GBR environmental conditions report

March 2011

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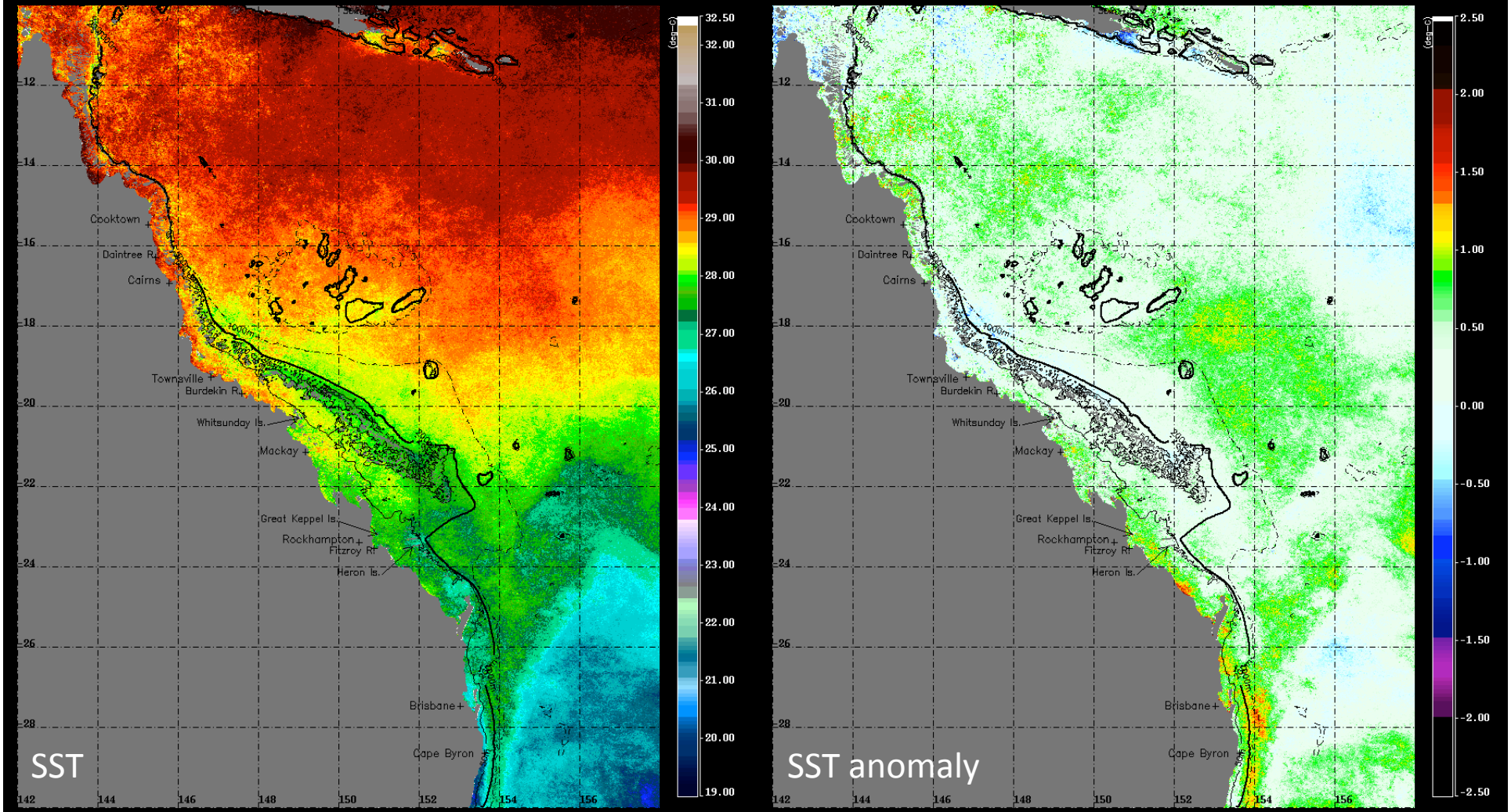
work supervised by Dr. Scarla Weeks

UQ OceanSpace Group

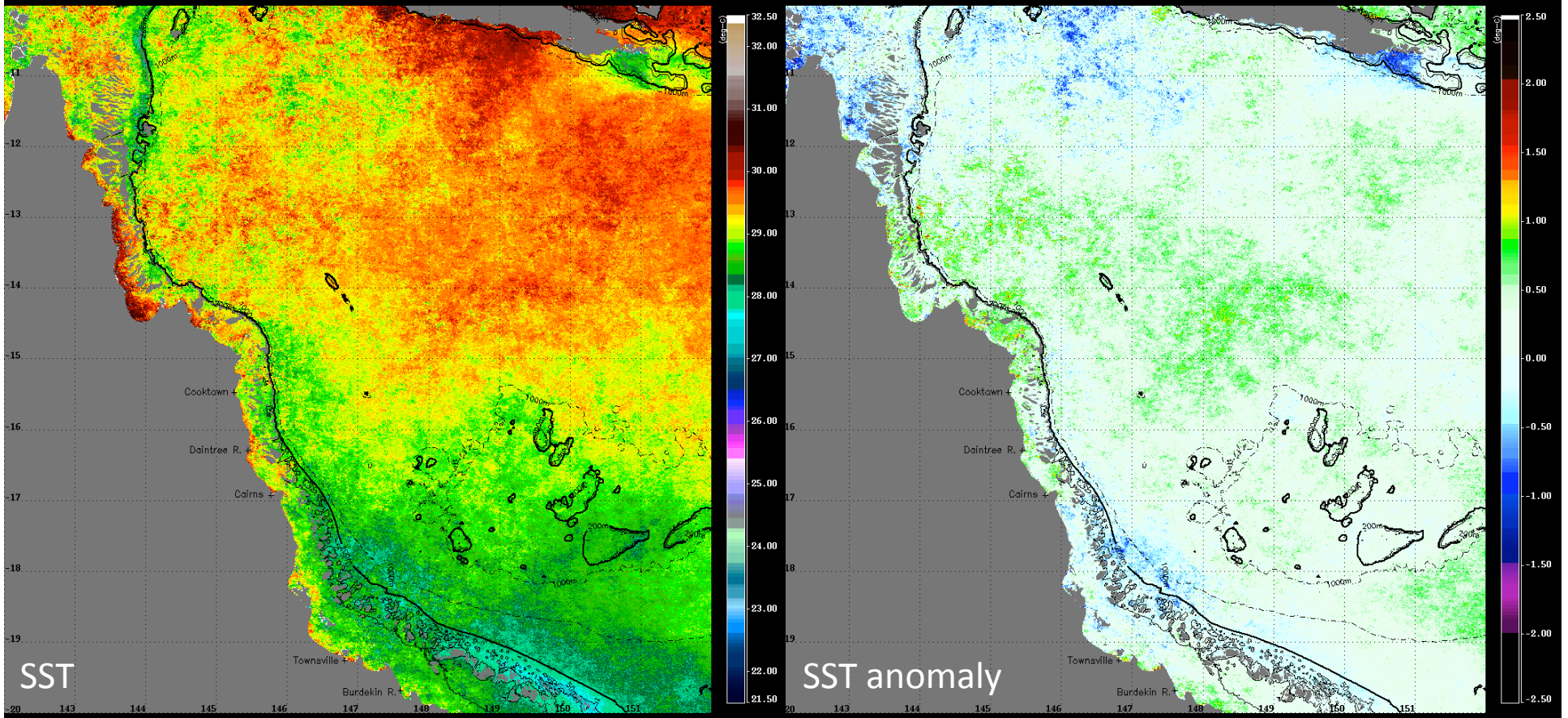
Modis SST (day+night): March 2011



Note:

- The negative anomalies associated with TC Yasi have dissipated, with mostly neutral conditions for the GBR.
- Strong EAC flow along the continental shelf strengthening south of the GBR

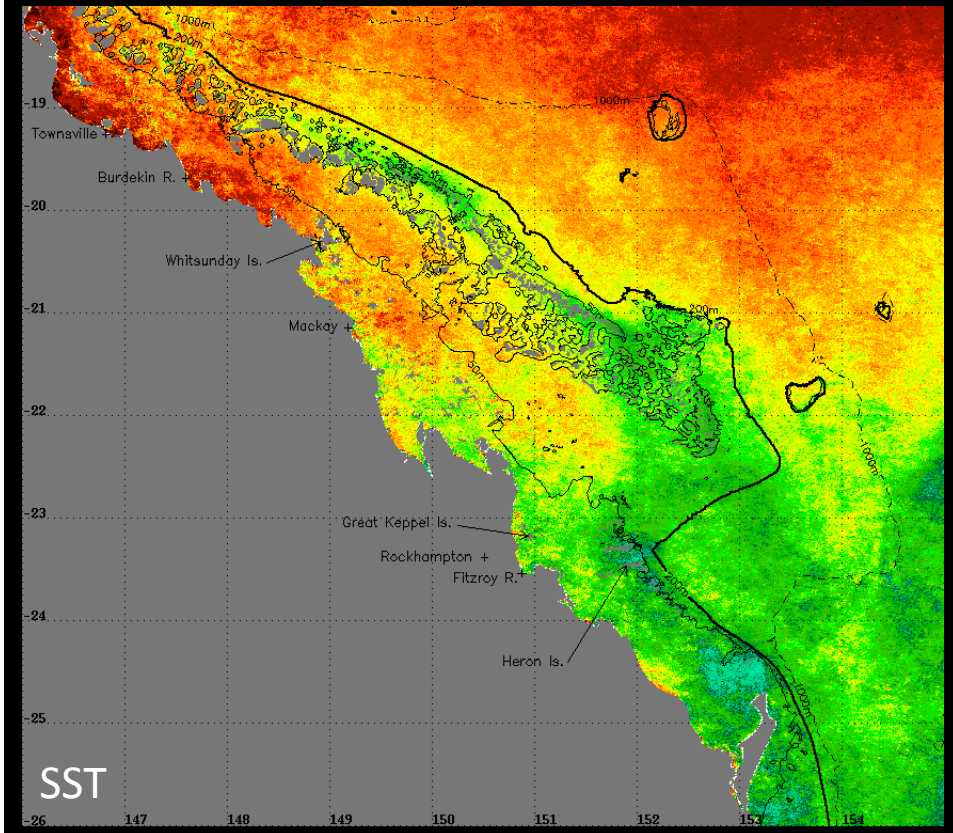
Northern GBR SST: March 2011

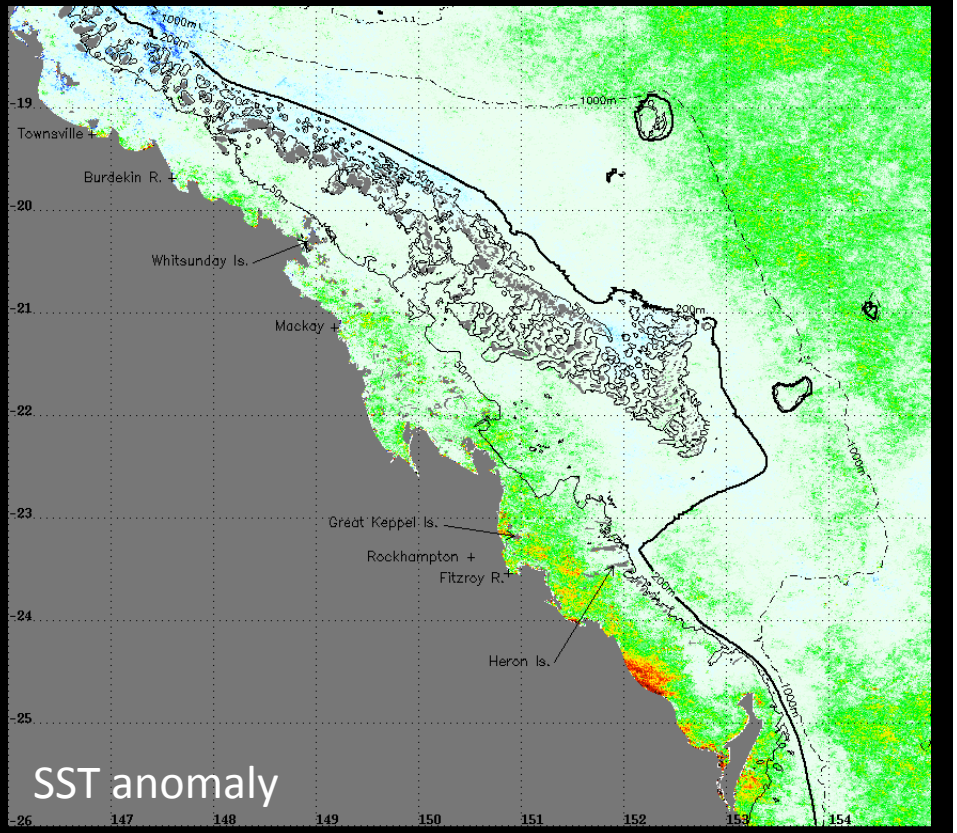


Note:

- Mostly average conditions were present in the Northern GBR during March

Southern GBR SST: March 2011

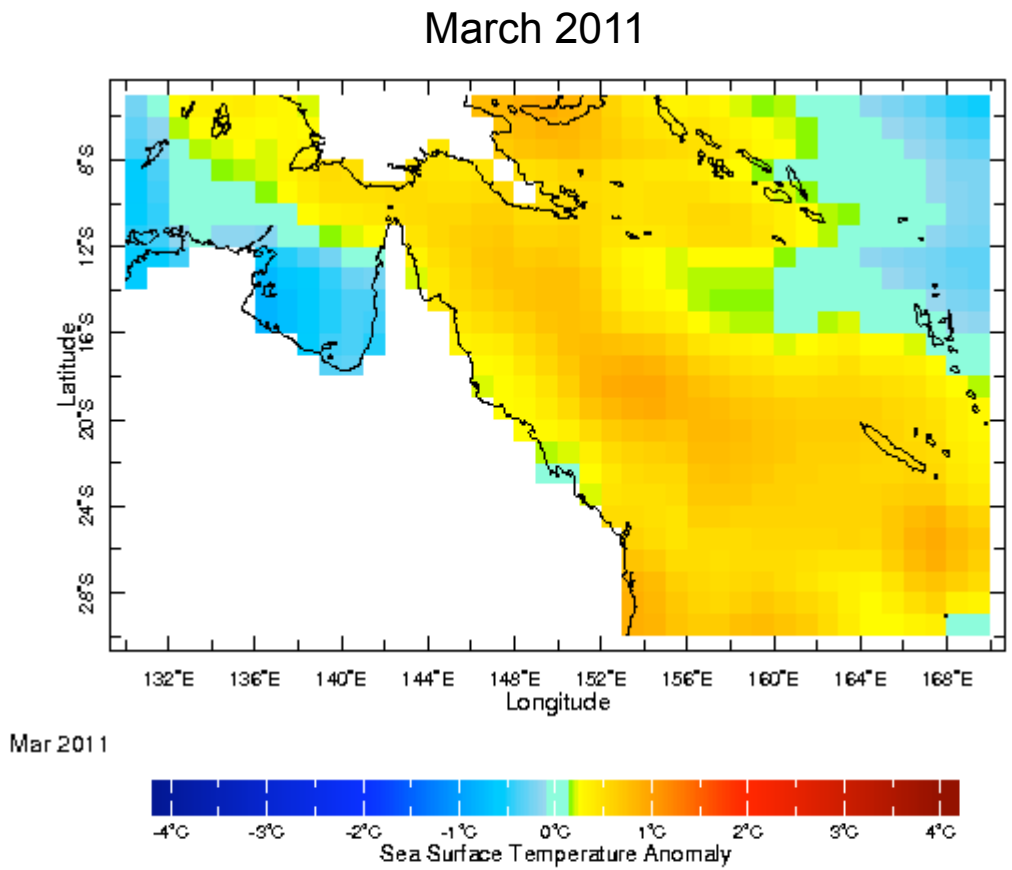




Note:

- The strong negative anomalies associated with TC Yasi have dissipated, leaving average conditions on the outer reefs of the S-GBR during March
- Weak positive anomalies are present along the coast south of ~22 deg S

NOAA NCEP EMC CMB GLOBAL Reyn_SmithOIv2 monthly SSTA: Sea Surface Temperature Anomaly data



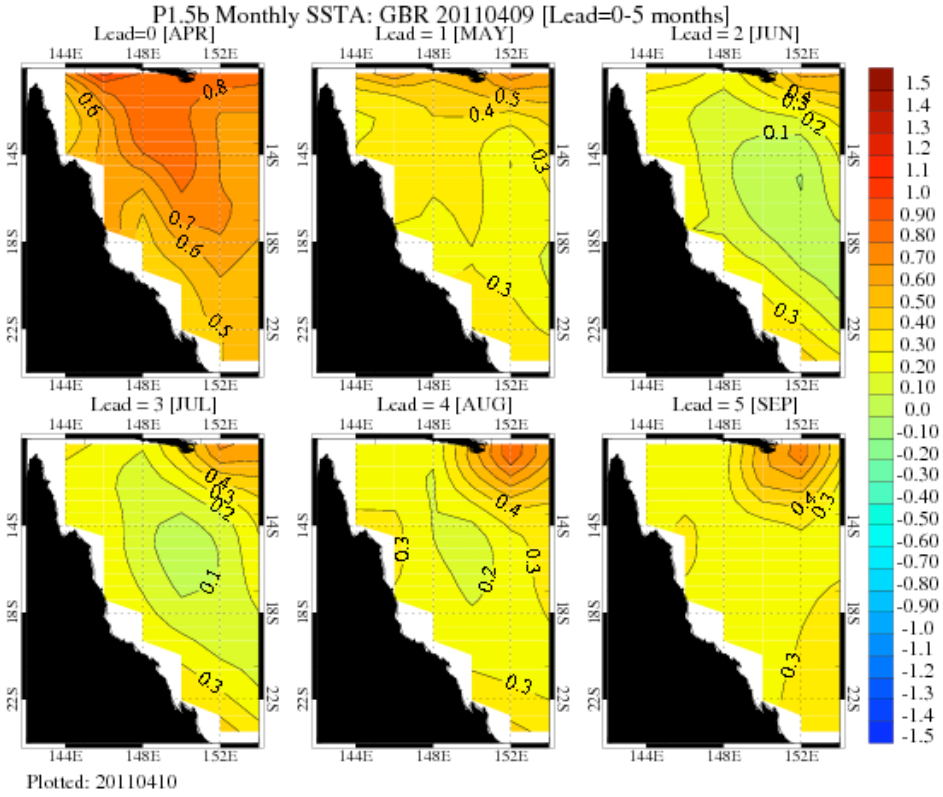
Note:

- Reynolds SST anomaly data shows a pattern of slightly positive anomalies along the length of the GBR.

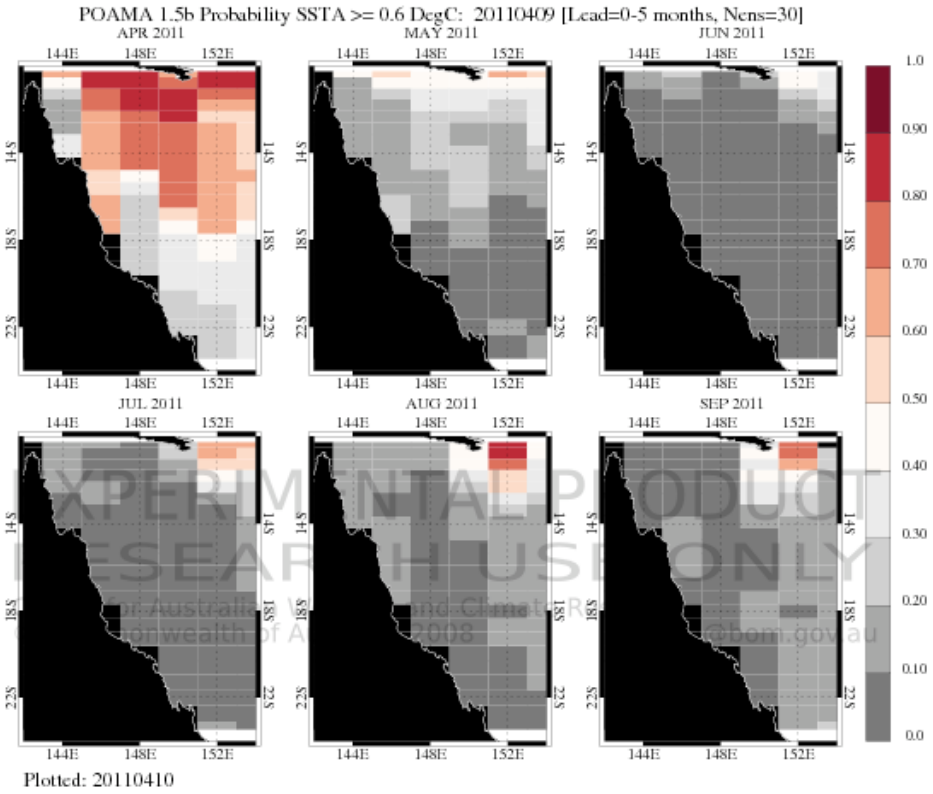
http://iridl.ldeo.columbia.edu/SOURCES/.NOAA/.NCEP/.EMC/.CMB/.GLOBAL/.Reyn_SmithOIv2/

Experimental Great Barrier Reef SST Anomaly Forecasts (POAMA)

POAMA SST anomalies forecast for the following 6 months.



New POAMA product highlighting the probability of SST anomalies greater than 0.6 deg C for the following 6 months.



Note:

- POAMA forecast is similar to the previous ones, with anomalies not expected to exceed 0.6 deg C in the following months. The exception being April, which is predicted to experience positive SST anomalies (up to 0.7deg C).

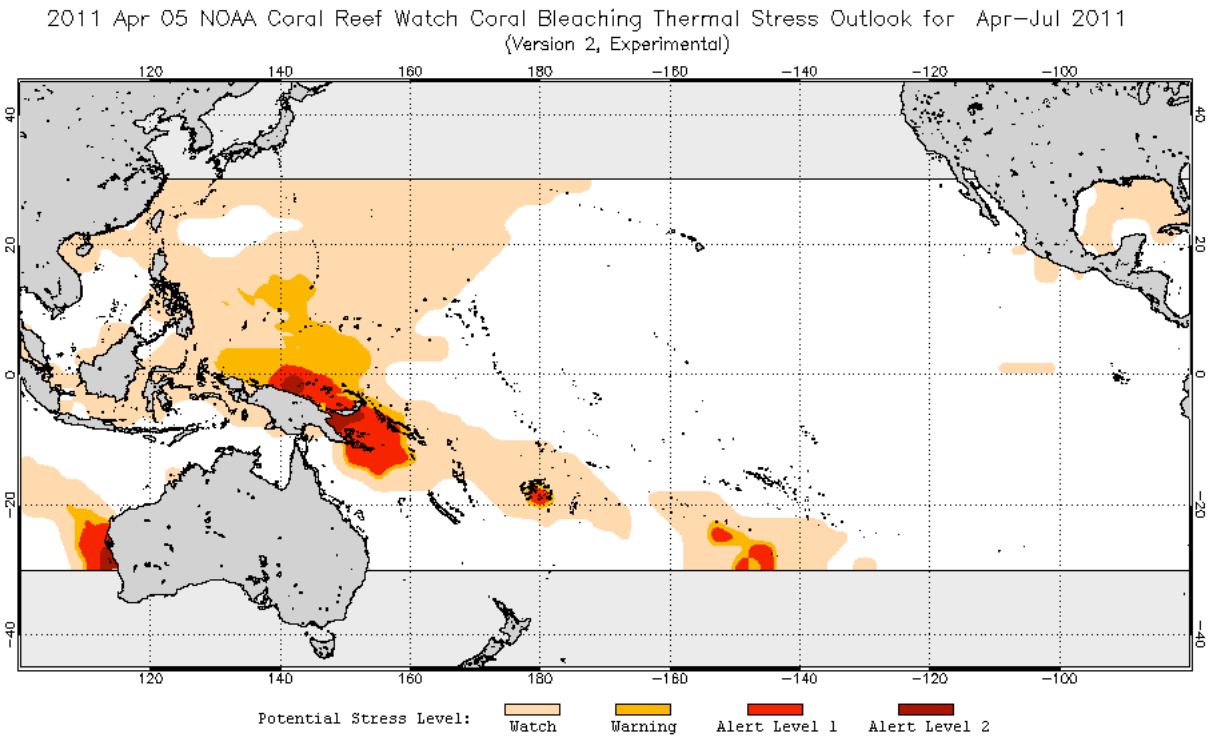
http://poama.bom.gov.au/experimental/poama15/sp_gbr.htm

NOAA Coral Reef Watch

Coral Bleaching Thermal Stress Outlook

(Version 2, experimental)

Outlook for April 2011 to July 2011



Note:

- As we head into winter, no bleaching is expected along the GBR.

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

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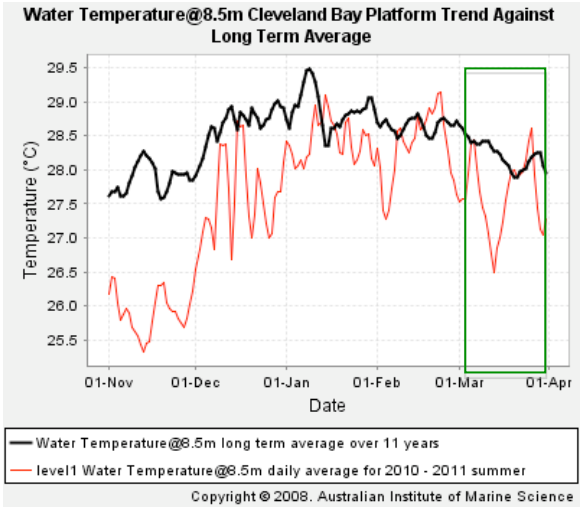
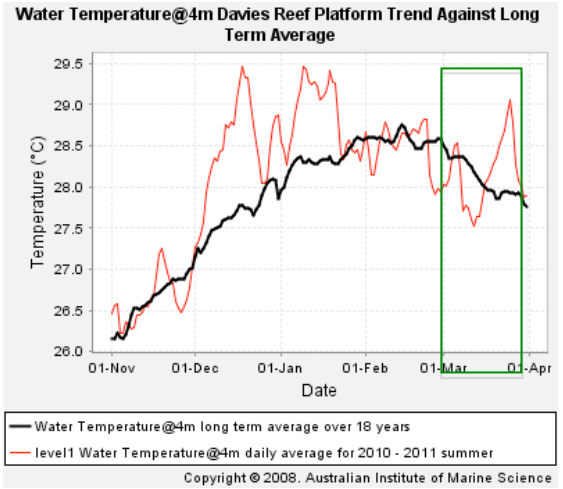
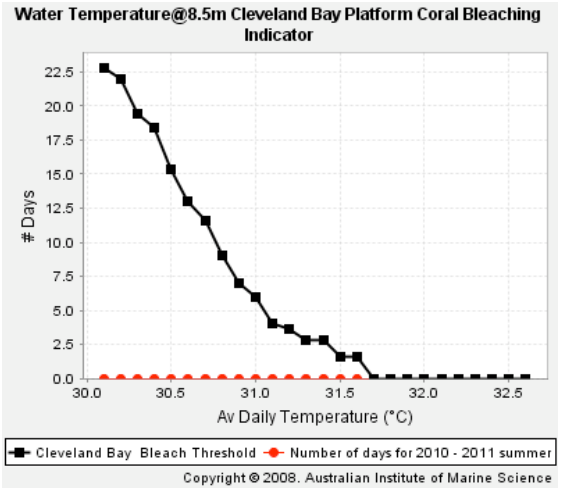
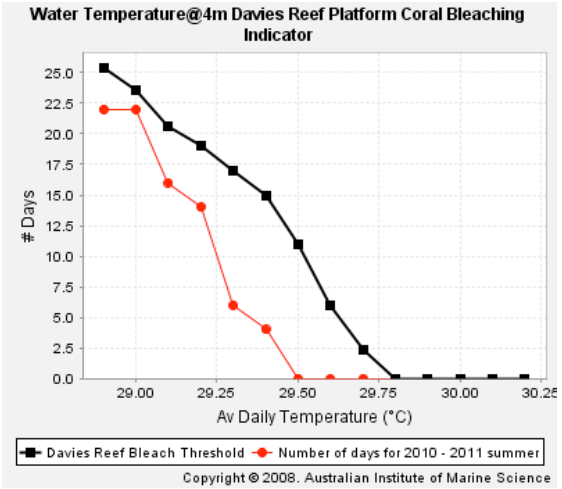
Weather Observing System: AIMS Data Centre









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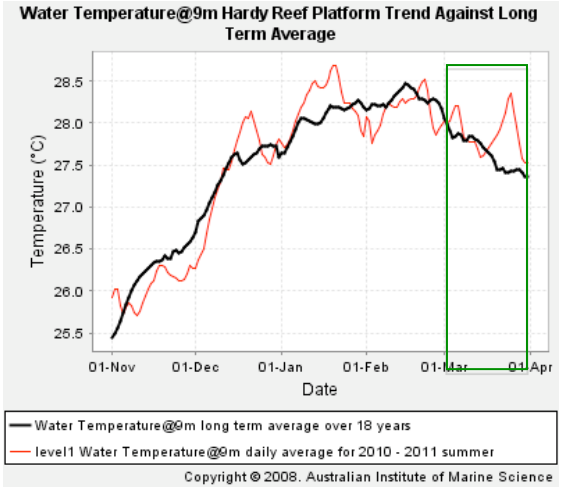
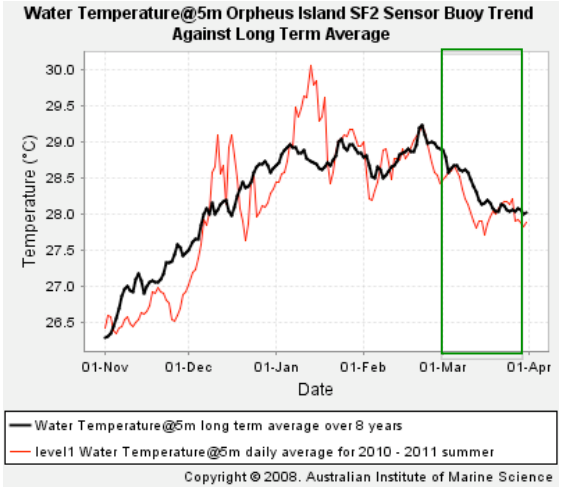
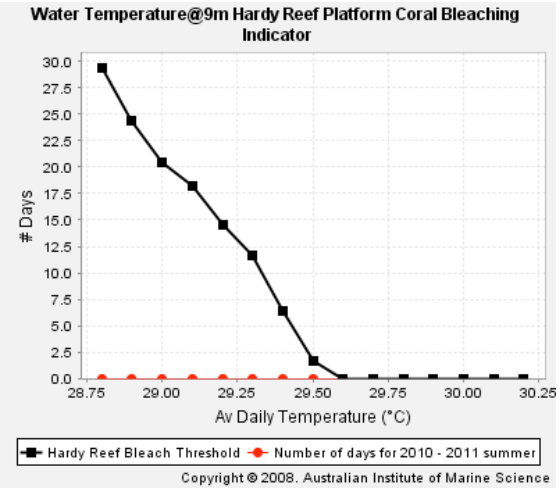
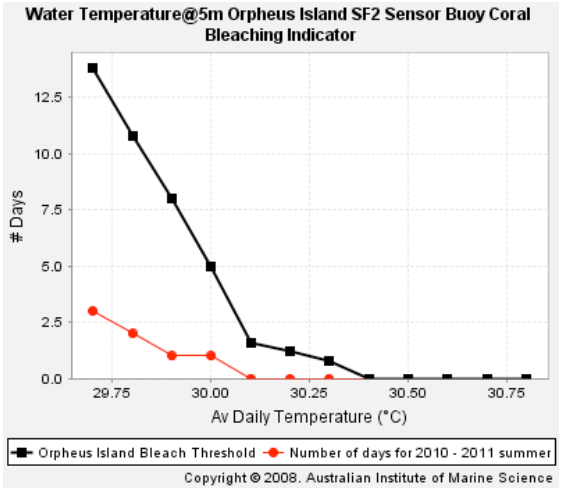




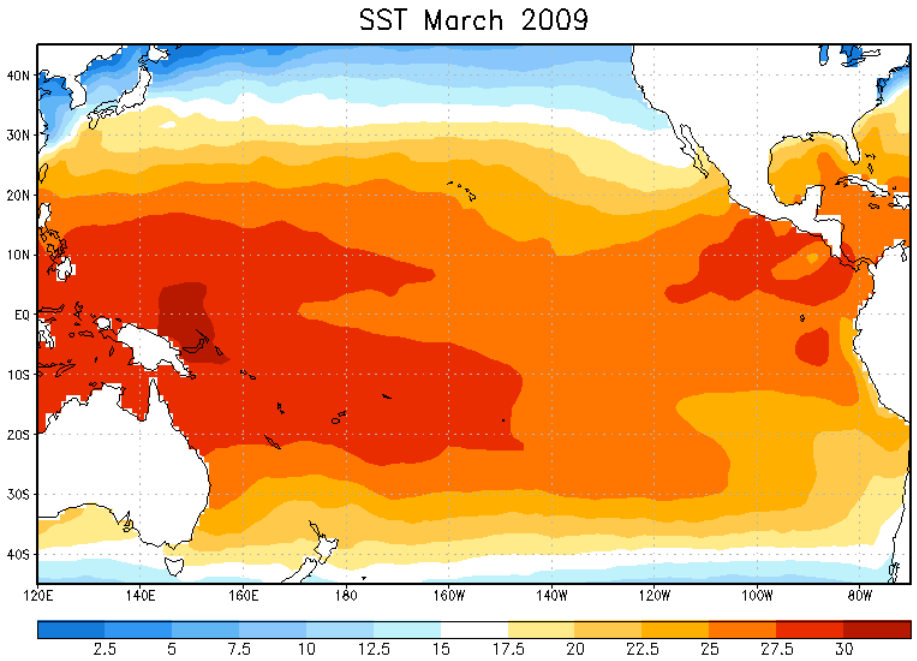




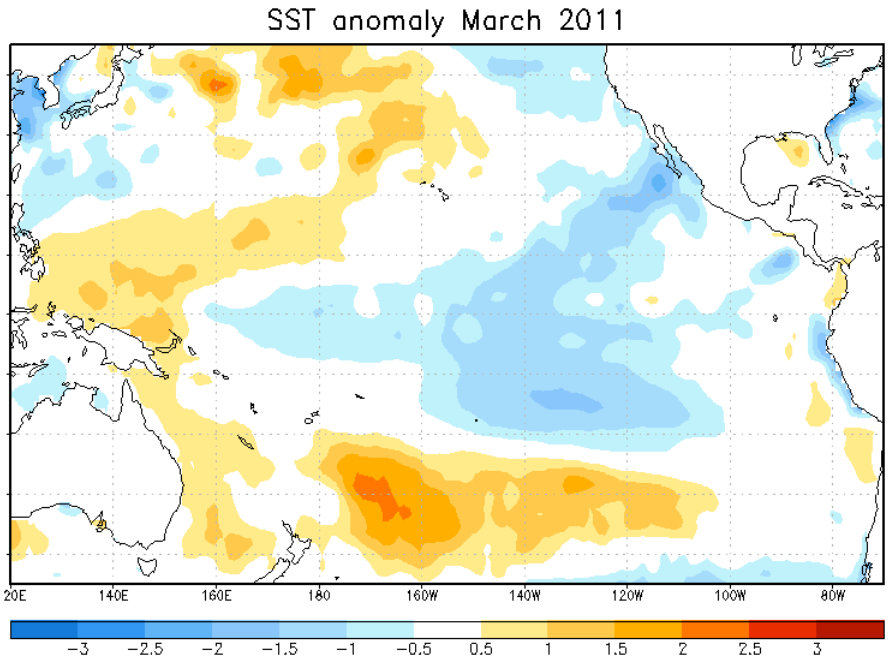
- AIMS in situ data shows that, even thought the monthly mean is close to average, Davies and Hardy Reefs presented a peak of temperatures above the long term mean at the end of the month.
- Inner reefs presented close to or below average conditions for March.

NOAA Optimum Interpolation Sea Surface Temperature Analysis:

OI SST: MARCH 2011



OI SST ANOMALY: MARCH 2011



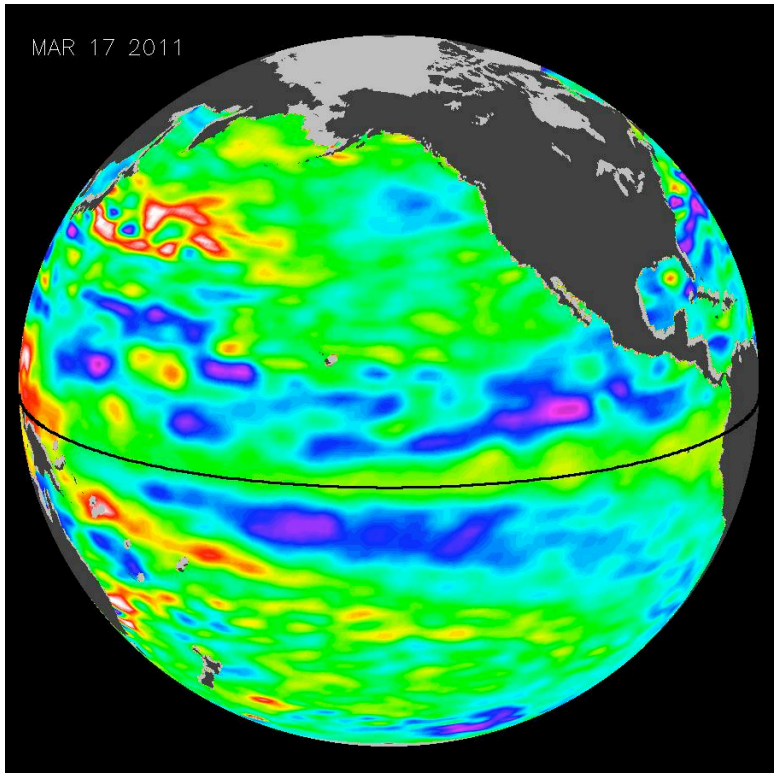
Note:

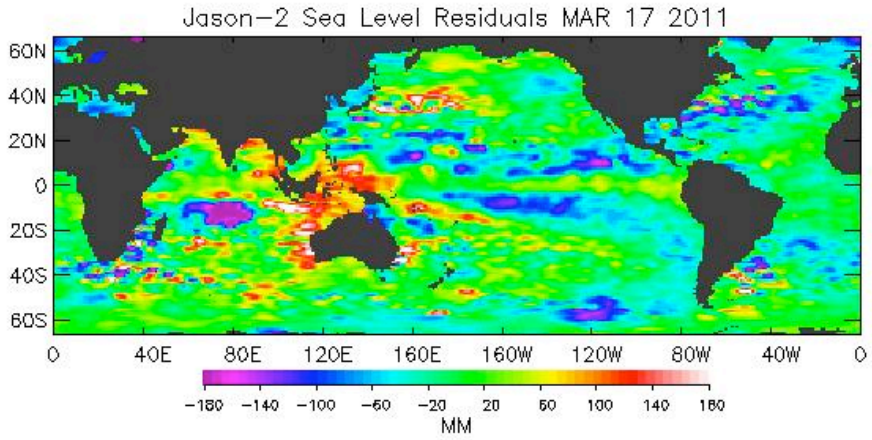
- SSTs still above average in the western equatorial Pacific and below average across the central Pacific, although the magnitude of the anomalies is decreasing, associated with the weakening La Niña phase of ENSO.

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 17 MARCH, 2011.





Note:

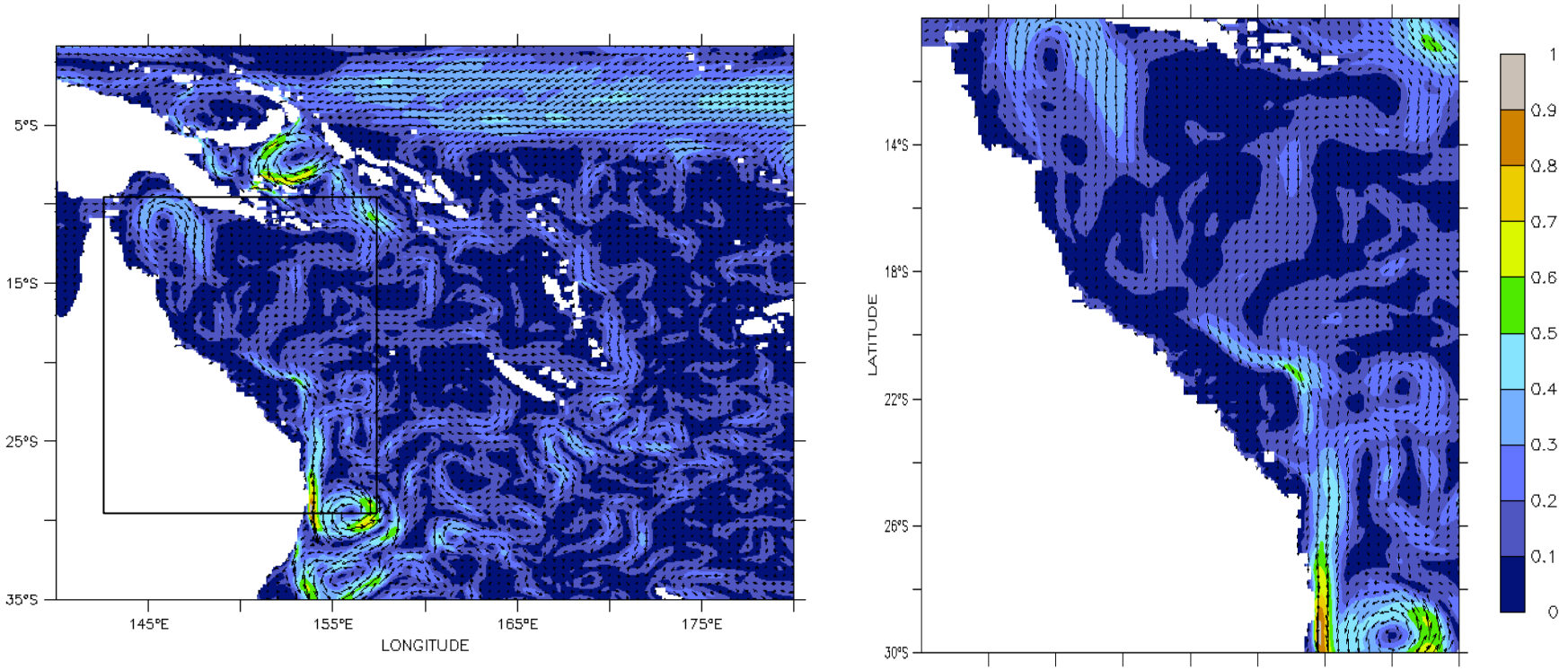
- Coincident with the SST anomalies along the equatorial pacific, the SSH anomalies have decreased, indicating a weakening la Niña.

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

OceanMAPS 15m Depth-Average Currents

MARCH 2011

OceanMAPS Ocean Modeling, Analysis and Prediction System was developed at CSIRO Marine and Atmospheric Research and the Bureau of Meteorology, is part of the **Bluelink** project and produces routine forecast of ocean conditions around Australia.



Behind Real Time analysis
15 m Depth-Averaged Currents (m/s).

Note:

- The southward EAC flowing along the continental shelf is apparent south of ~20S, with the presence of Capricorn Bunker eddy in the lee of the GBR bathymetry.
- EAC flow shows increasing intensity south of the GBR

http://godae.bom.gov.au/oceanmaps_analysis/ocean_diag_brt/ocean_diag.shtml

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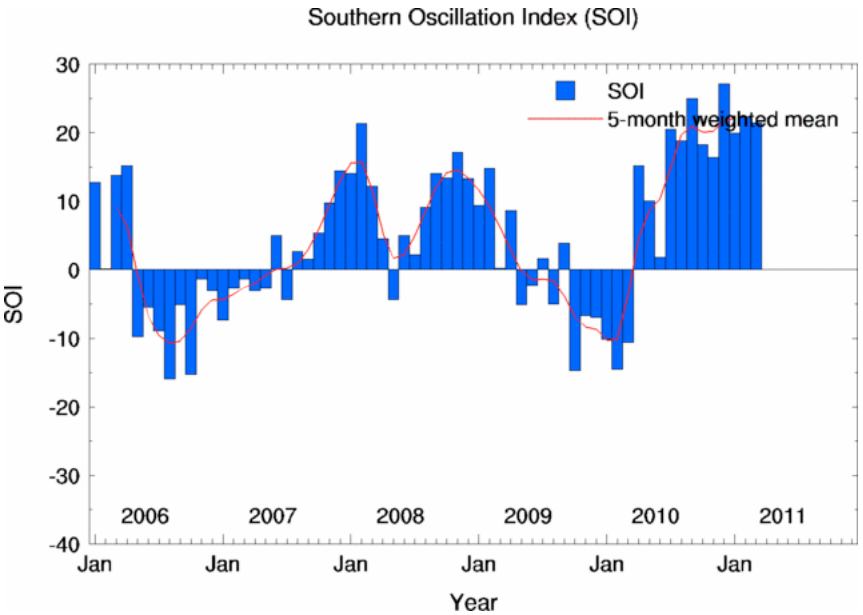
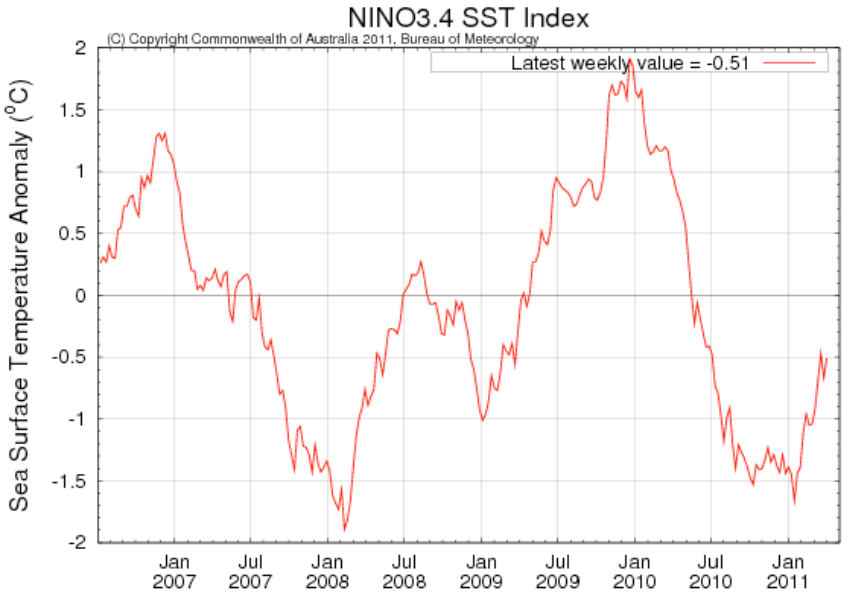
ENSO index





Positive SOI = La Niña

Negative Nino 3.4 index= La Niña

Note:

- SOI and Nino3.4 SST indices show that La Niña is still present across the equatorial Pacific, but continues to weaken.
- The majority of the ENSO models indicate that La Niña will continue weakening till ~June, neutral conditions will return.