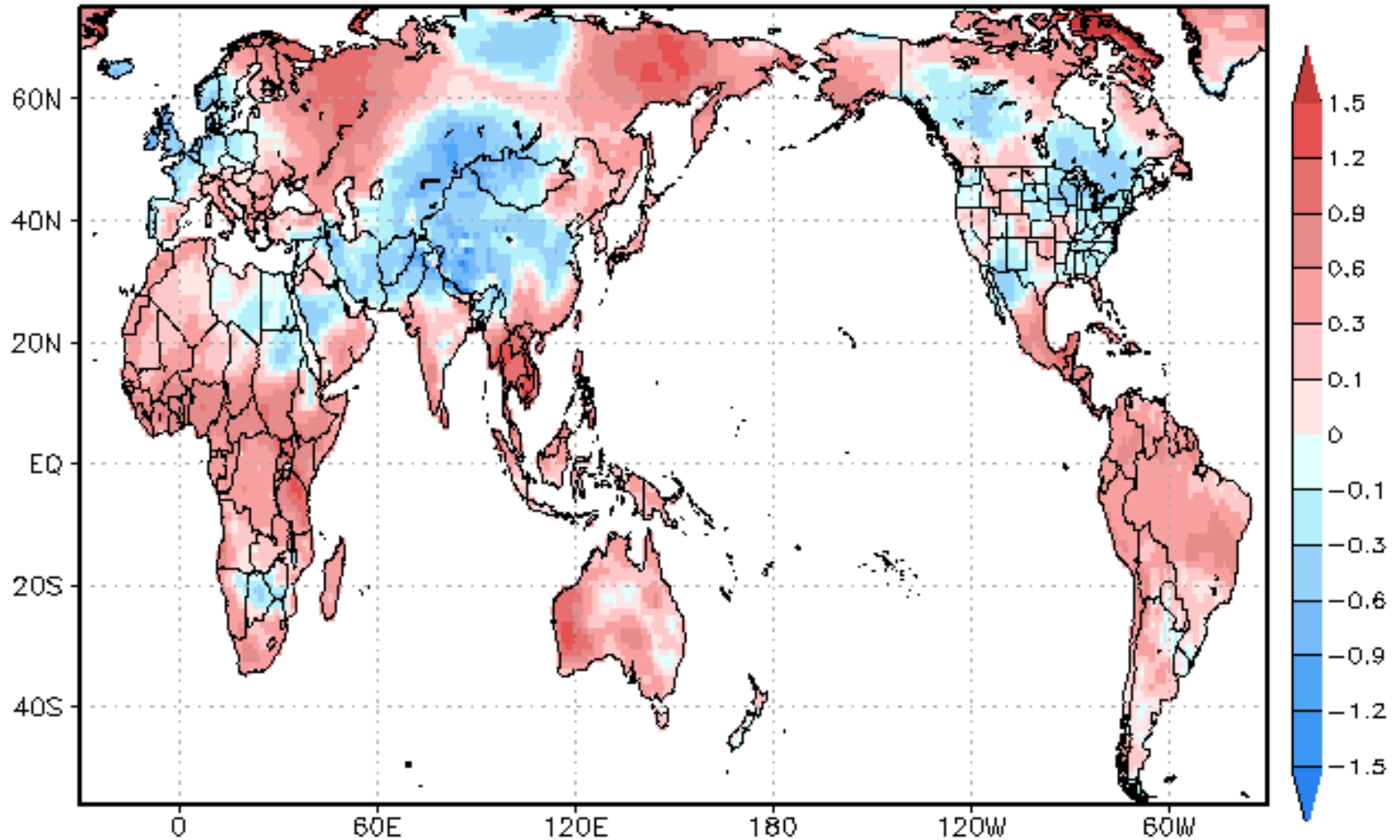
Predicted JJA2020 tprep anom. from 1oct2019 (9-member)



JAMSTEC Model Precipitation Forecast

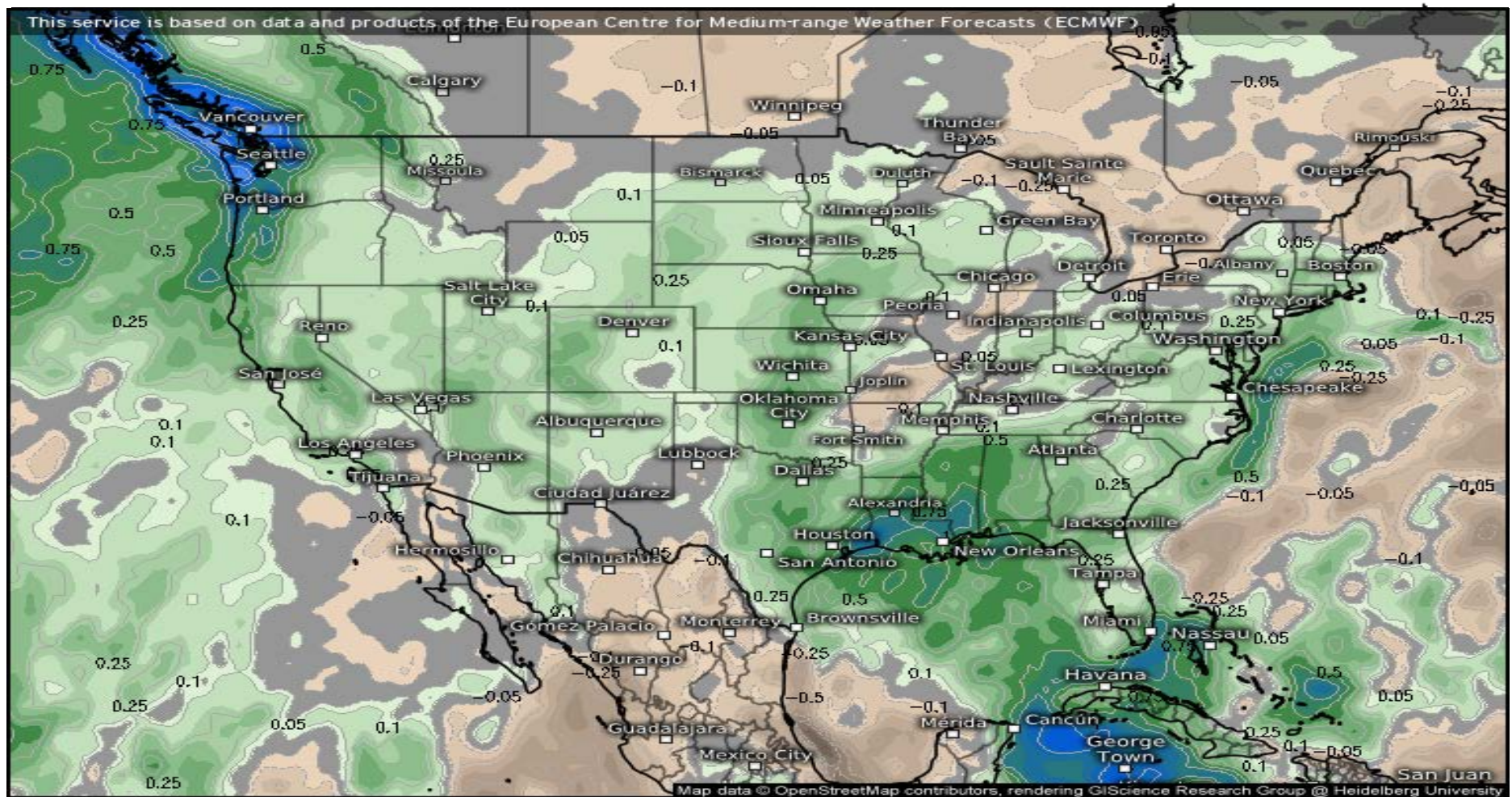
Green = Wetter Brown = Drier White = "Average"

Predicted MAM2019 temp2 anom. from 1jul2018 (9-member)



EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for November 2019

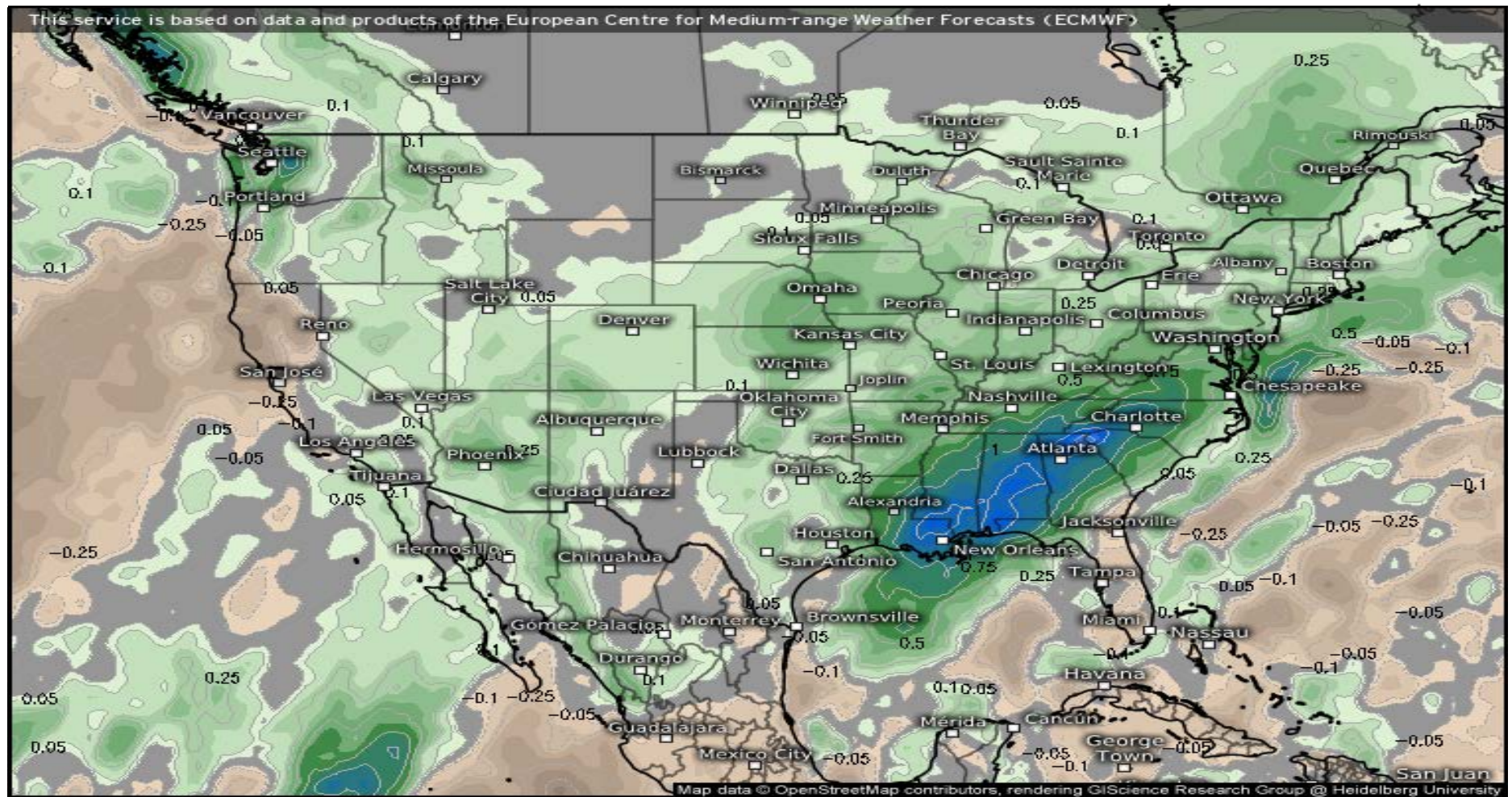


USA
ECMWF SEAS5 (monthly) from 10/01/2019/00z

Model:

EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for
December 2019

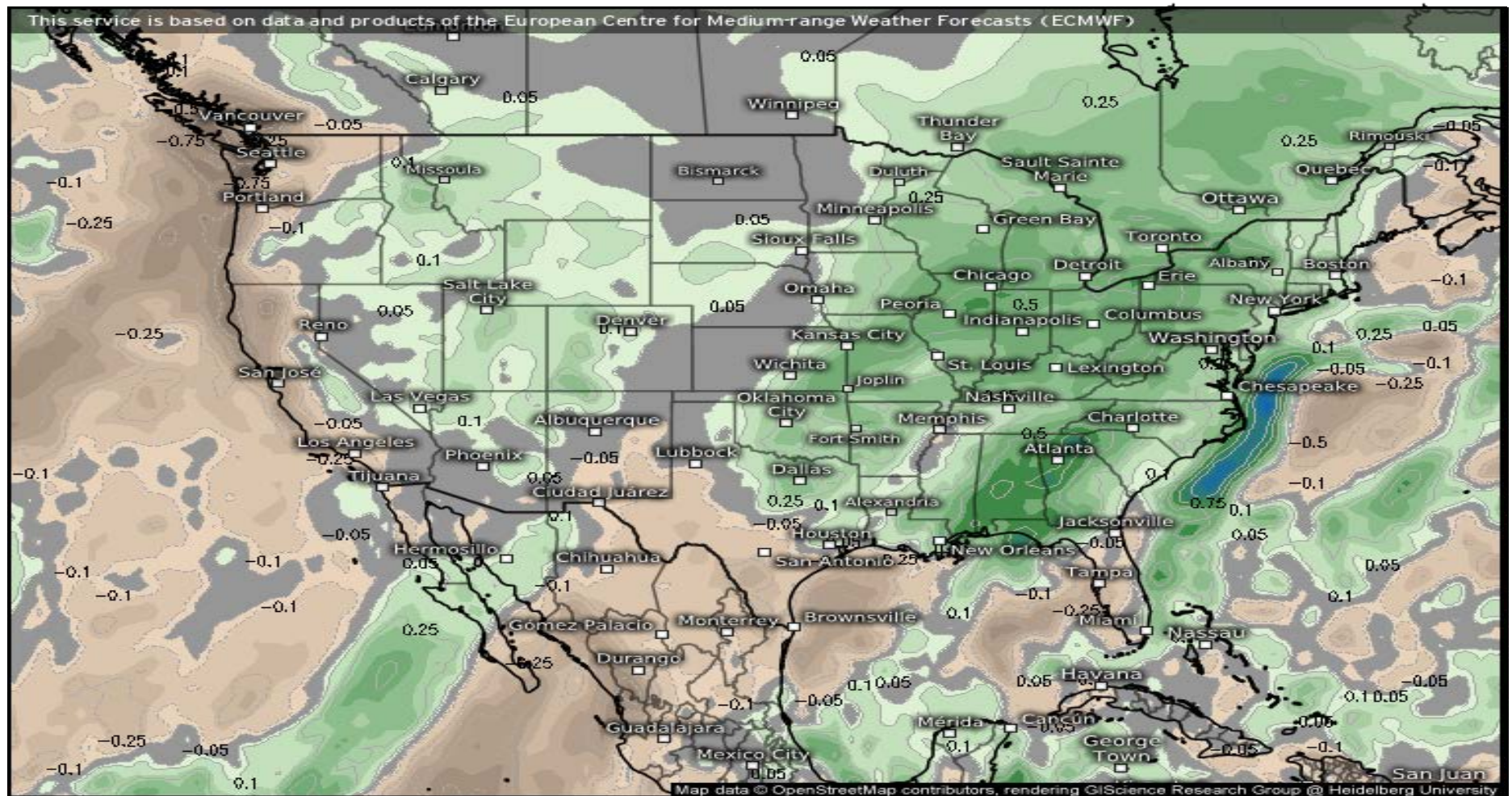


USA
ECMWF SEAS5 (monthly) from 10/01/2019/00z

Model:

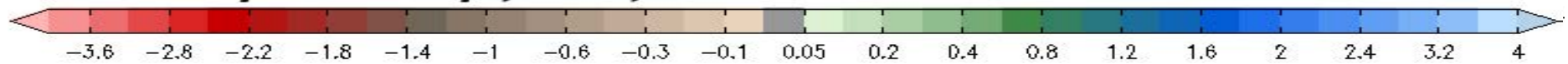
EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for January 2020

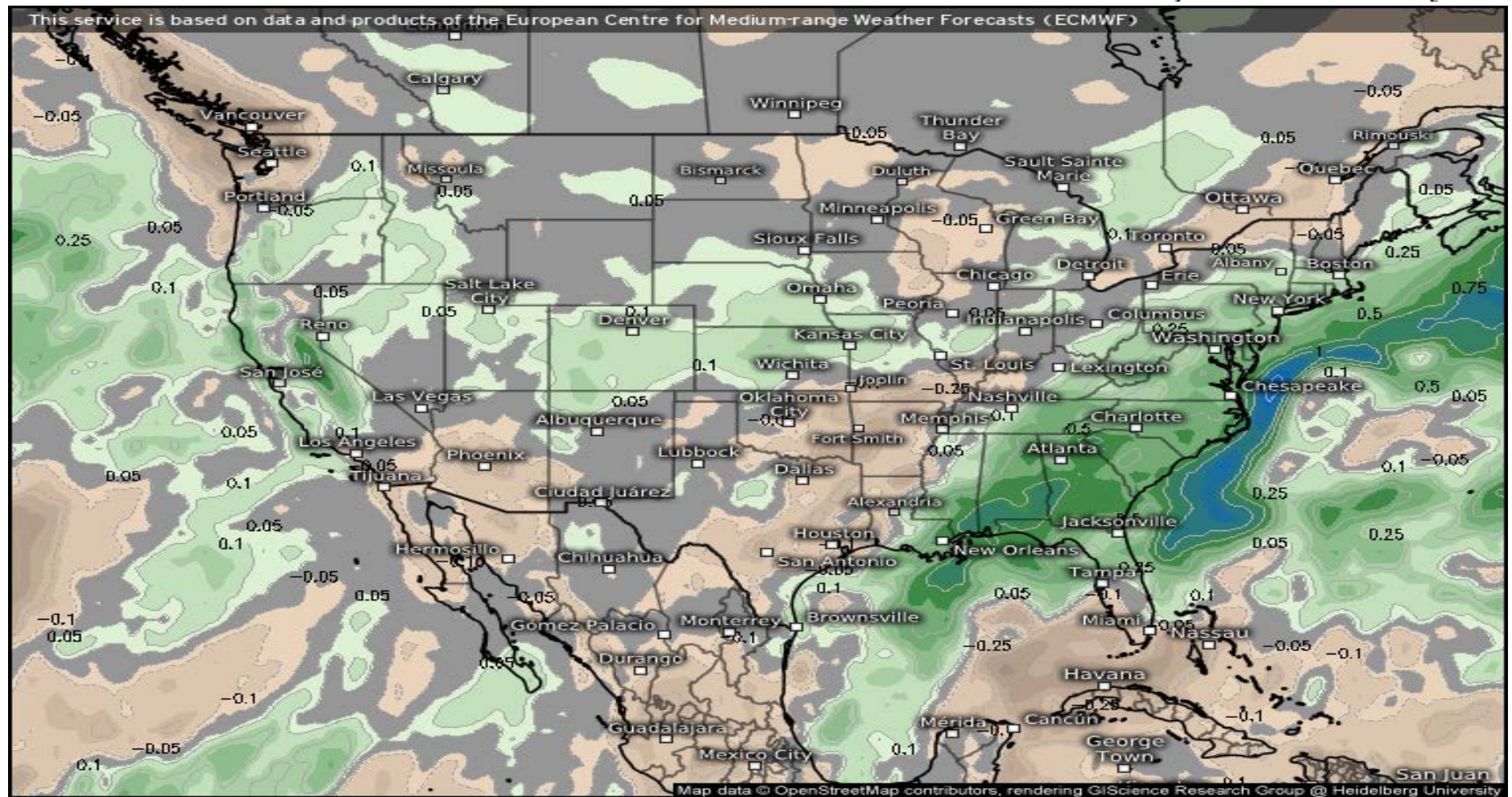


USA
ECMWF SEAS5 (monthly) from 10/01/2019/00z

Model:

EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for February 2020

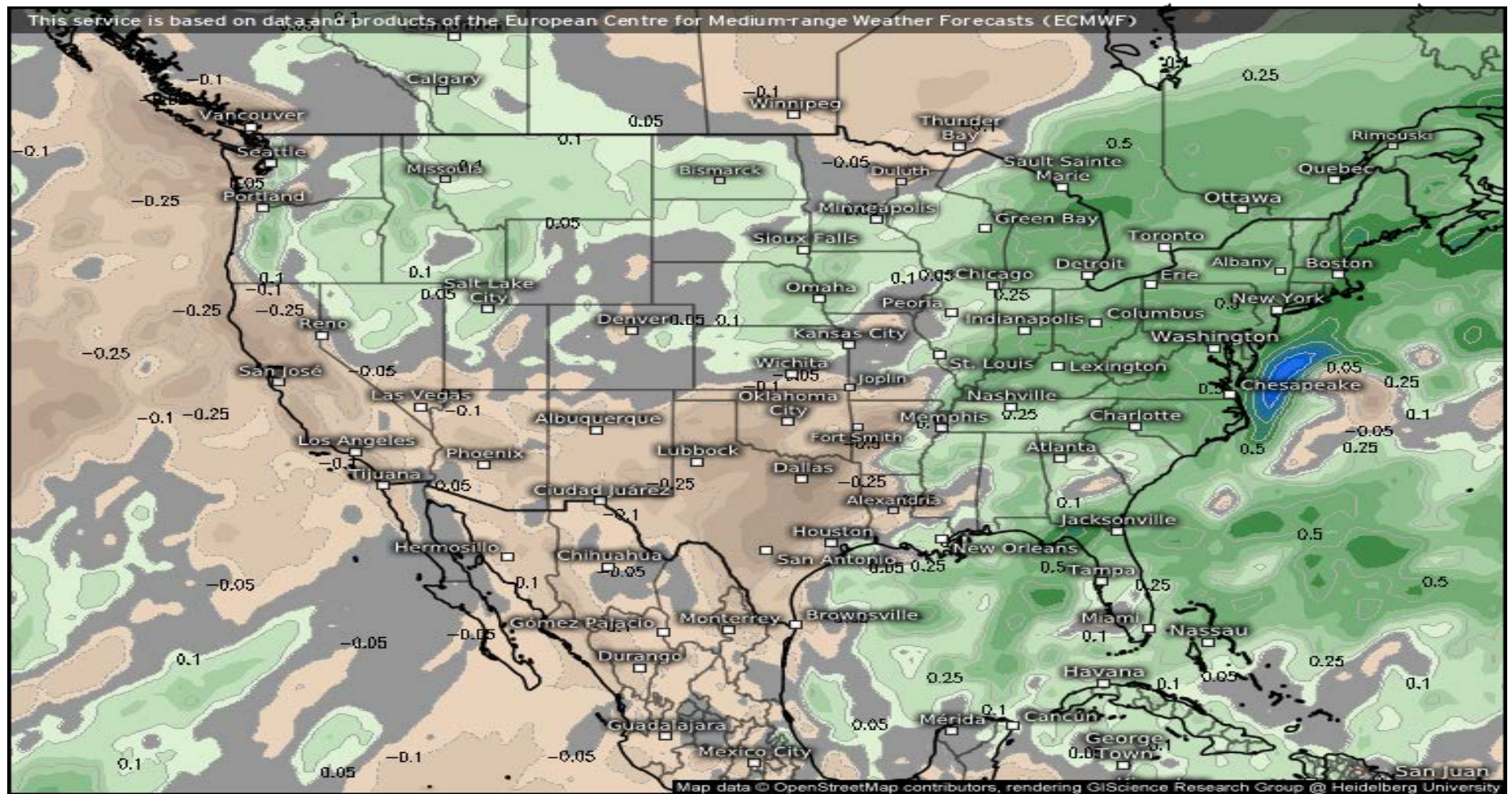


USA
ECMWF SEAS5 (monthly) from 10/01/2019/00z

Model:

EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for
March 2020



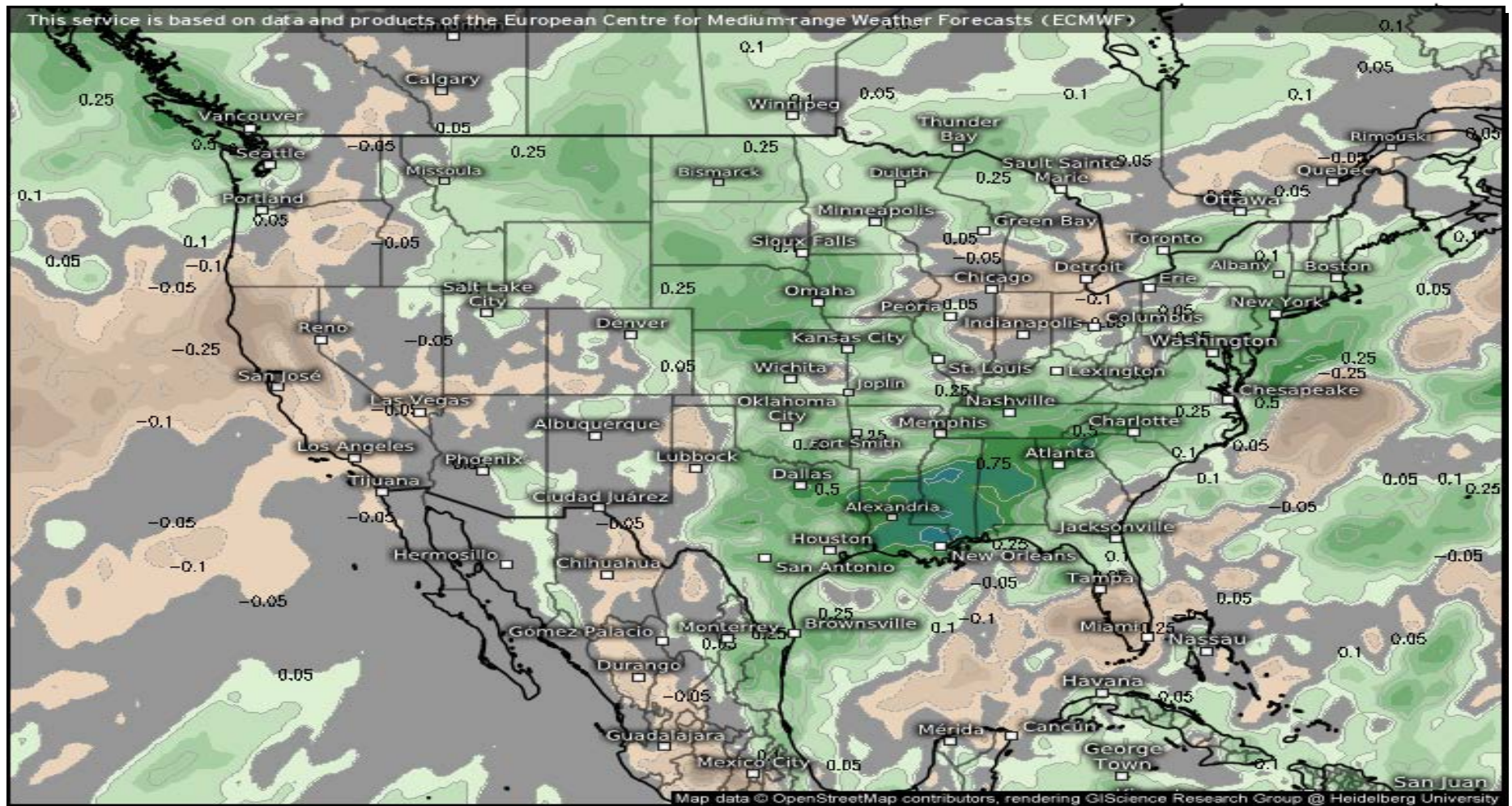
USA

ECMWF SEAS5 (monthly) from 10/01/2019/00z

Model:

EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for April 2020

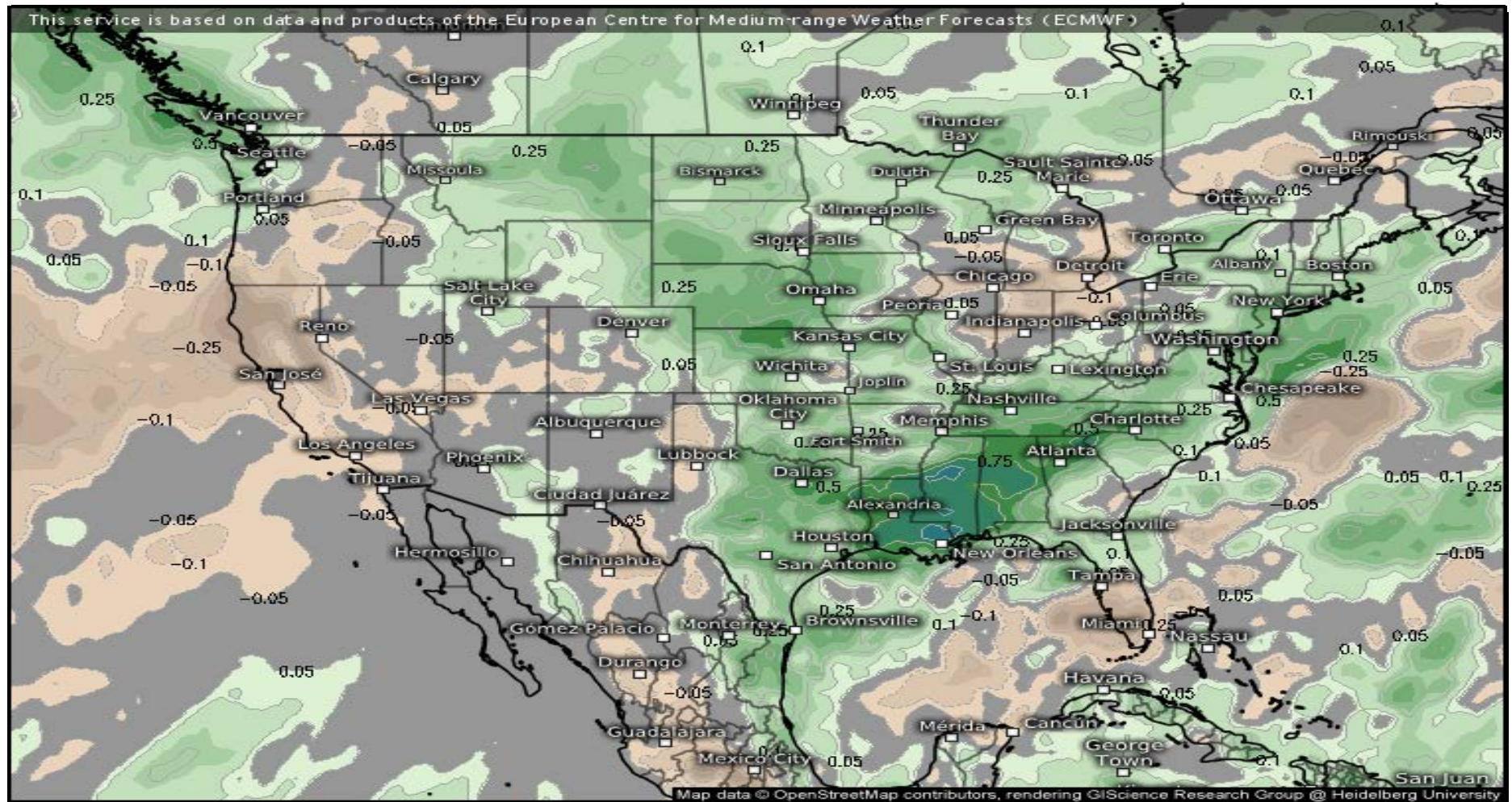


USA
ECMWF SEAS5 (monthly) from 10/01/2019/00z

Model:

EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for April 2020

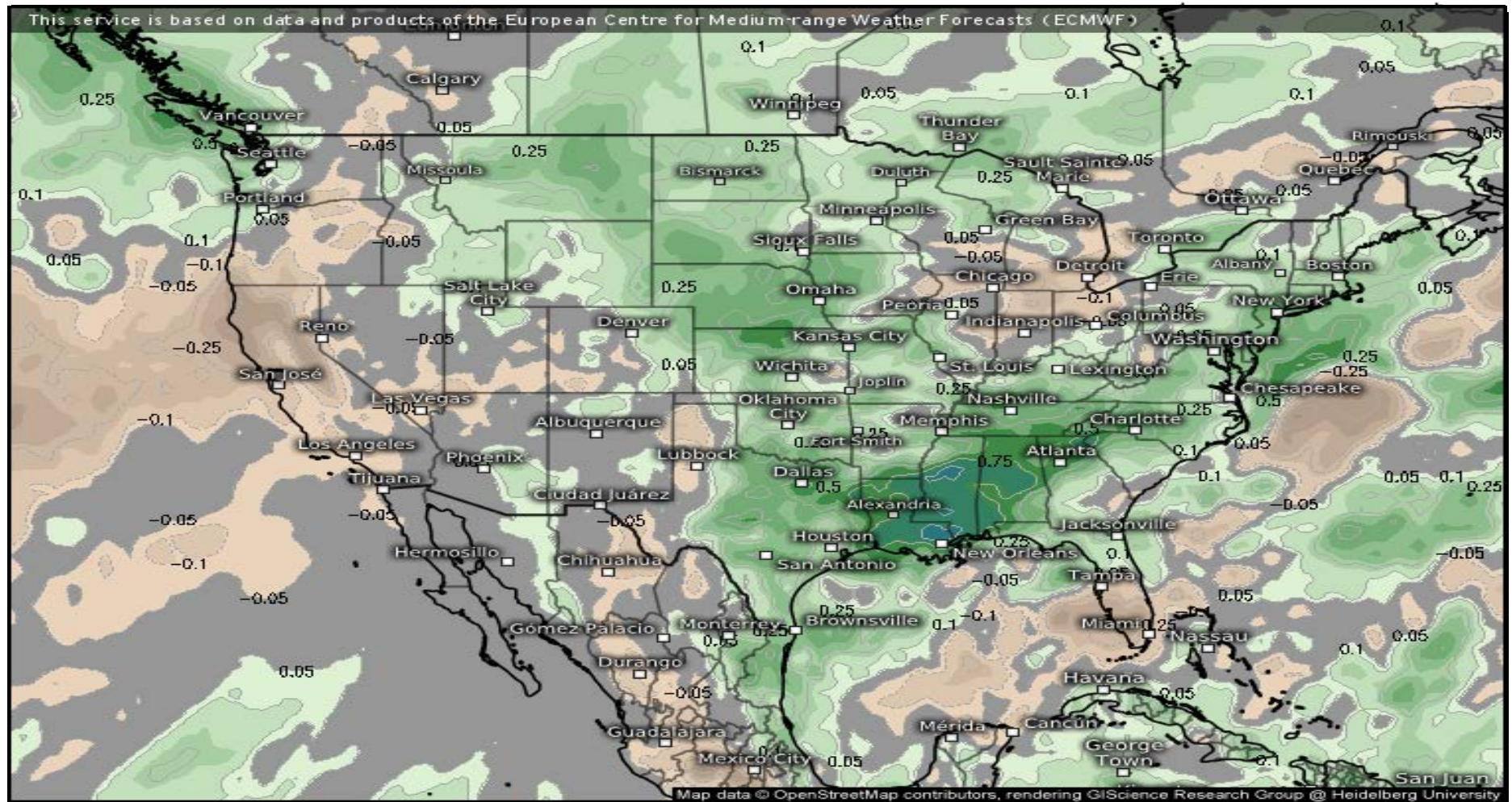


USA
ECMWF SEAS5 (monthly) from 10/01/2019/00z

Model:

EURO Seasonal Model Precipitation Forecast

Green/Blue = Wetter Yellow/Brown = Drier White = "Average"



Anomaly monthly precipitation (in)

Valid for
April 2020

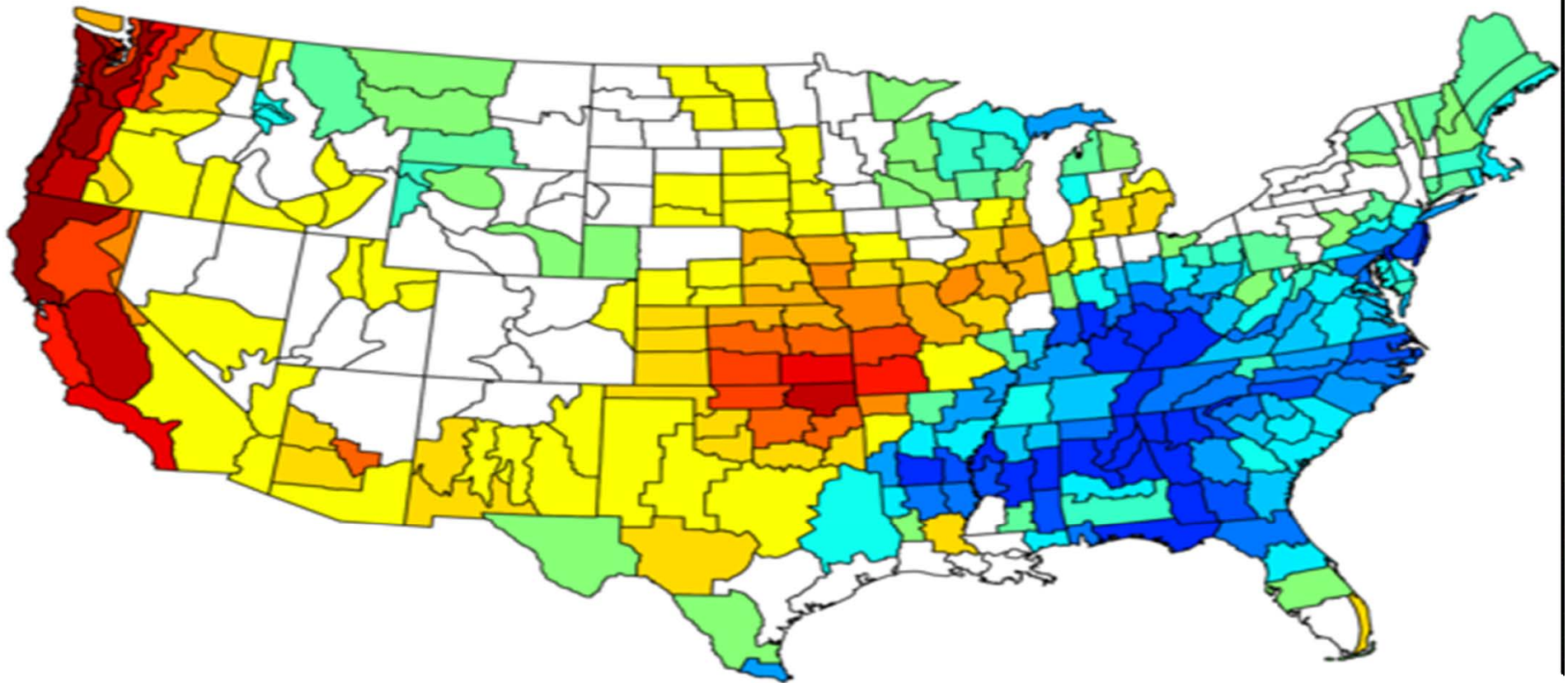


USA
ECMWF SEAS5 (monthly) from 10/01/2019/00z

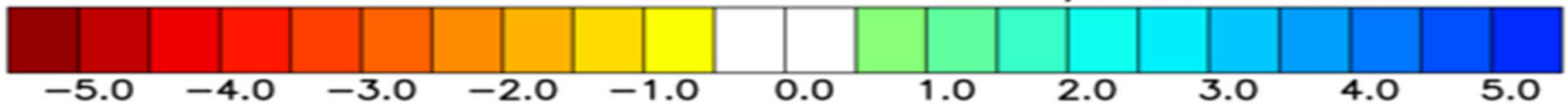
Model:

Potential Analog Years Precipitation Anomalies

NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)
Nov to Apr 2013–14, 2014–15, 2018–19
Versus 1981–2010 Longterm Average

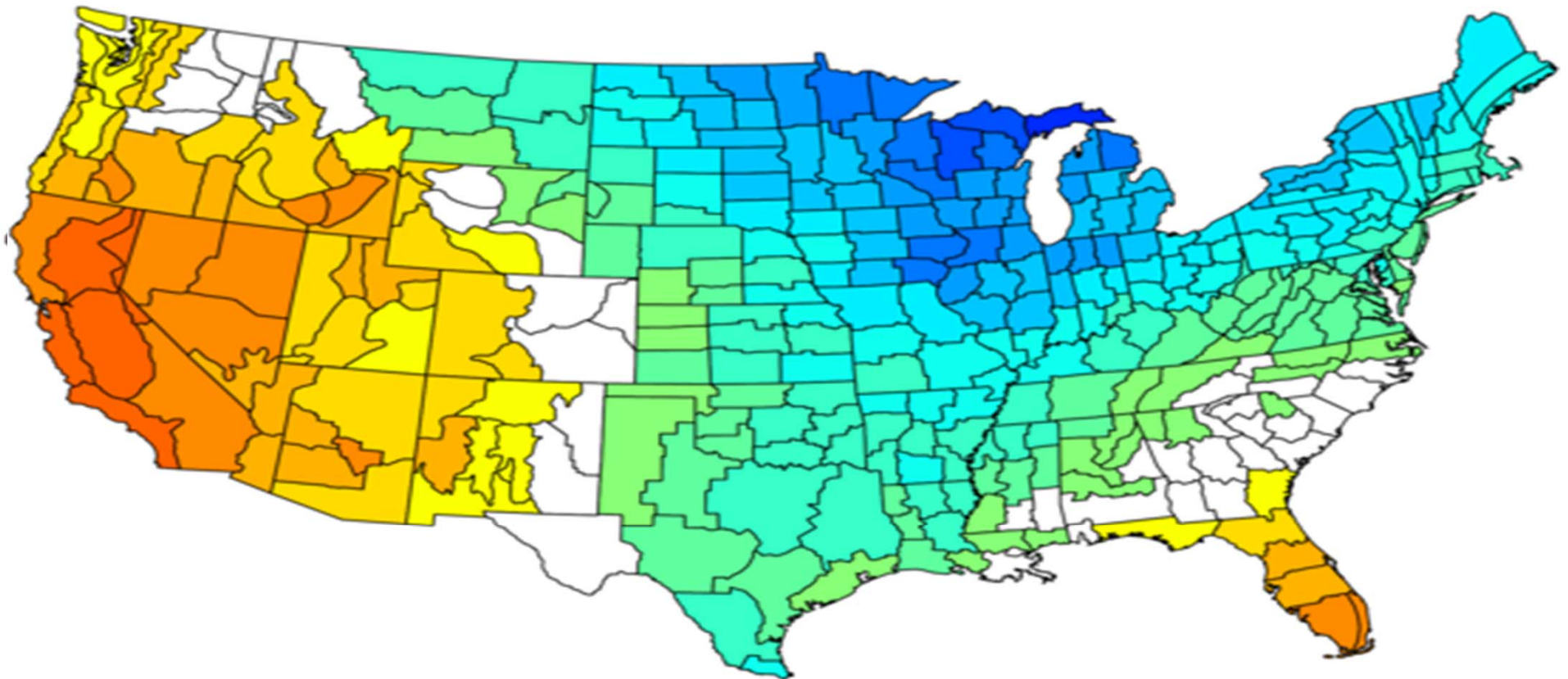


NOAA/ESRL PSD and CIRES-CU

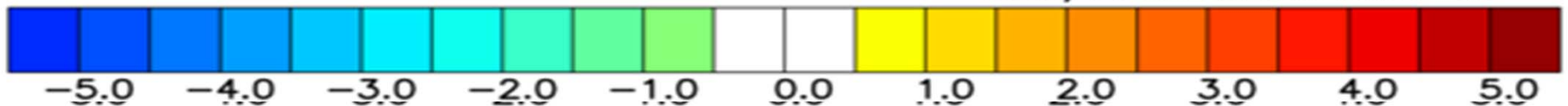


Potential Analog Years Temperature Anomalies

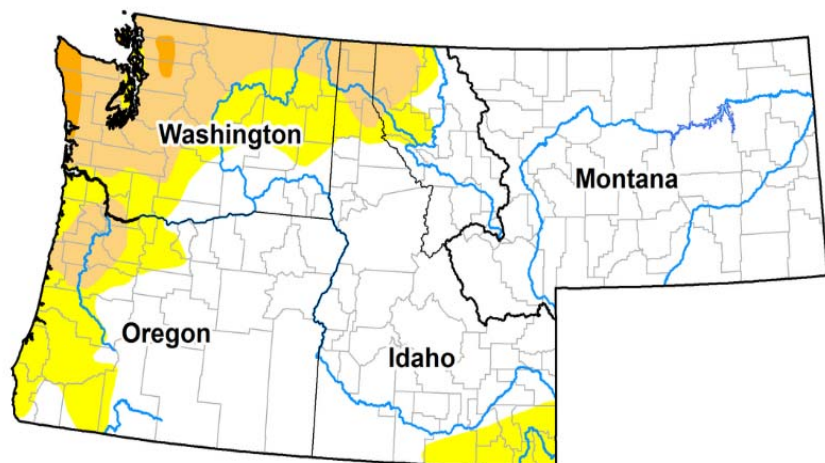
NOAA/NCEI Climate Division Composite Temperature Anomalies (F)
Nov to Apr 2013–14, 2014–15, 2018–19
Versus 1981–2010 Longterm Average



NOAA/ESRL PSD and CIRES-CU

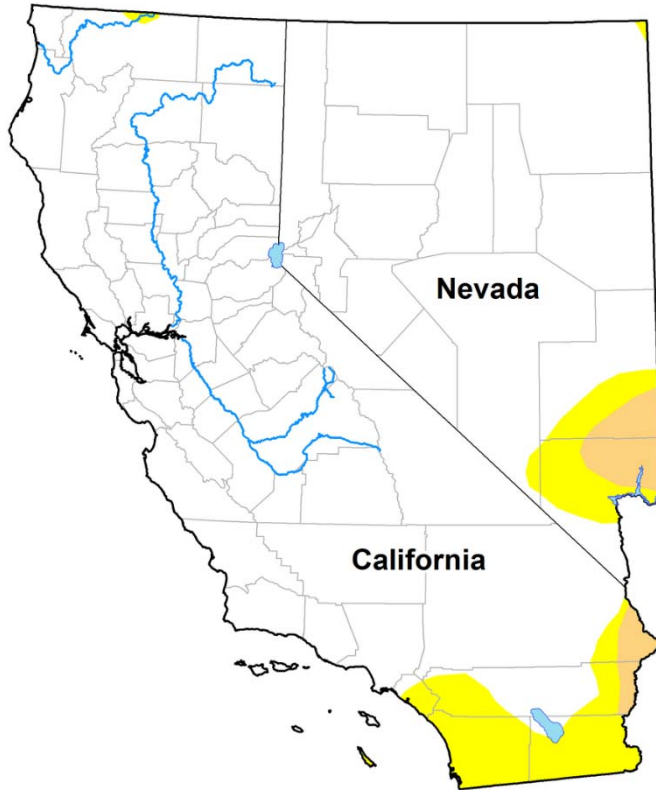


Pacific Northwest Regional Outlook



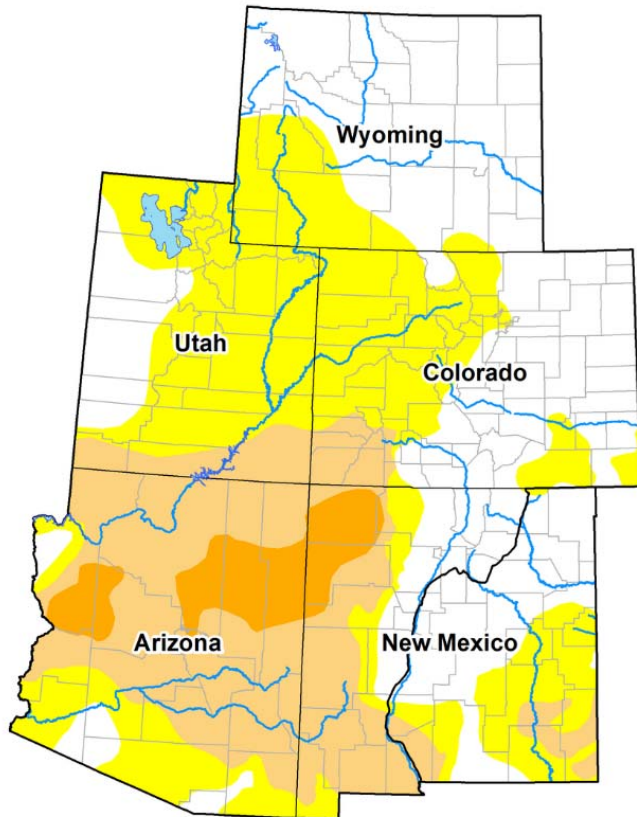
Drought currently an issue, especially northwest...and could worsen according to models and analogs. Dry signal isn't strong for a prolonged stretch, but worth protecting against.

California/Nevada Outlook



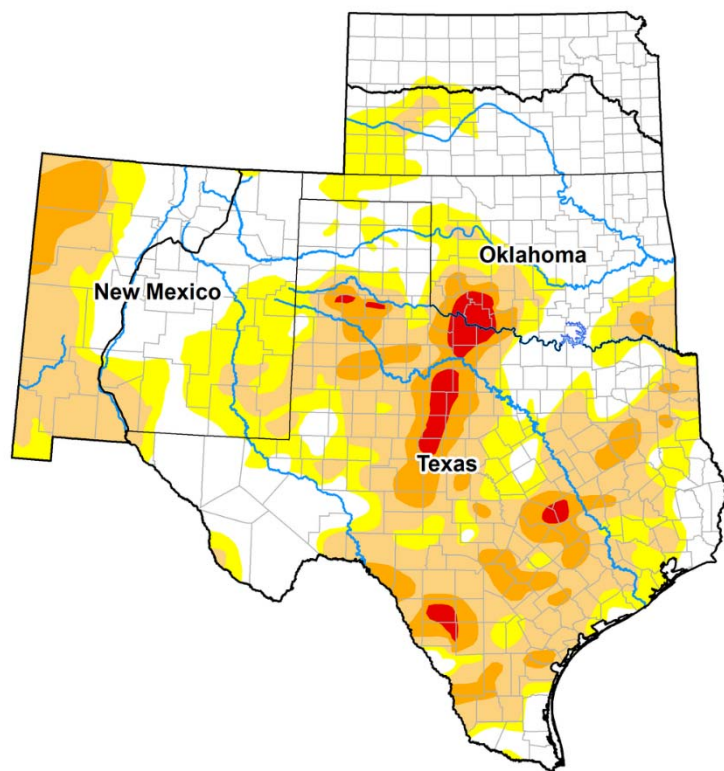
Drought not an issue at this time. However, various models show the potential for the wetter than average at times, and much drier than average at times. The driest stretch could be Jan/Feb per models. Esp. if weak Modoki occurs...

Four Corners Regional Outlook



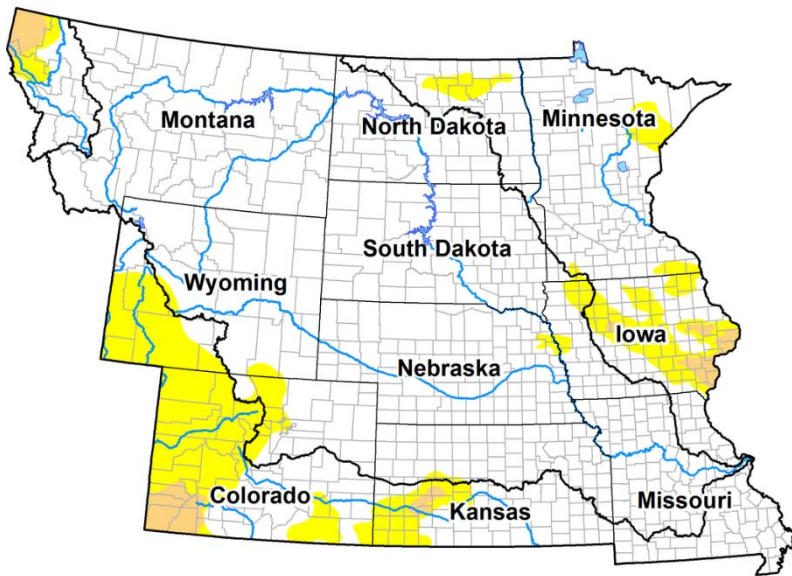
Drought continues to expand due to monsoon season failure. May continue to worsen through the fall, before getting better through the winter and spring of 2020.

Southern Plains Regional Outlook



Drought has worsened in New Mexico and parts of Texas Panhandle. Drought has eased considerably farther east. Models optimistic for continued relief, especially east per Modoki. Less west...

Plains/Midwest Regional Outlook



Most areas not experiencing ANY drought. Models do not show stout dry signal for most areas. In fact, the winter/spring could be quite active for most of this region...esp. Northern Plains and Missouri Valley.

My Thoughts...

- ENSO neutral or weak Modoki will continue...
- Analog years: 2004-05, 2013-14, 2014-15, 2018-19
- Analogs can still change a bit, so will continue to update accordingly...
- Combine analog info, model data, and data from RangeCalc to help manage interval decisions.

Weather 5280

- brianbledsoewx@gmail.com
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