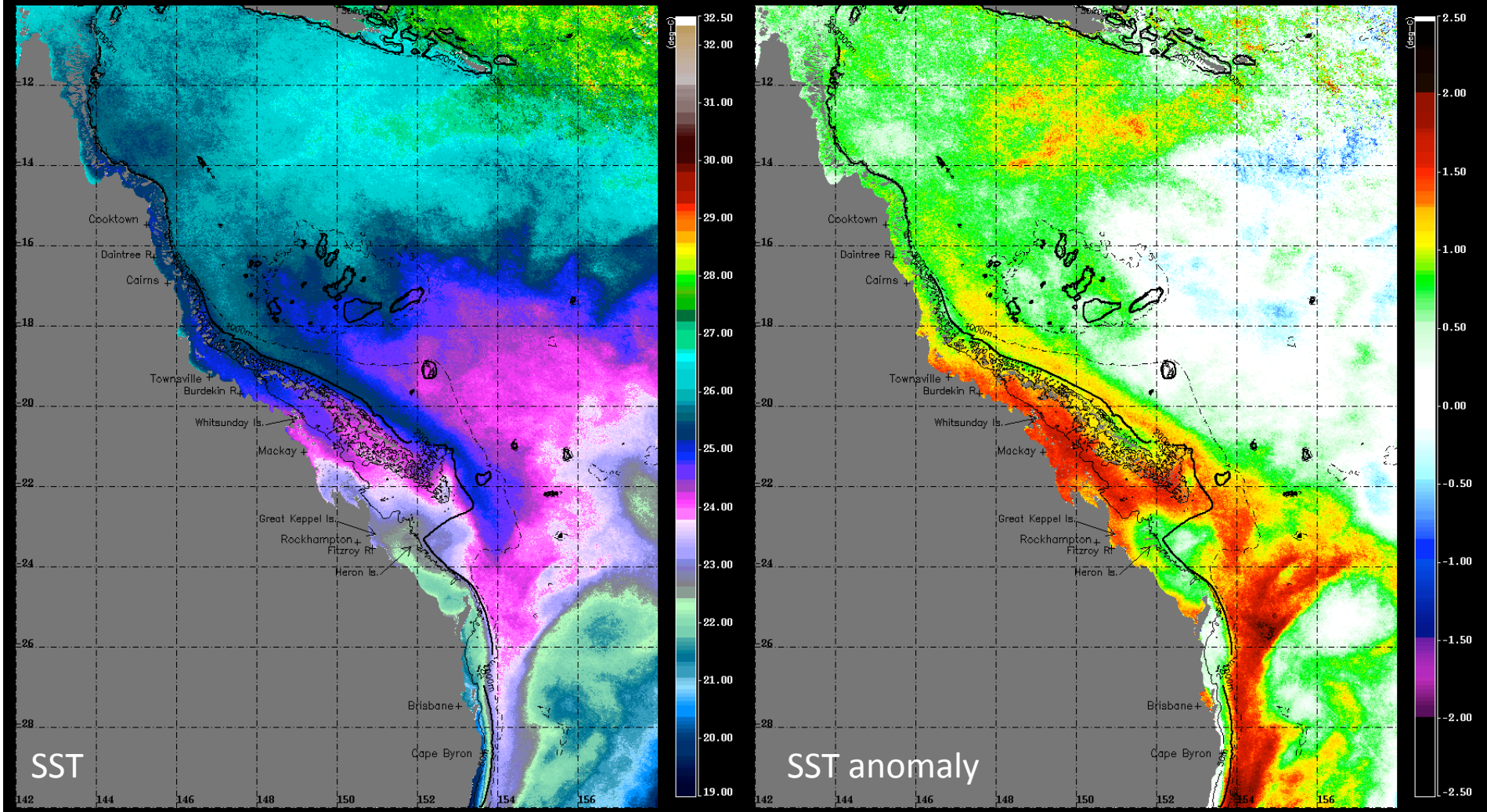
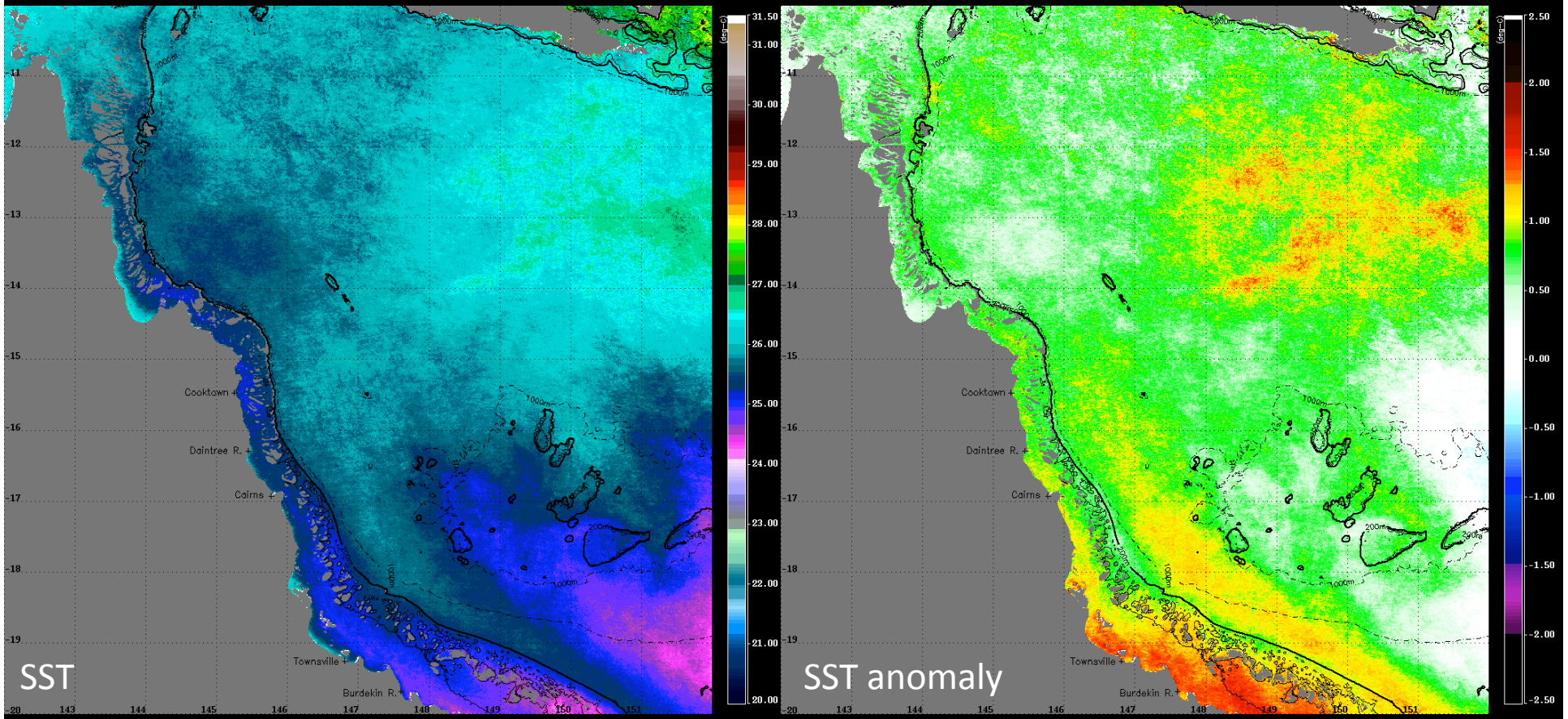
Modis SST (day+night): September 2009



Note:

- Strong positive anomalies along the GBR, especially south of 18 S.
- An anomalously strong EAC is clearly apparent along the eastern Australia shelf.

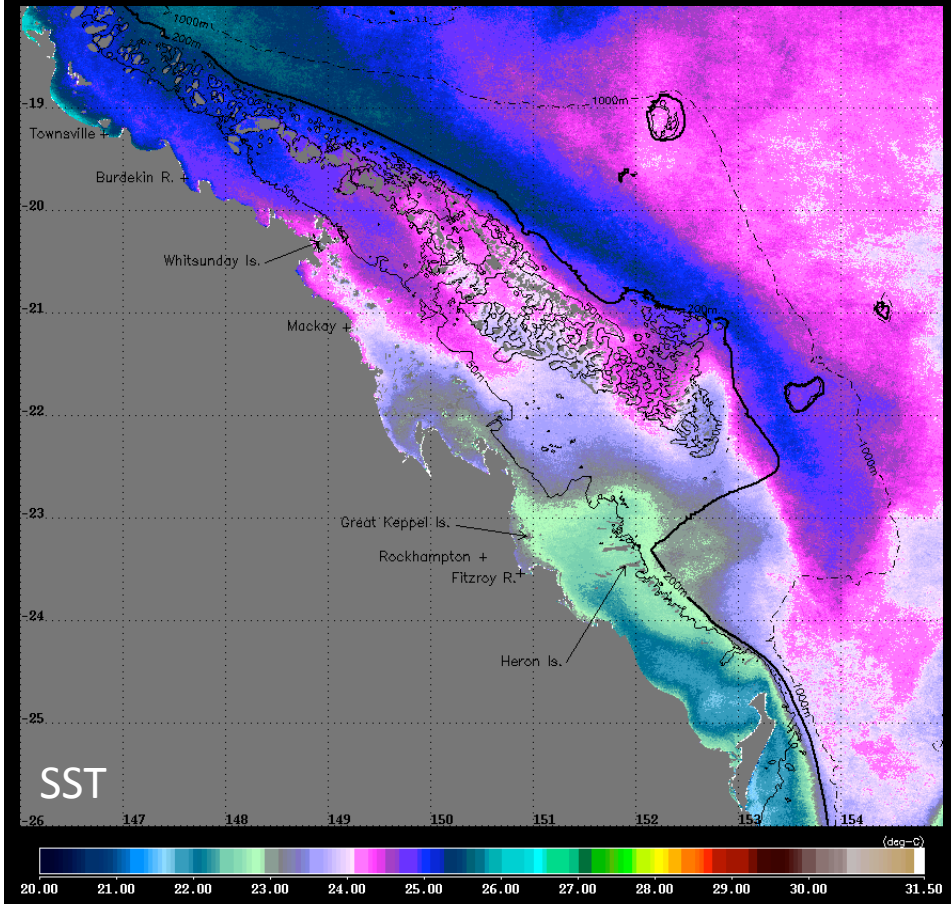
Northern GBR SST: September 2009

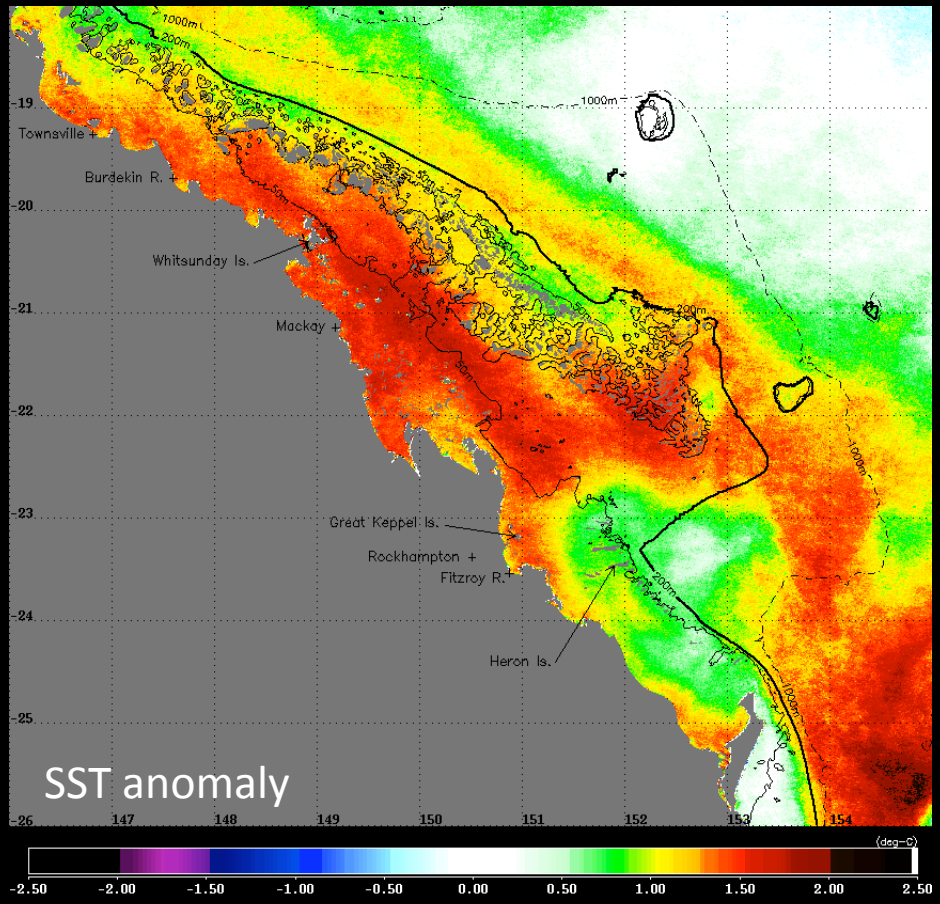


Note:

- Positive anomalies in the northern GBR and Coral Sea regions, strongest in the central GBR.

Southern GBR SST: September 2009



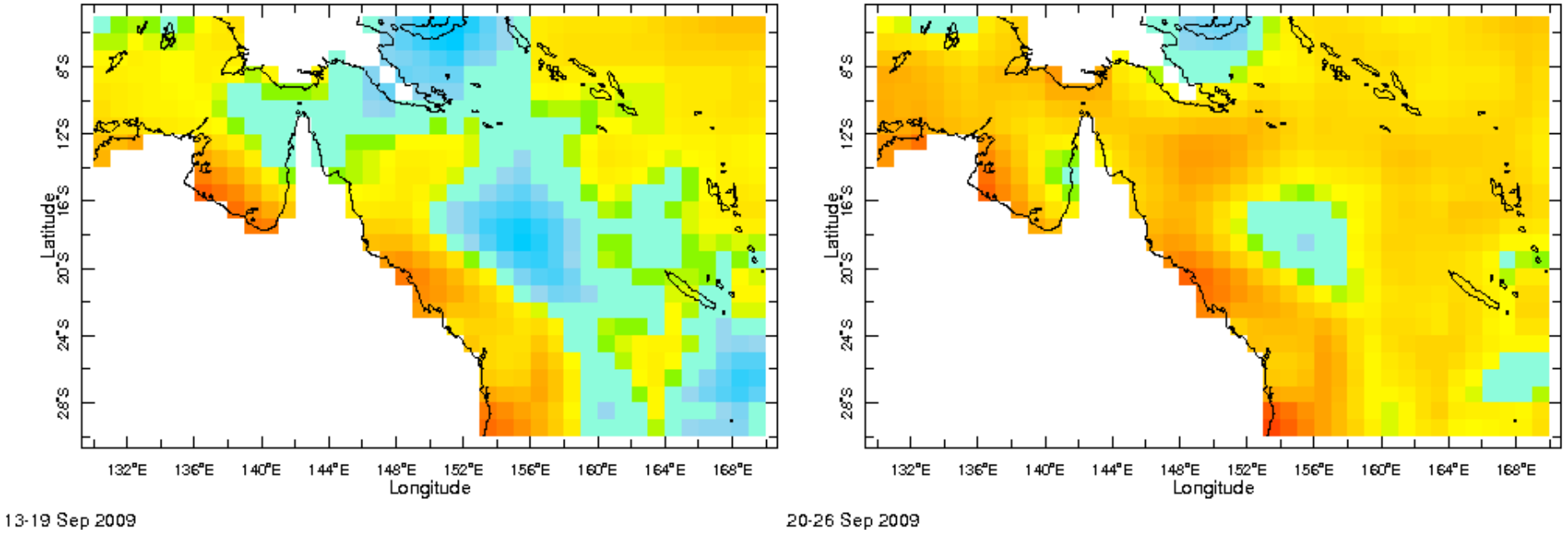


Note:

- Very strong positive anomalies along the S-GBR
- In the Capricorn Bunker region, the previous negative anomalies have dissipated with a shift towards positive anomalies, although remaining less intense than the rest of the S-GBR.

UQ_ OceanSpace group

NOAA NCEP EMC CMB GLOBAL Reyn_SmithOIv2 weekly ssta: Sea Surface Temperature Anomaly data



13 – 19 Sep 2009

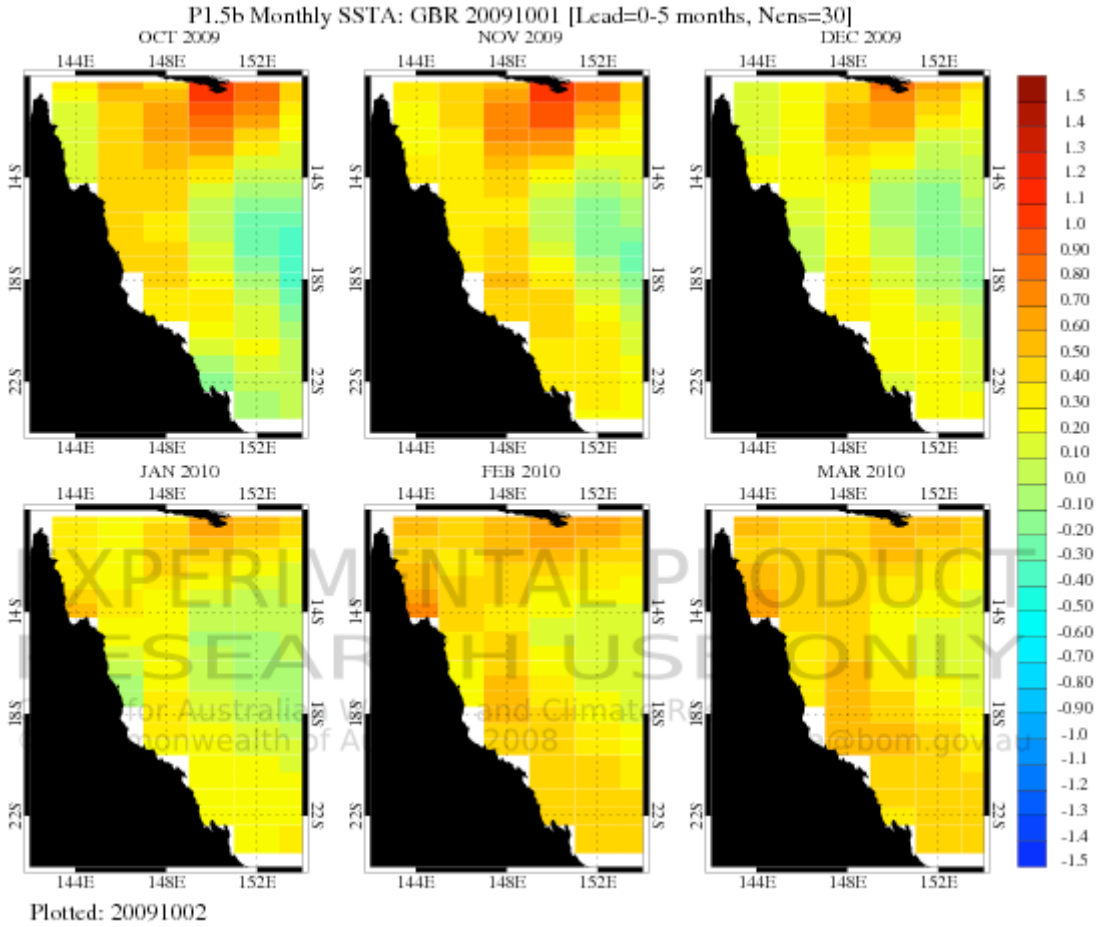
20 – 26 Sep 2009

Note:

- NOAA SST anomalies, also show positive anomalies over the GBR, specially in the central-GBR region

http://iridl.ldeo.columbia.edu/SOURCES/.NOAA/.NCEP/.EMC/.CMB/.GLOBAL/.Reyn_SmithOIv2/.weekly/.ssta/

Experimental Great Barrier Reef SST Anomaly Forecasts (POAMA)



Note:

- POAMA forecast is similar to that in August, with close to average temperatures in December that are expected to increase in February (although this new POAMA format is more difficult to interpret)

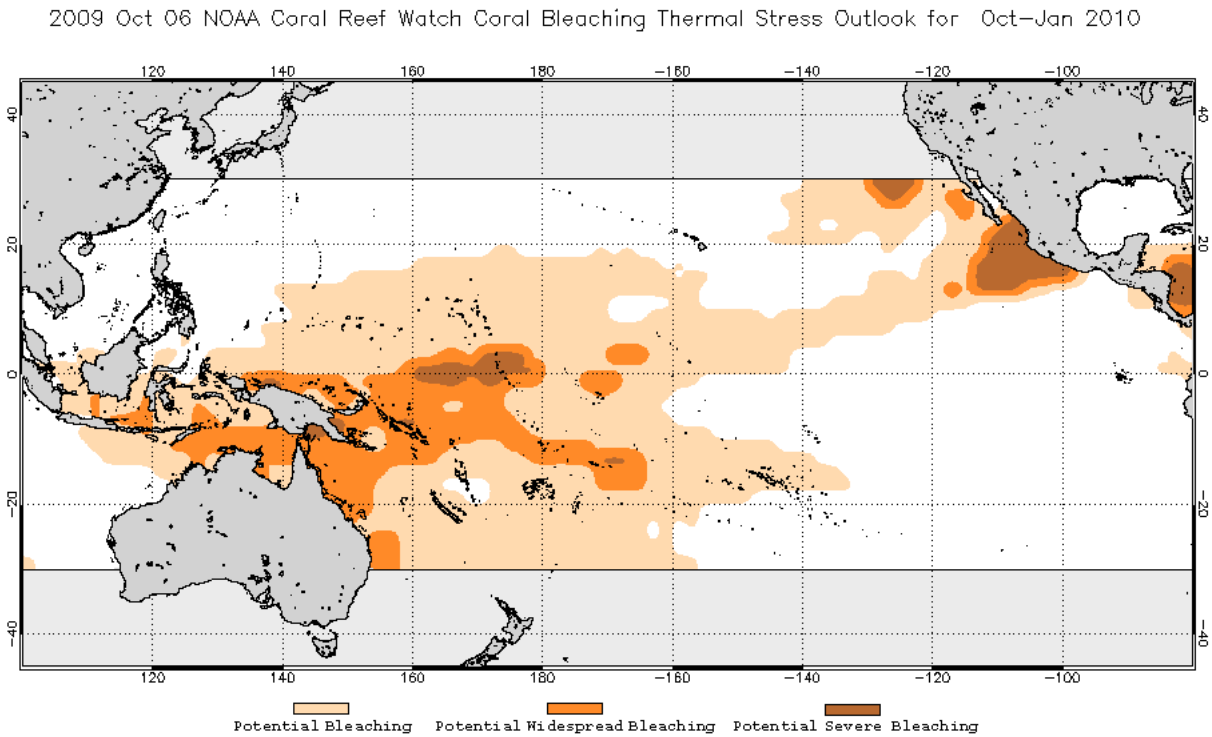
http://poama.bom.gov.au/experimental/poama15/sp_gbr.htm

NOAA Coral Reef Watch

Seasonal Coral Bleaching Thermal Stress Outlook

(Experimental product, 2x2 degree spatial resolution)

Outlook for October to January

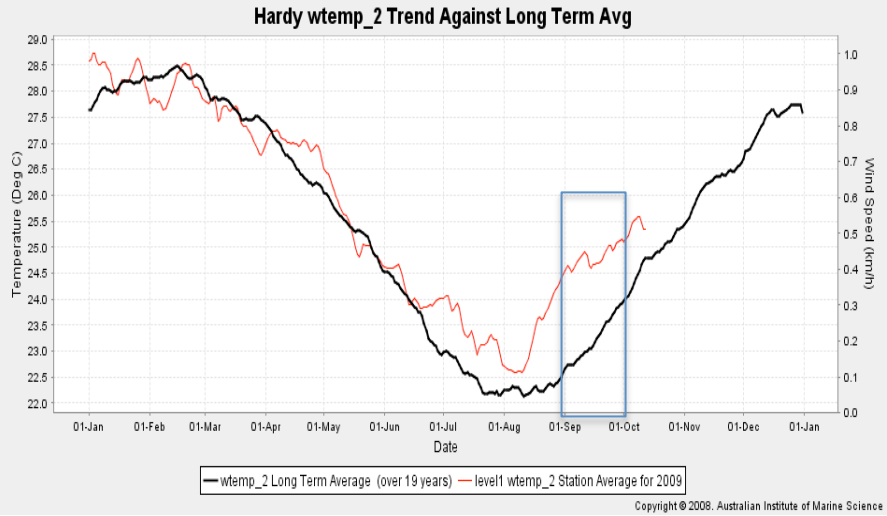


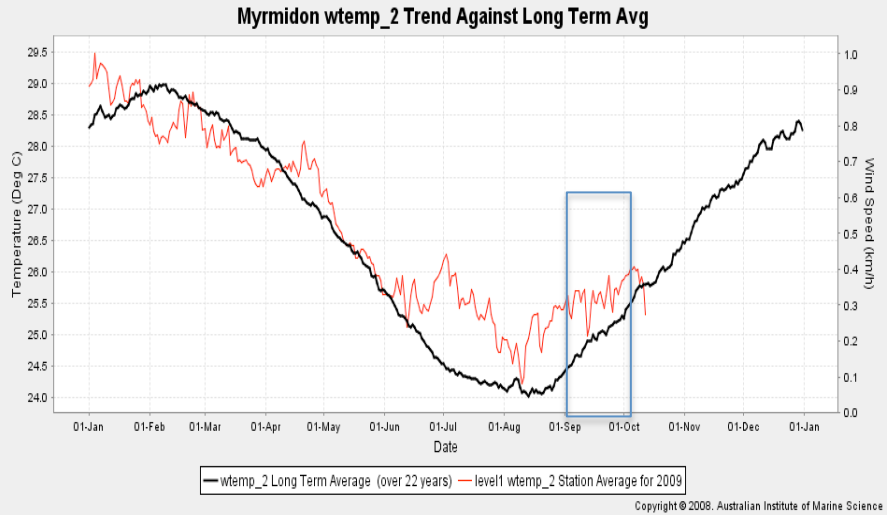
Note:

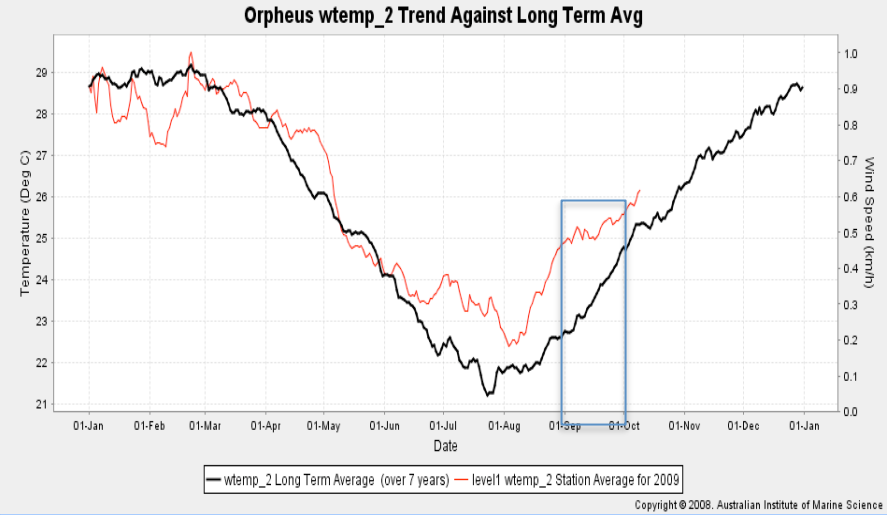
- The NOAA thermal stress Outlook for October to January predicts a potential widespread bleaching along the GBR.

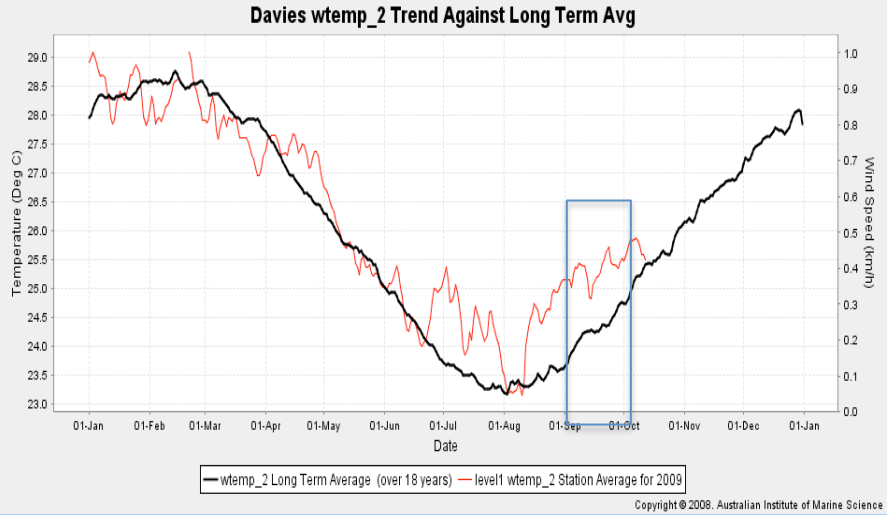
http://coralreefwatch.noaa.gov/satellite/bleachingoutlook/

Weather Observing System: AIMS Data Centre





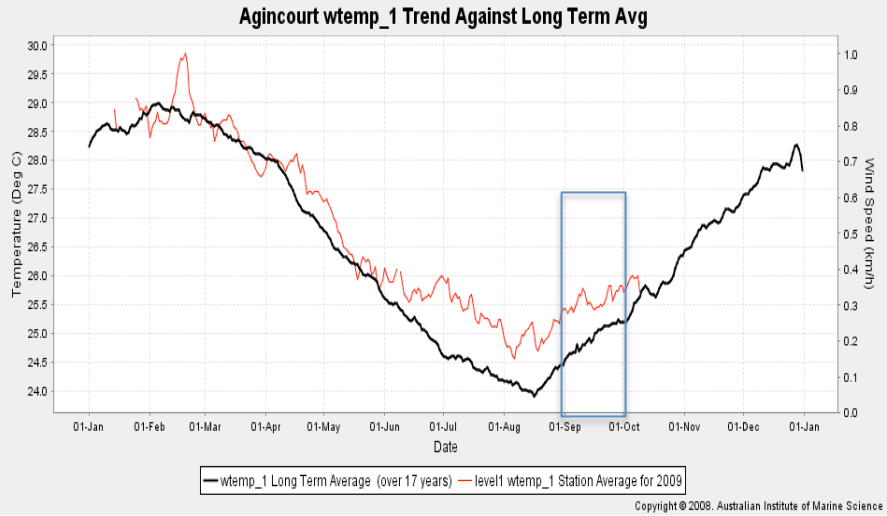


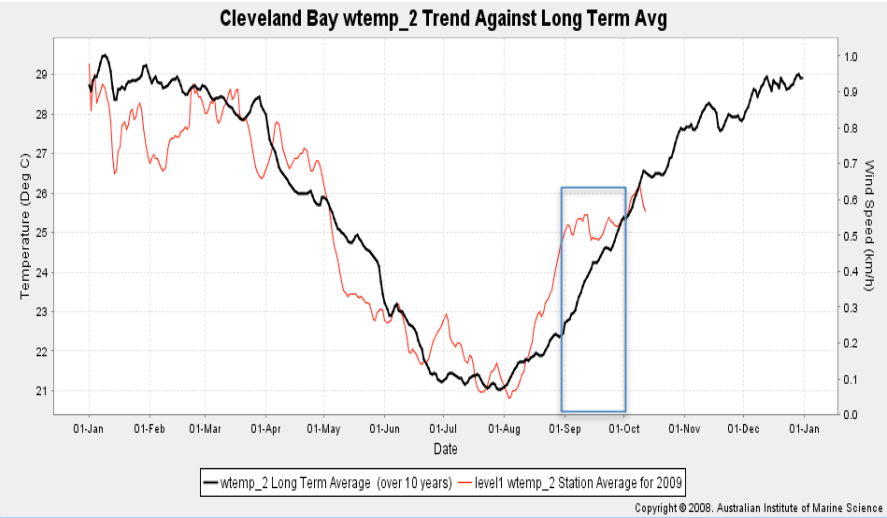


Note:

- The in situ data also show temperature above the average in September.

Weather Observing System: AIMS Data Centre



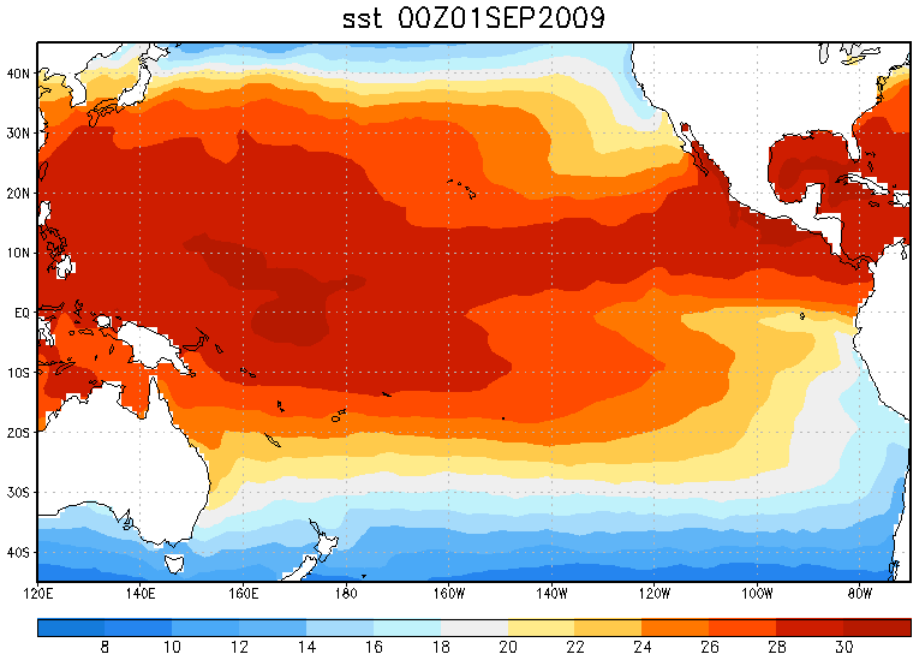


Note:

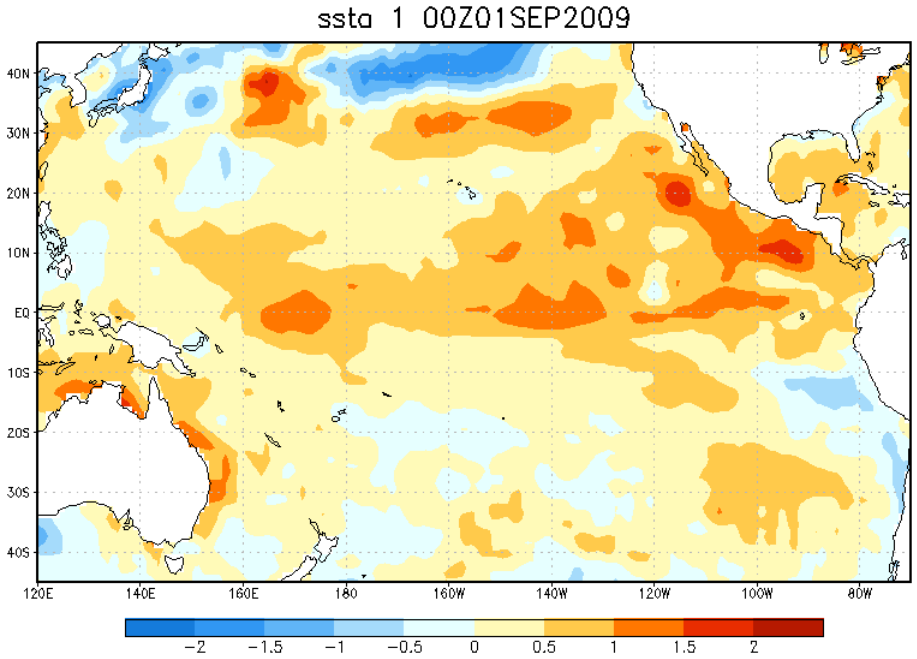
- The in situ data also show temperature above the average in September.

NOAA Optimum Interpolation Sea Surface Temperature Analysis:

OI SST: SEPTEMBER 2009



OI SST ANOMALY: SEPTEMBER 2009



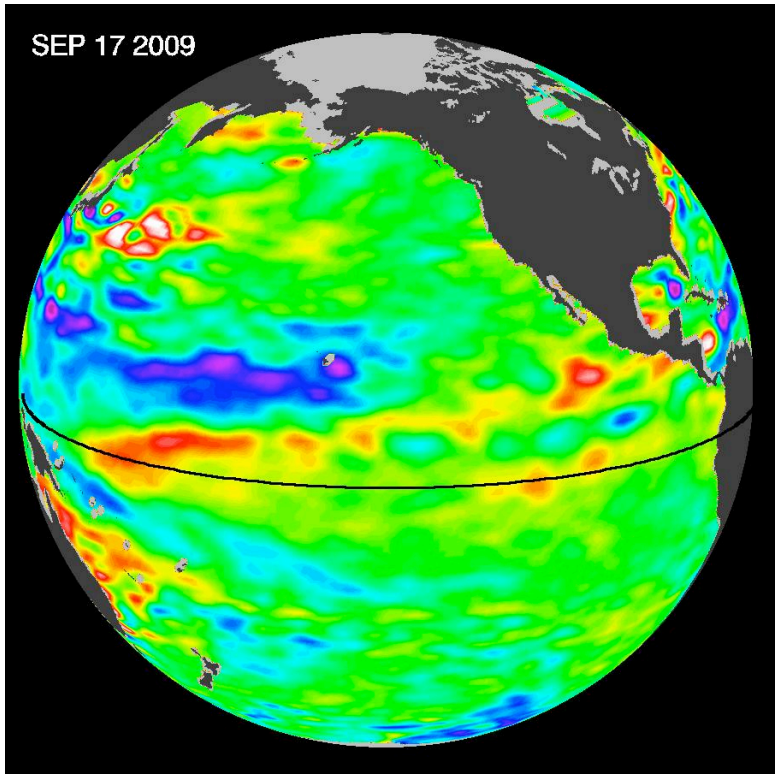
Note:

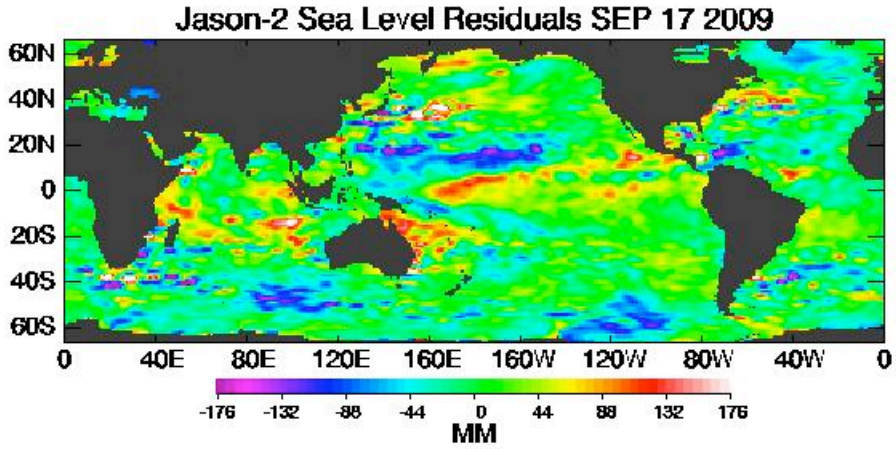
- In the equatorial Pacific, the NOAA-OISST shows strong positive SST anomalies along the equator indicative of an El Niño pattern, although less typical.
- However, along east Australia, the positive anomalies are opposite to that expected for an El Niño situation, based on the literature.

http://www.emc.ncep.noaa.gov/research/cmb/sst_analysis/

Sea surface height anomalies from Ocean Surface Topography: Jason-1 and Jason-22 (NASA/French)

10-day data cycle centered around September 17, 2009.



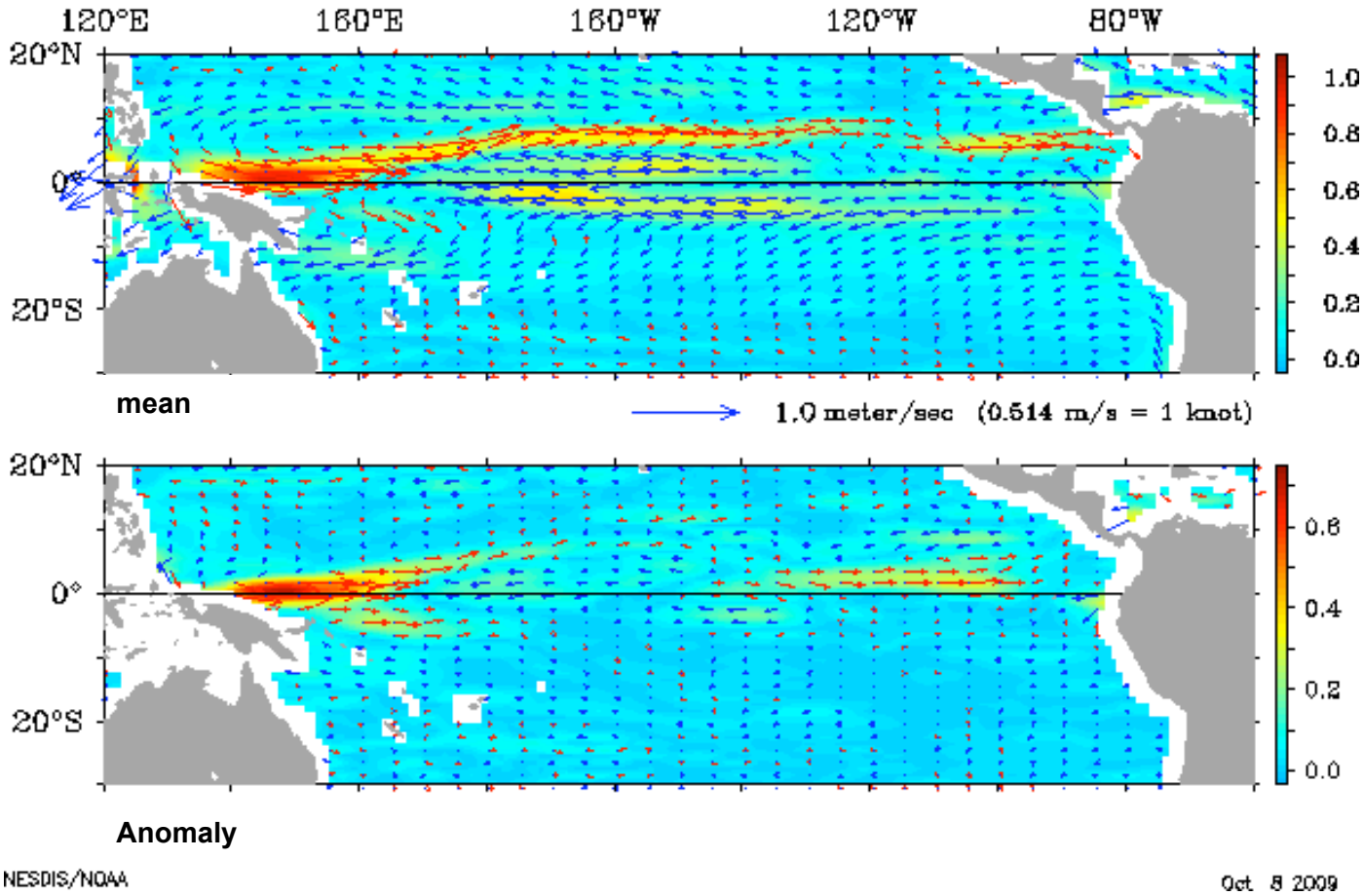


Note: (One of the characteristics that signal a developing El Niño is a change in average sea surface height (SSH) compared to normal sea level) The September SSH shows a series of positive anomalies (warm bumps) along the equator, associated with Kelvin waves travelling towards the east. This waves were triggered when the easterly trade winds weakened, related to El Niño phenomenon. However it is unclear if the 2009-2010 El Niño event will intensify. “The present condition of this year's El Niño is dwarfed in comparison with the "macho" El Niño of 1997-1998”, and bears closer similarities to the mild-moderate 2006-2007 El Niño event.

http://sealevel.jpl.nasa.gov/science/jason1-quick-look/

OSCAR: Ocean Surface Current Analysis - Real time

August 2009: monthly mean vs anomaly

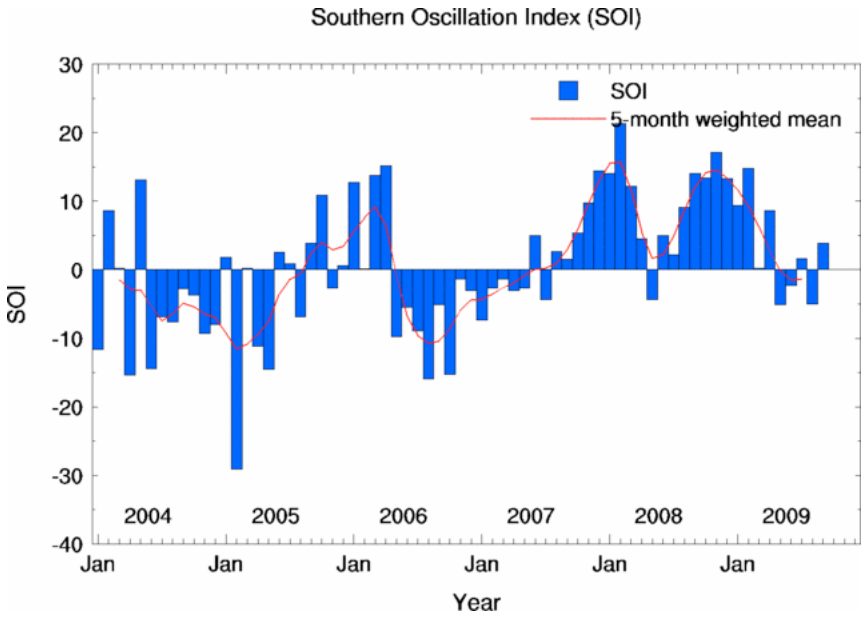


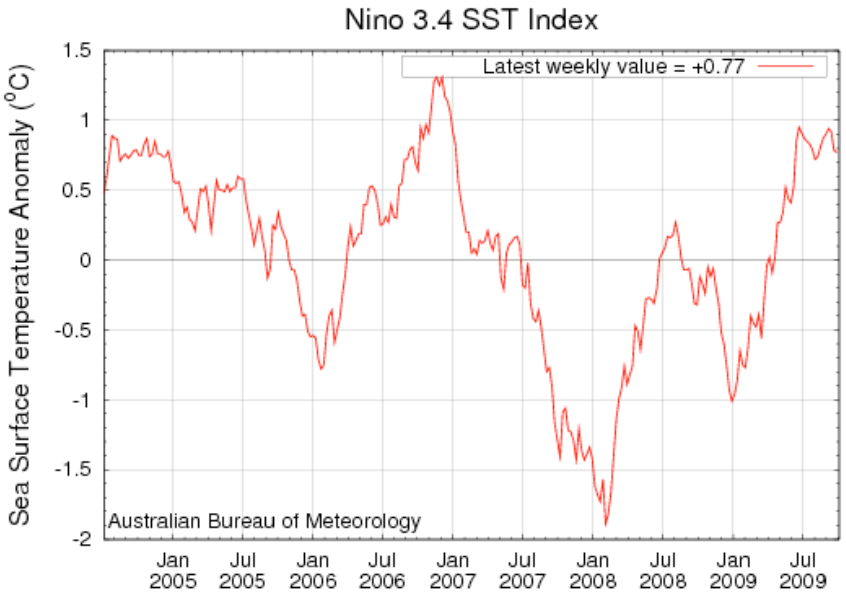
Note:

- The SEC still show an anomalous eastward flow in the western equatorial Pacific
- However, the westward flow in the central region of the equatorial pacific has strengthened.
- Strong inflow (but not anomalous) of oceanic water into the N-GBR (note that OSCAR currents are more accurate between 10N-10S)

http://www.oscar.noaa.gov/datadisplay/

ENSO index





Negative SOI = El Niño

Positive Nino 3.4 index= El Niño

Note:

- The Australian BOM Nino 3.4 index suggests an El Niño phase is developing. The NOAA SOI index shows close-to-average conditions.
- "A majority of the model forecasts for the Niño-3.4 SST index suggest that El Niño will reach at least moderate strength during the Northern Hemisphere fall (3-month Niño-3.4 SST index of +1.0°C or greater). Many model forecasts suggest a strong El Niño (3-month Niño-3.4 SST index in excess of +1.5°C) during the NH fall and winter, but in recent months some models, including the NCEP CFS, have over-predicted the degree of warming observed in the Niño-3.4 region. Based on the model forecasts, the seasonality of El Niño, and the continuation of westerly wind bursts, El Niño is expected to strengthen and most likely peak at moderate strength." (excerpt: **ENSO DIAGNOSTIC DISCUSSION issued by CLIMATE PREDICTION CENTER/NCEP/NWS)**