

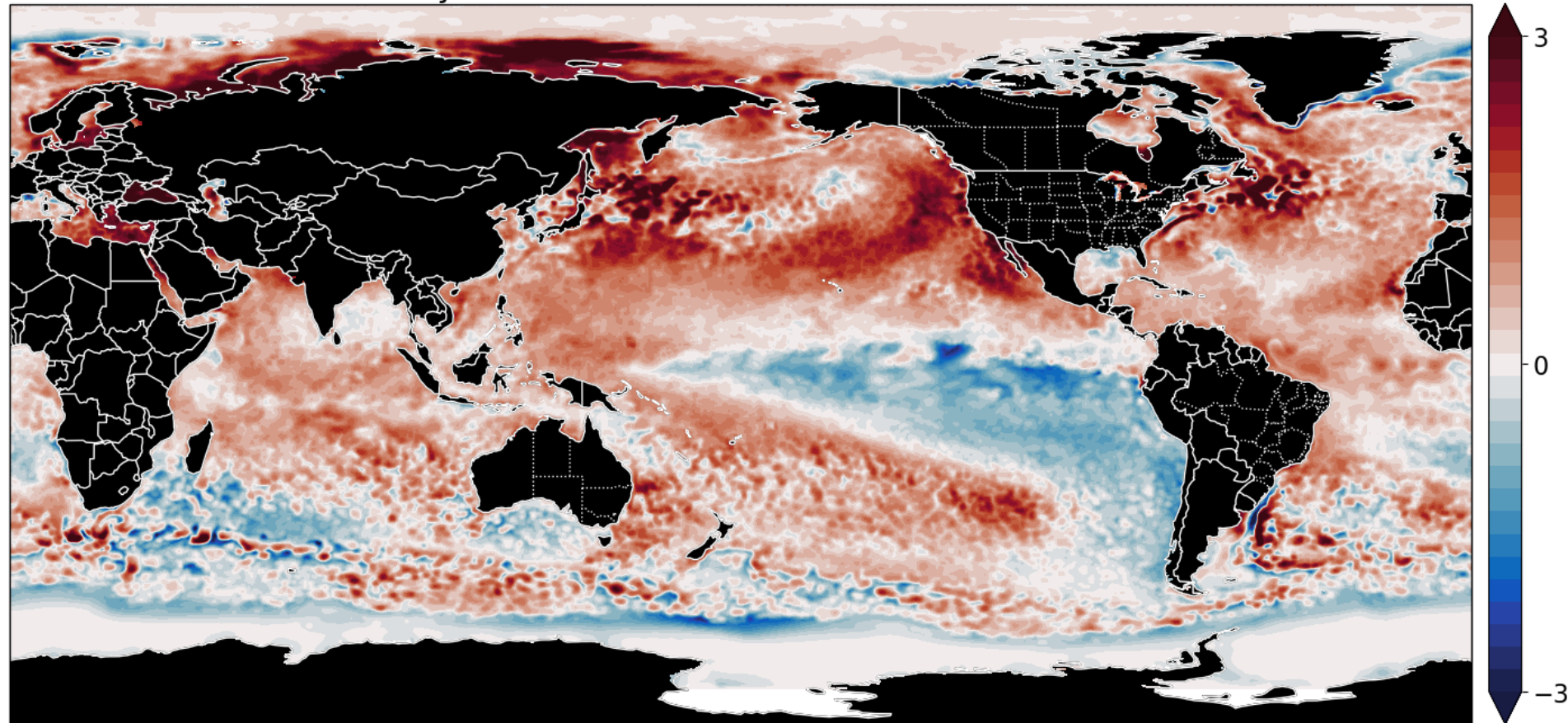
# ENSO update – introduction to ENSO tracker

Ben Noll | NIWA  
with inputs from BoM and NOAA

# Sea Surface Temperatures (SSTs)

NOAA OISSTv2 SST Anomaly

1-16 Oct 2020



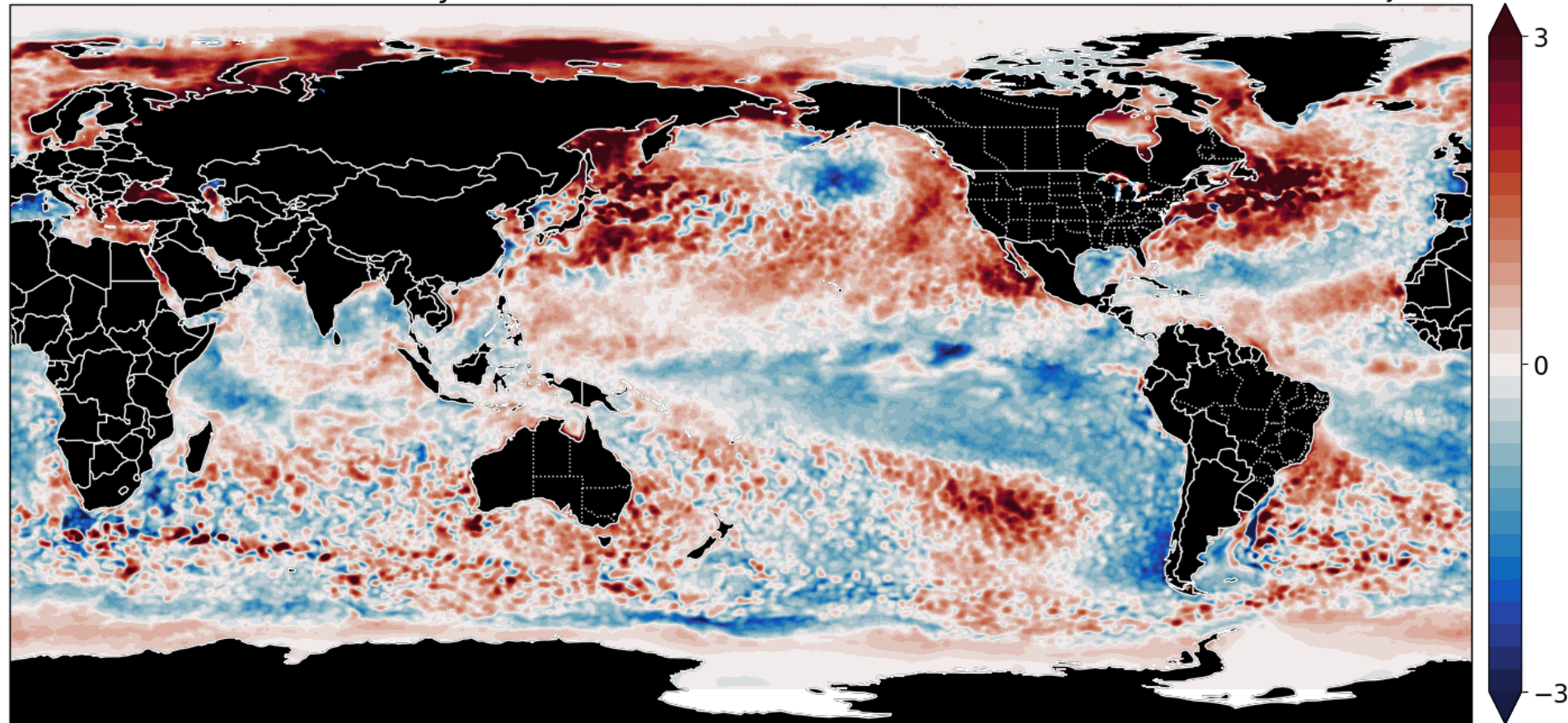
- A moderate La Niña is in place with a classical signature in the eq. Pacific
- Much of the rest of the globe is experiencing above average SSTs
- Climate change – what is "normal" seems to be evolving in near real-time



# SSTs: October minus May 2020

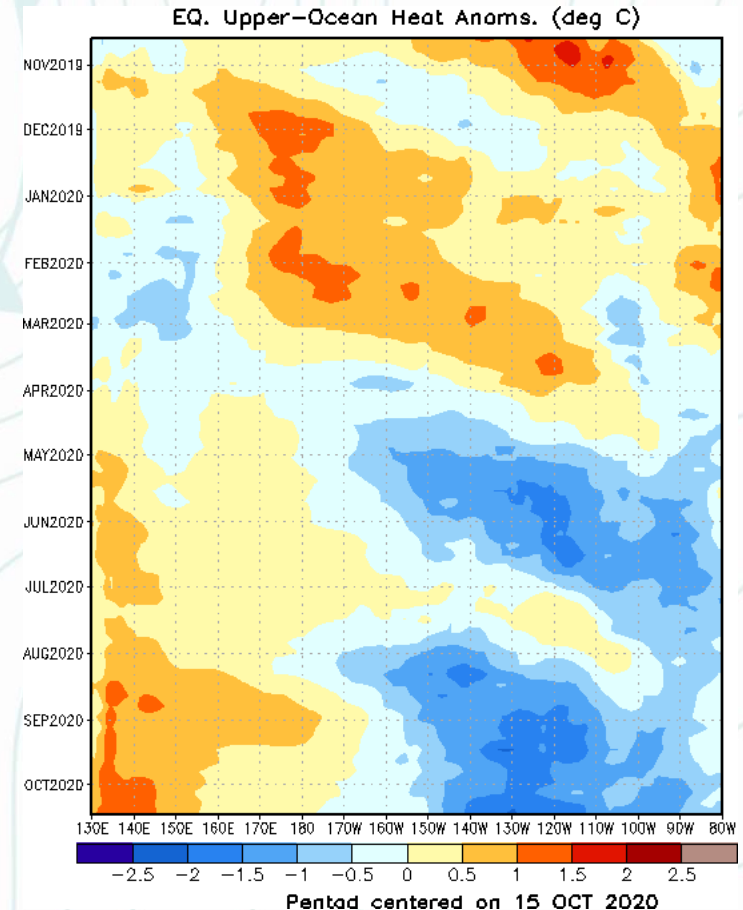
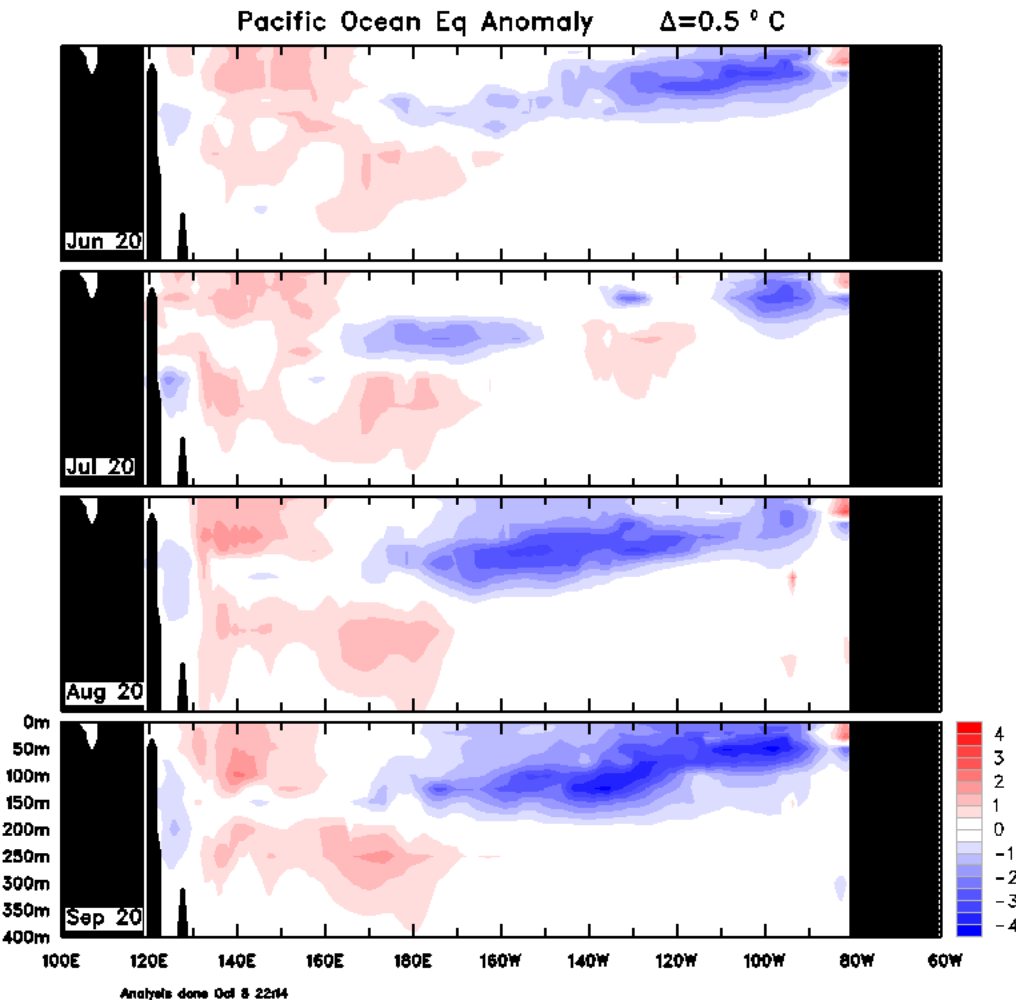
NOAA OISSTv2 SST Anomaly Difference

Oct minus May 2020



- Cooling across the tropical Pacific, especially near the equator
- Warming (relative to average) in the West Pacific and North Pacific, mixed in the South Pacific

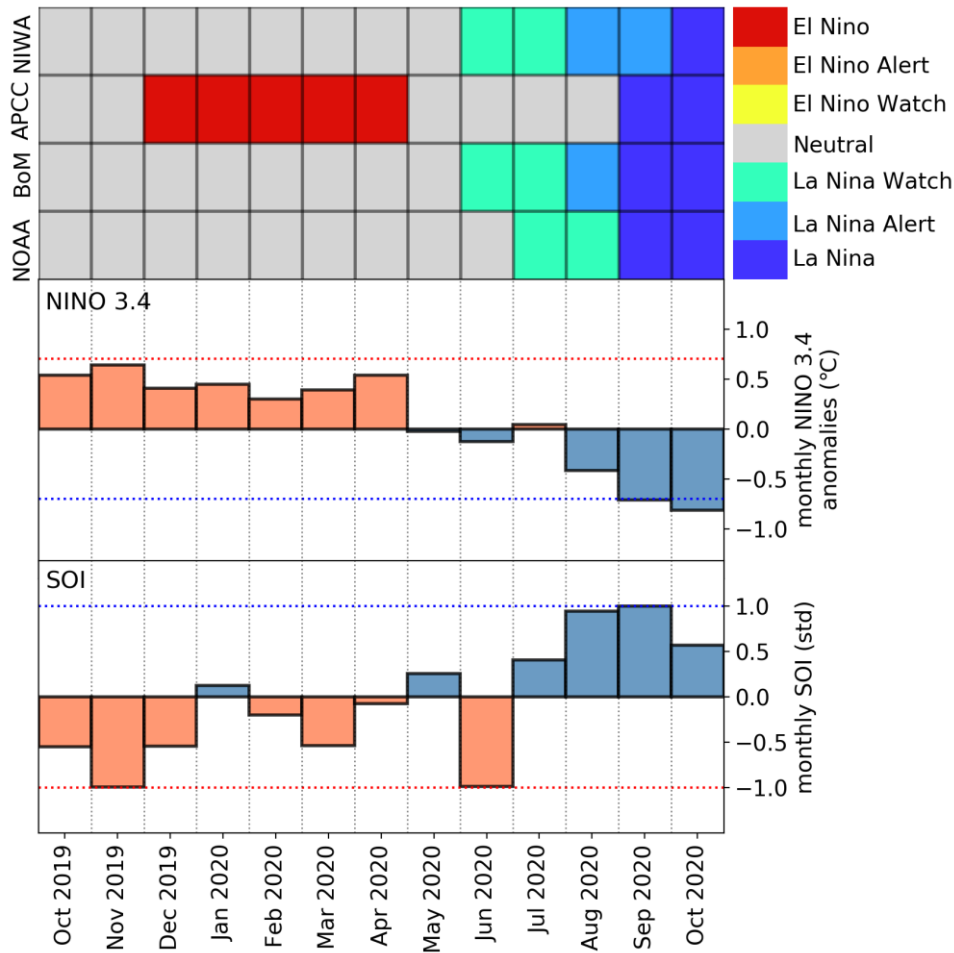
# Ocean sub-surface conditions



- Sub-surface "cool pool" continues to expand
- Upper oceanic heat content is well aligned with a canonical La Niña

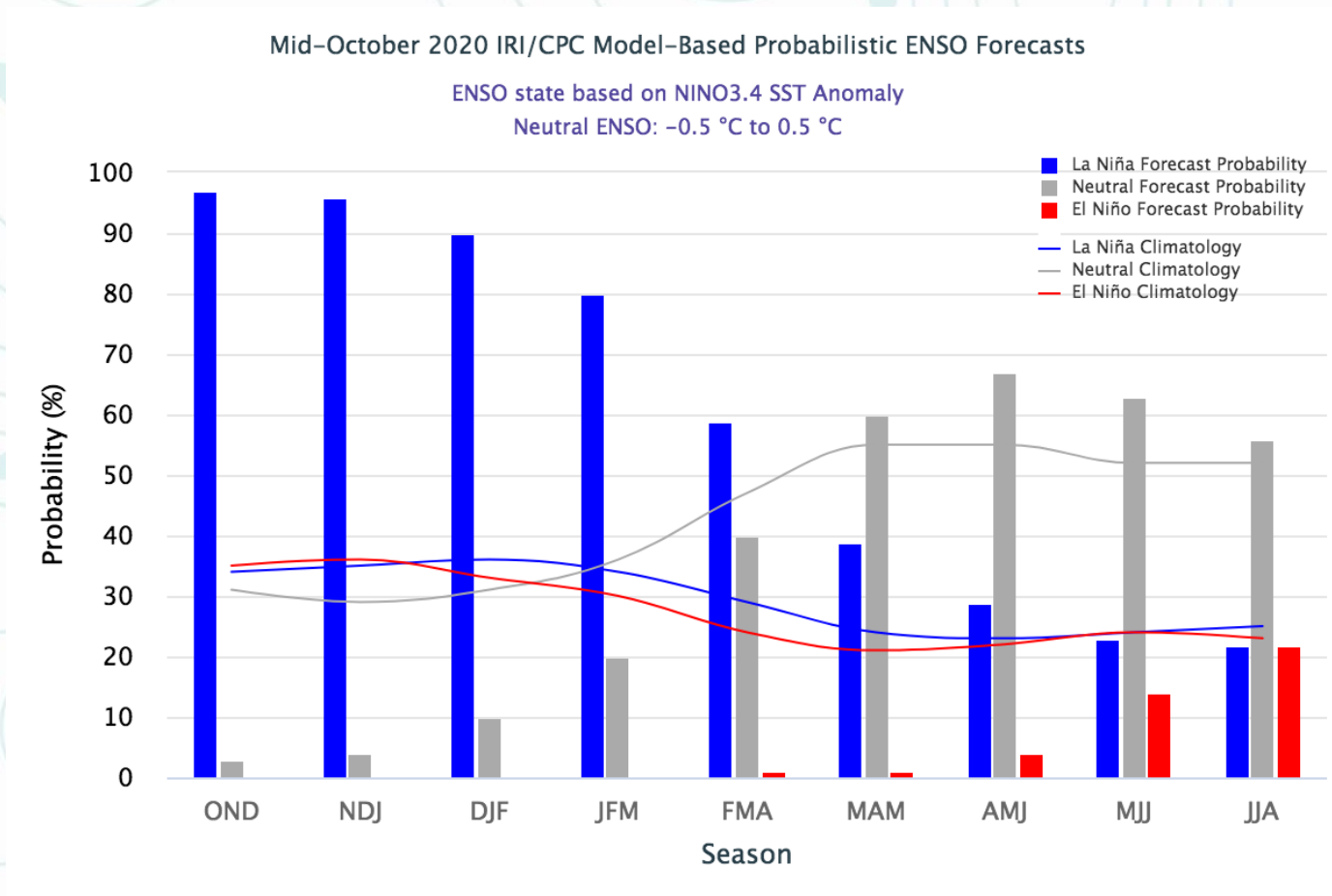
# Pacific Regional Climate Centre ENSO tracker

Pacific Regional Climate Centre ENSO tracker



- ENSO tracker – new RCC product:  
<https://www.pacificmet.net/enso-tracker>
- Updated monthly
- One stop ENSO shop
- Tracks organizational ENSO classification, NINO3.4 anomalies, SOI values
- Free to share and use in your reports

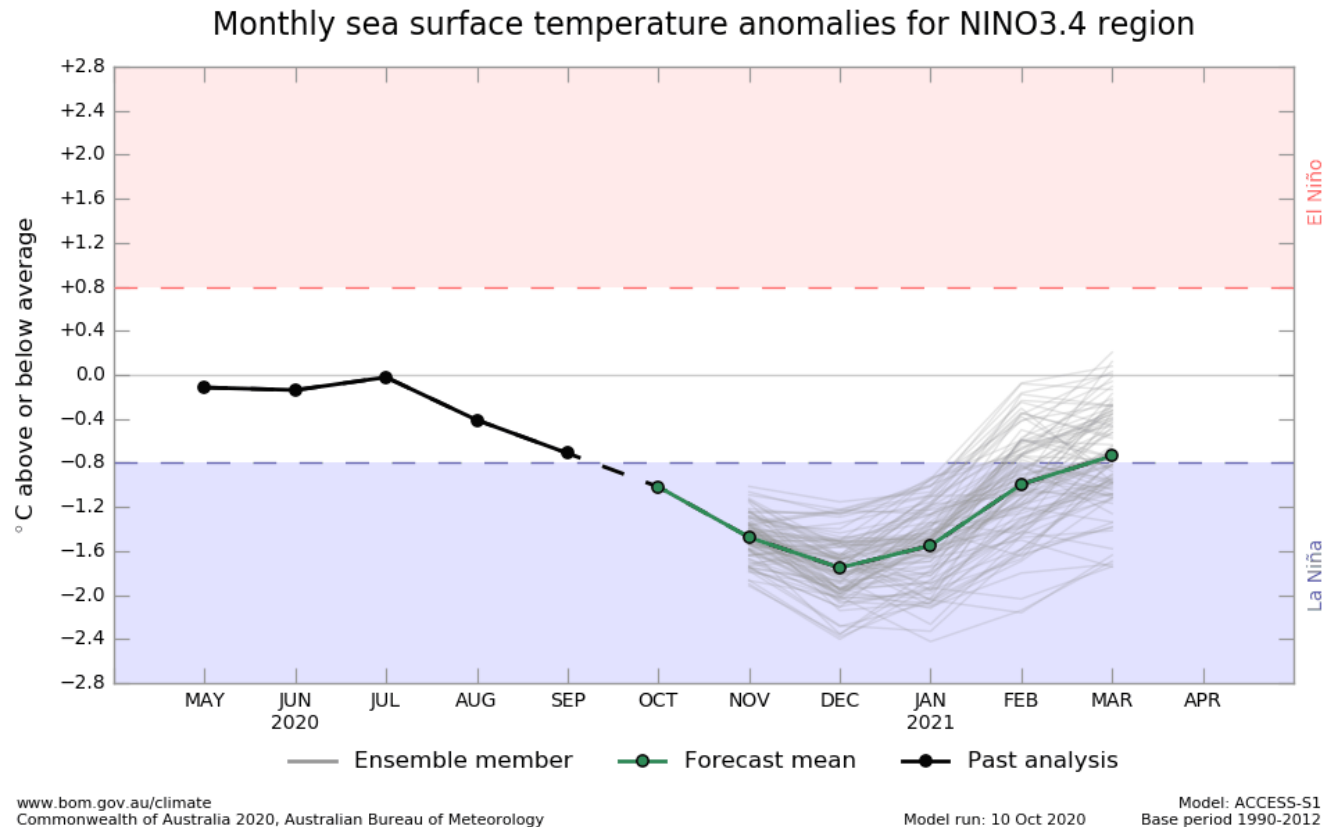
# IRI/NOAA ENSO forecast



- 91% chance for La Niña conditions from October-December
- About equal chances for La Niña and ENSO neutral by March-May 2021



# BoM/ACCESS-S1 ENSO forecast



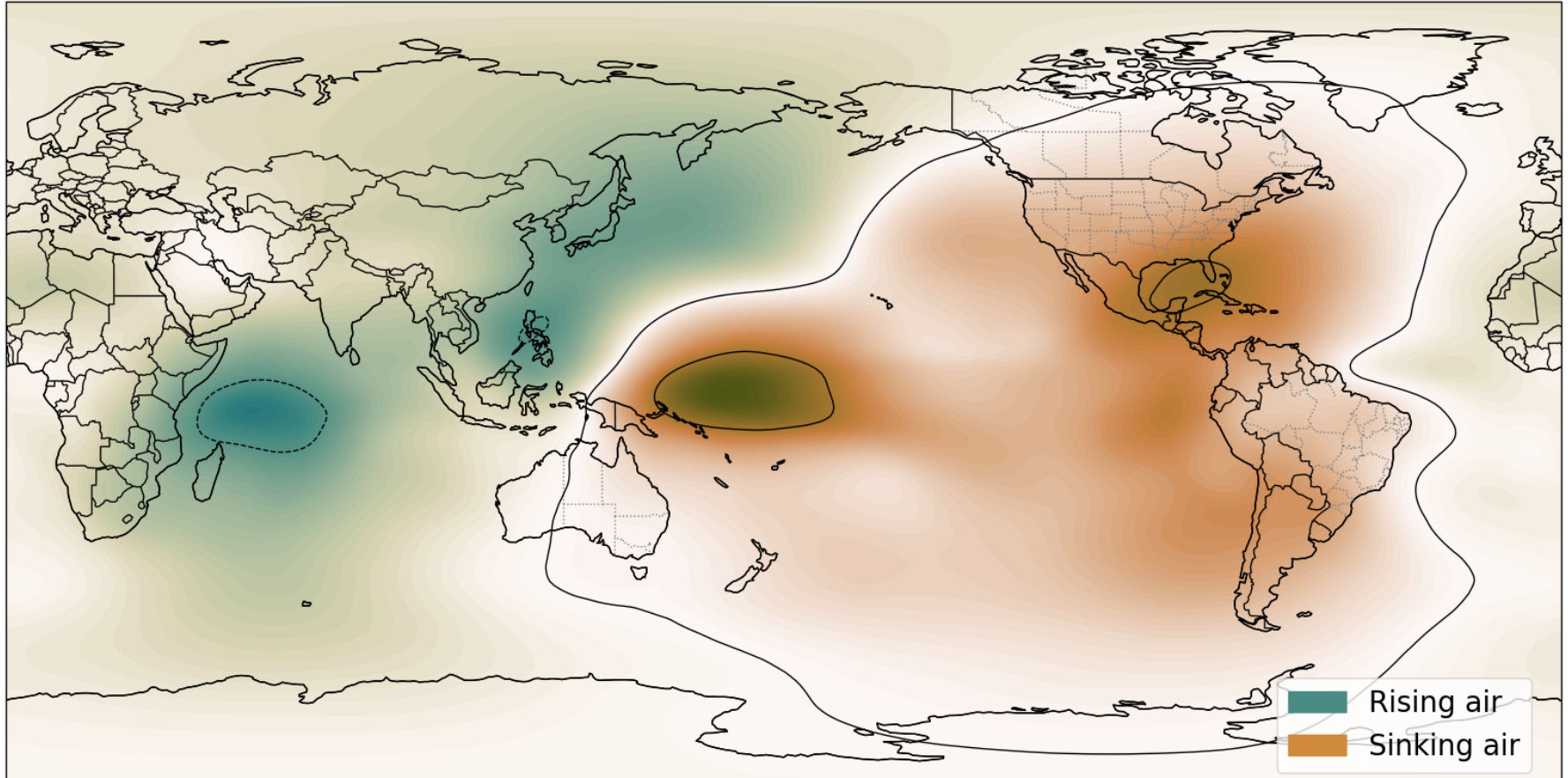
- La Niña event shown to peak in December
- Niño 3.4 Index dips to near  $-1.6^{\circ}\text{C}$  (moderate to strong event)

# Forecast velocity potential

How the atmosphere reacts to ocean anomalies

ECMWF 200 hPa Velocity Potential Anomaly

Nov 2020-Mar 2021



- Sinking air (less upper air divergence) over the Pacific, especially west
- Rising air over the Maritime Continent, western Indian Ocean

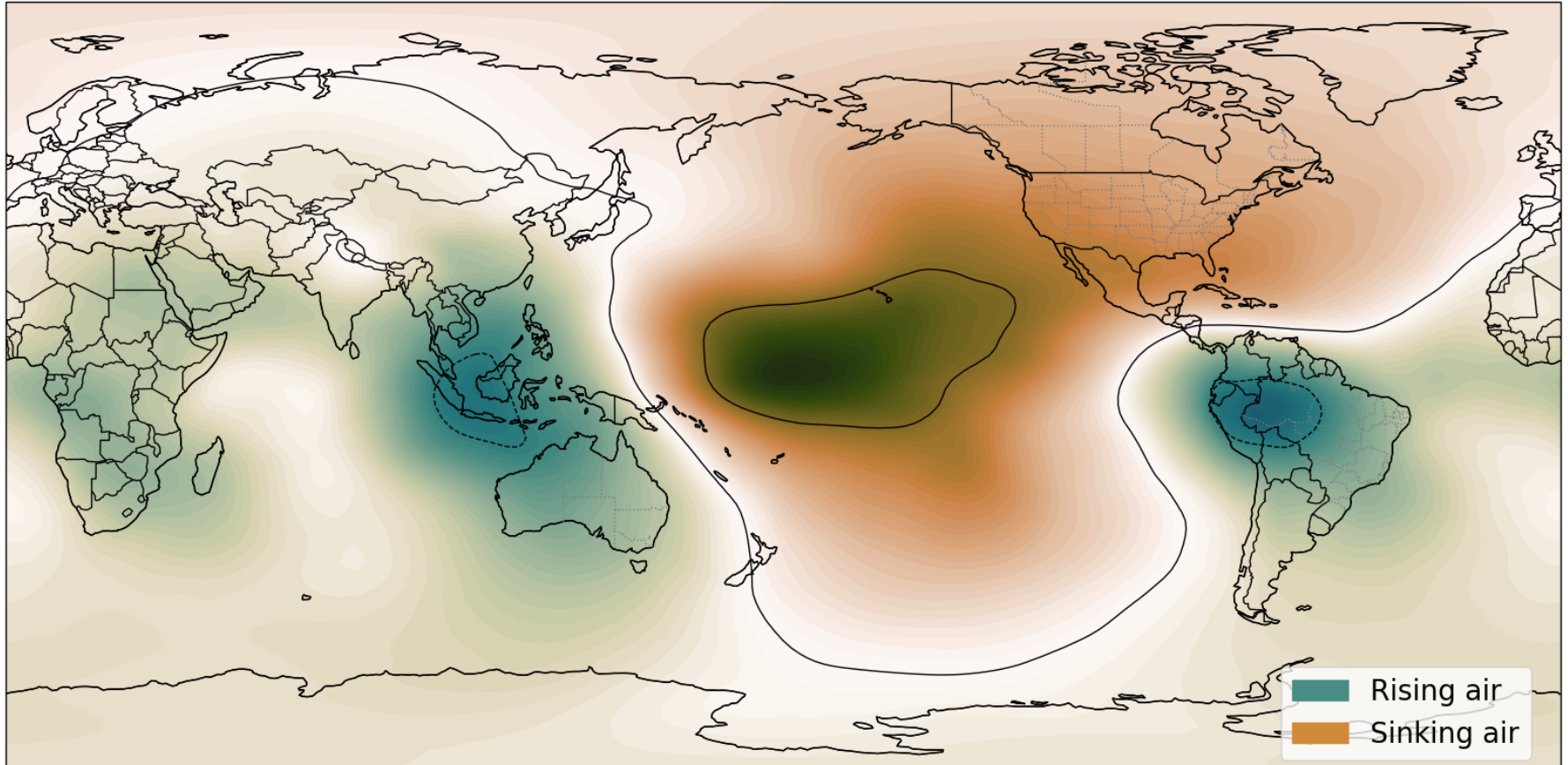


# Observed velocity potential

## Historical La Niña events

Average La Niña Velocity Potential Anomaly

Nov-Mar



- Typically, La Niña comes with a prominent rising branch over the Maritime Continent
- No rising branch north of Madagascar, Pacific sinking branch further east compared to previous slide

# Key messages

- Moderate La Niña is expected to build until December-January and continue through at least early 2021
- Ocean temperatures are warmer than average across much of the Southwest Pacific
- We know the “average outcome” of La Niña but no La Niña is average – each event comes with a unique set of climate characteristics