

NERP

Torres Strait / GBR environmental conditions report:

Recent status and predictions

10 February 2012

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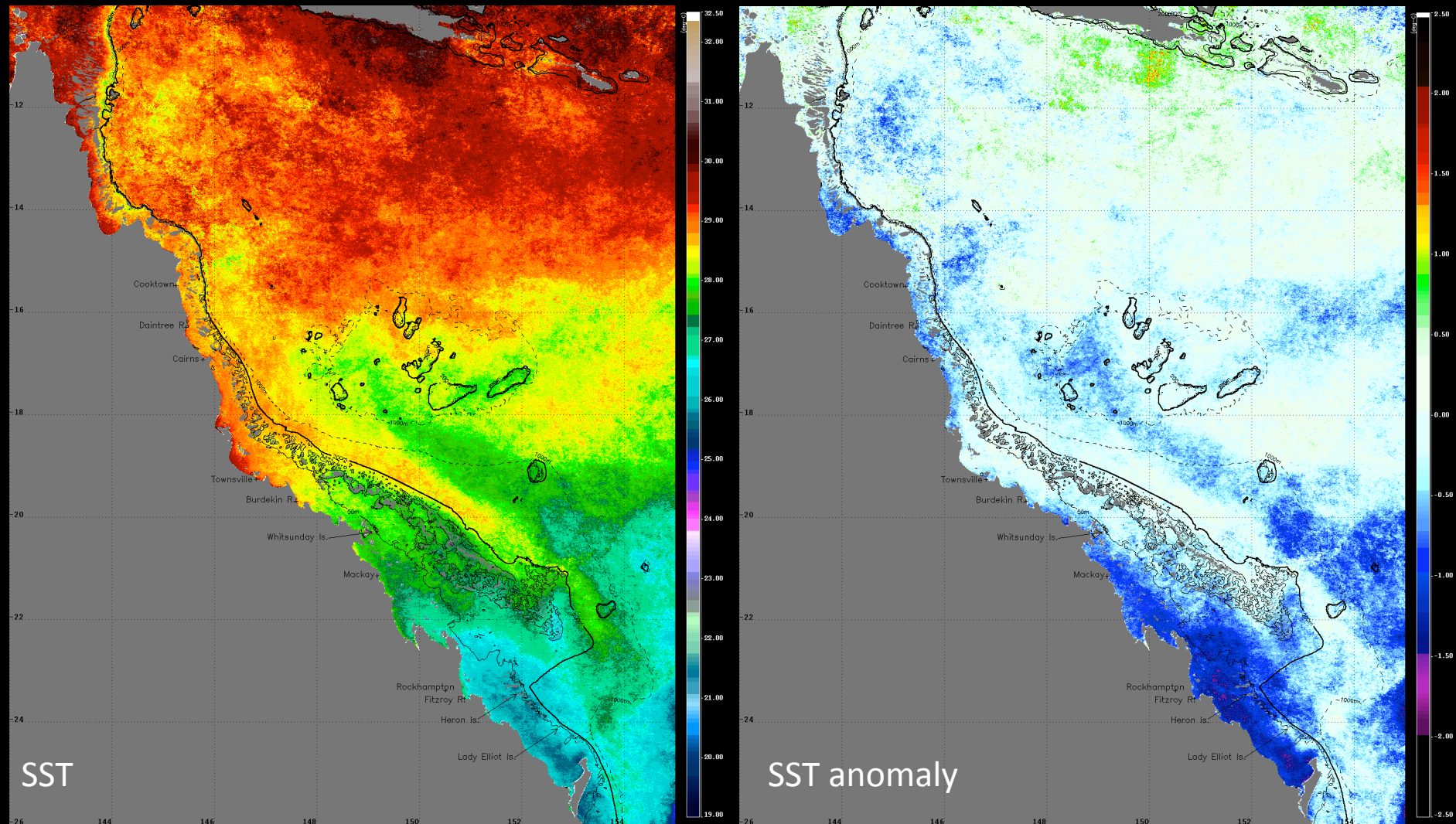
Outline

- Overview
- Recent SST and in situ Temperature evolution
- GBR SST forecast (POAMA)
- Coral Bleaching Outlook (NOAA:CRW)
- Surface conditions in the tropical Pacific
- ENSO evolution and predictions

Overview

- Strong negative SST present on the southern GBR reefs
- Forecast of negative SST anomalies along the GBR and Torres Strait area for the upcoming months.
- No bleaching alert for most of the GBR, but with alert level 1 to 2 around the PNG reefs.
- La Niña continued in the Pacific but is expected to weaken in the following months.

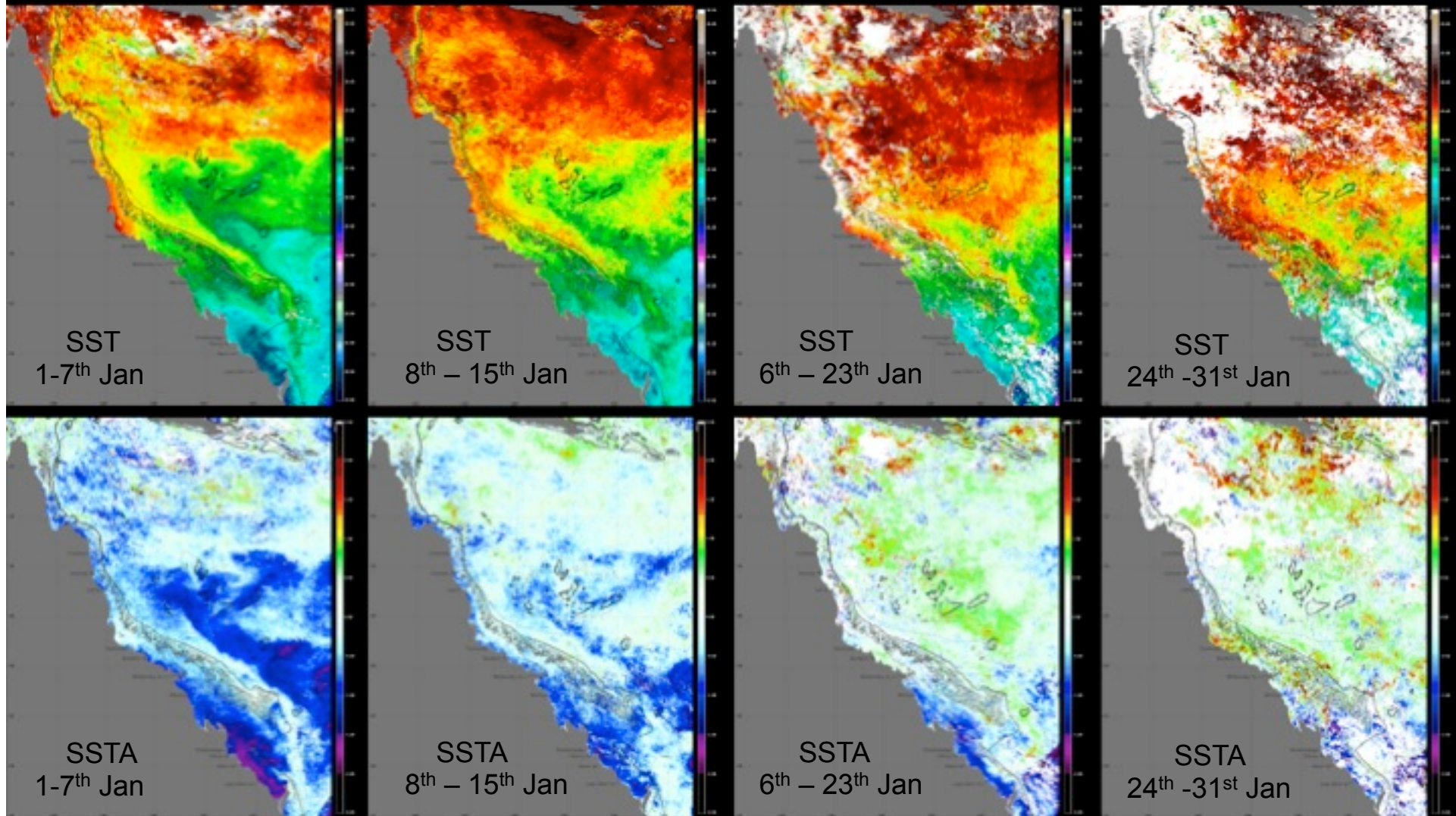
Modis SST (day+night): January 2012



Note:

- Below average temperatures for most of the GBR.
- Pronounced negative anomalies in the Capricorn Bunker area (inshore mostly)
- Due to cloud contamination, the monthly mean is not indicative of average conditions for the full month, especially north of ~20S, and caution should be applied in interpretation of the monthly anomalies.

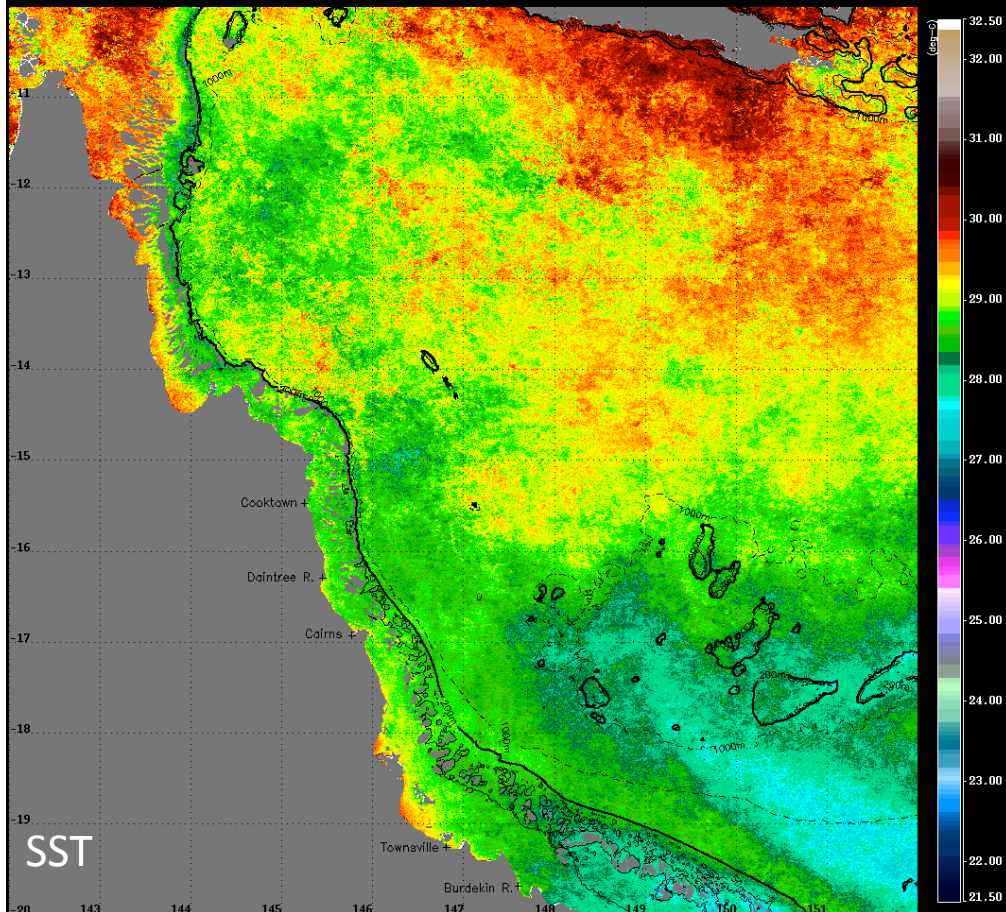
Modis SST weekly means: January 2012



Note:

- Notable cloud contamination during January, especially during the last two weeks – caution in interpretation of imagery during this period especially north of ~20S, where only an average of 5 days per pixel are included in the monthly mean
- South of 20S the monthly mean is primarily indicative of the conditions for the first two weeks.

Torres Strait / northern GBR MODIS SST: January 2012

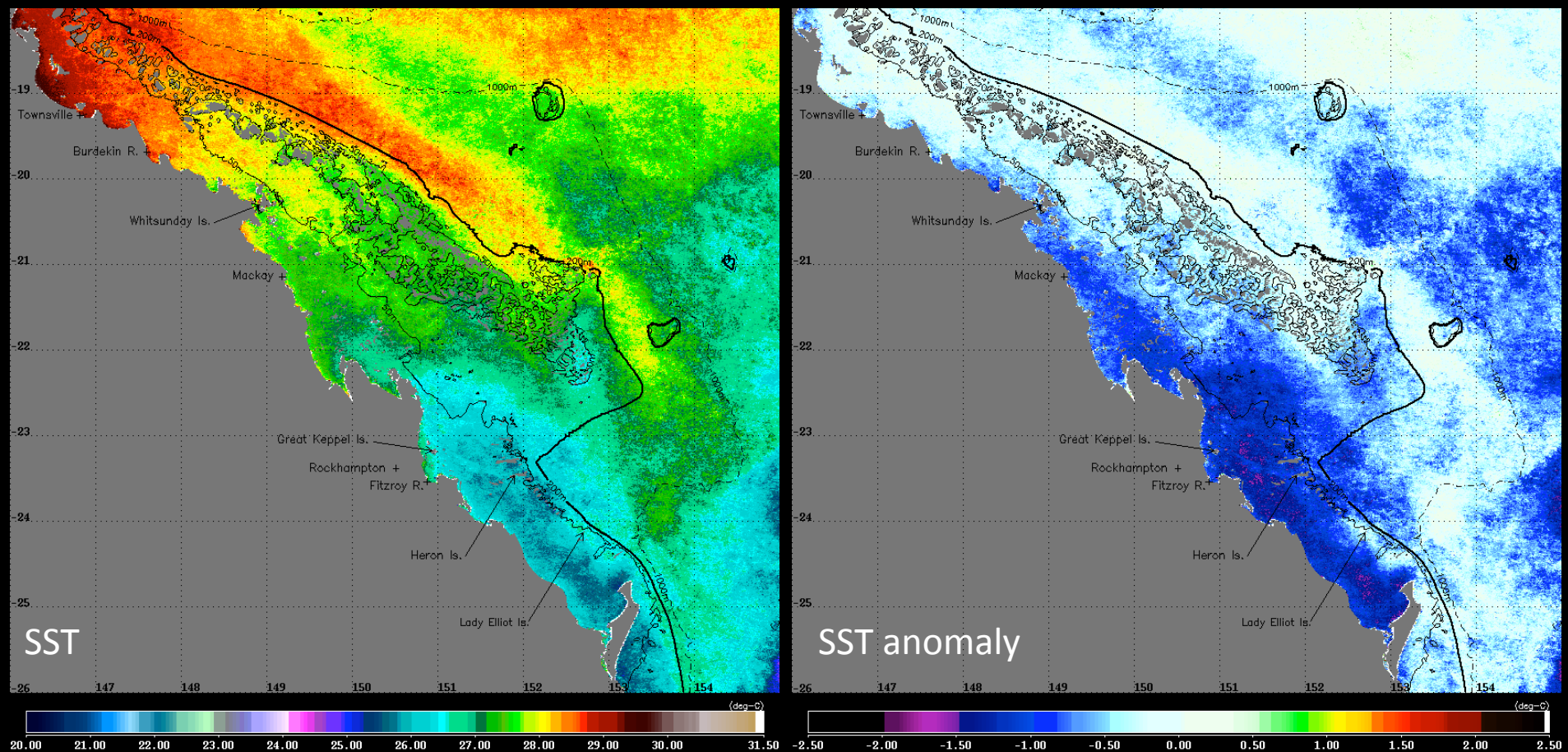


Note:

(SST scale adjusted for N-GBR)

- Notable cloud contamination on the N-GBR during the last weeks of January, masking the values of accurate SST anomalies, hence anomaly image not included

Southern GBR MODIS SST: January 2012

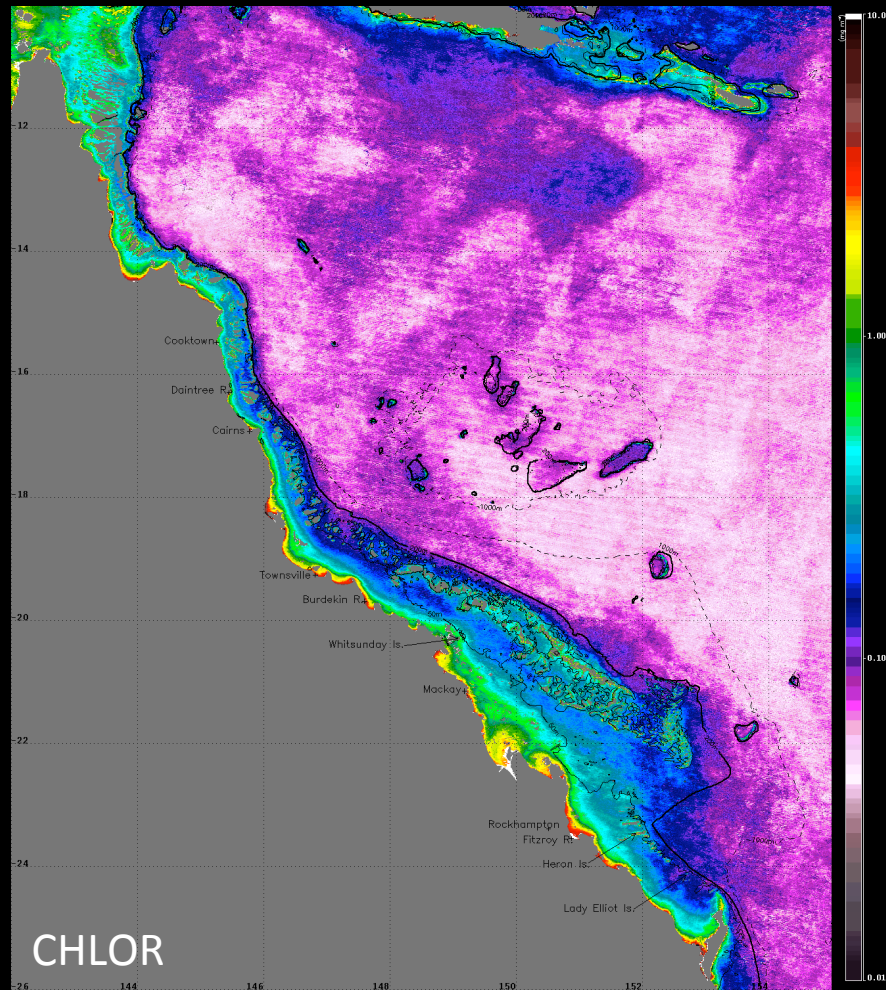


Note:

(SST scale adjusted for S-GBR)

- Strong negative anomalies present for most of the inshore reefs on the southern GBR.
- The strong southward-flow of the warm EAC limiting the offshore extent of the negative anomalies.

MODIS Chlorophyll-*a* concentration: January 2012

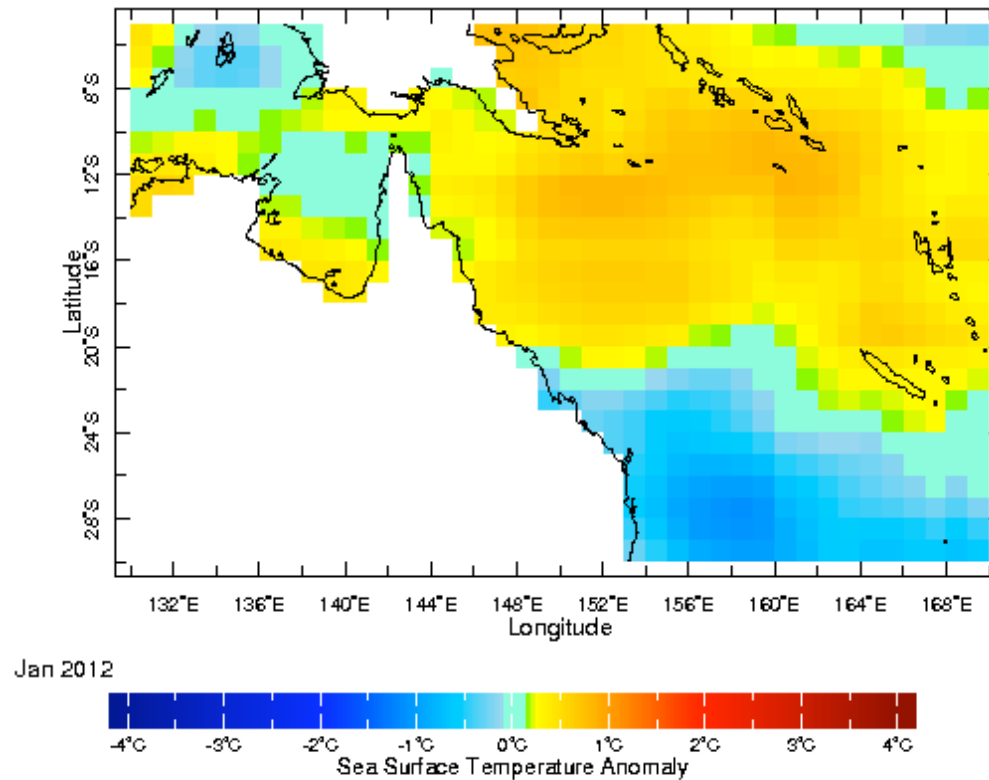


Note:

- As for SST, chlorophyll data severely impacted by cloud contamination, especially during 2nd half of January. Hence, anomaly image not included as not a true representative of the month.

NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2 monthly SSTA: Sea Surface Temperature Anomaly data

January 2012



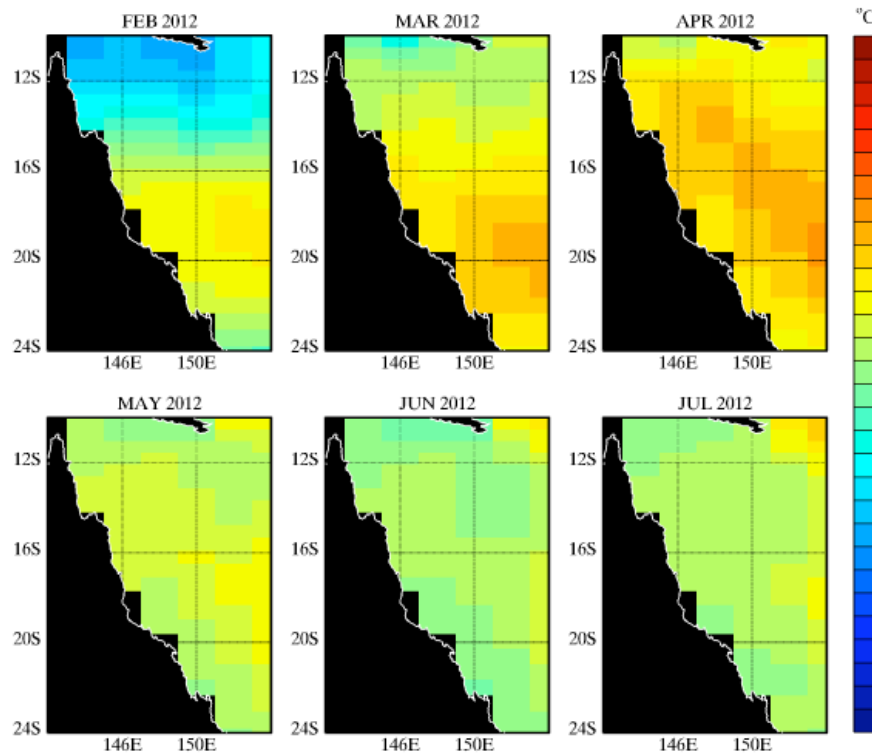
Note:

- Coincident with the MODIS SST, an area of negative anomalies was centered around 30S, in contrast with the positive anomalies north of ~20S.

Great Barrier Reef SST Anomaly Forecast (POAMA-2)

POAMA SST anomaly forecast for the next 6 months
(Operational)

P2.4abc Monthly SSTA: GBR 20120201 [Lead=0-5 months, Nens=30]

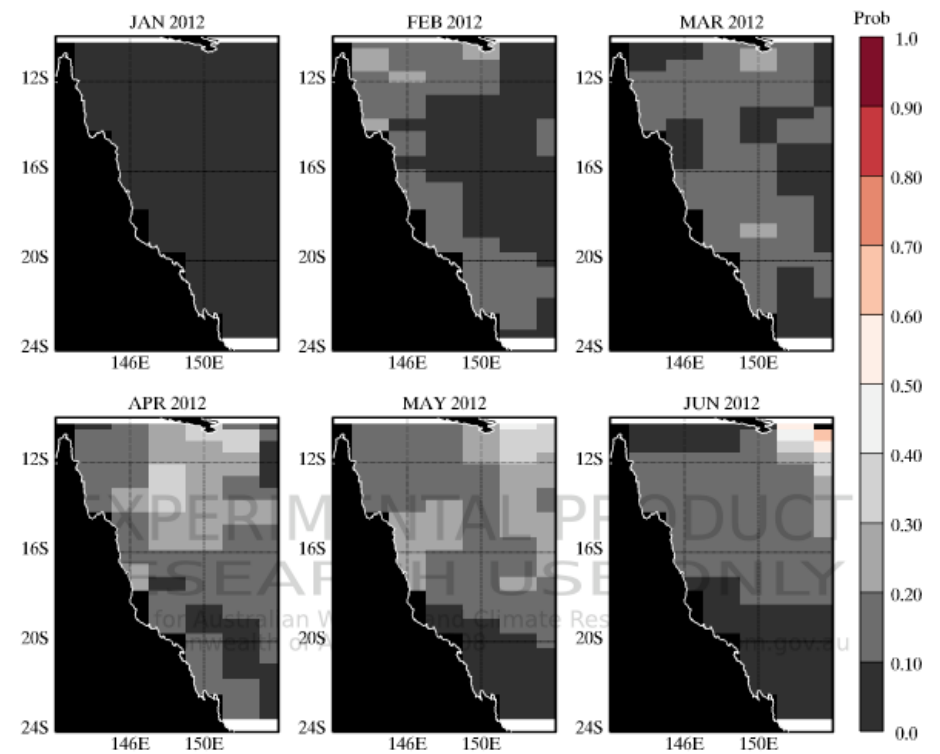


Plotted: 20120203

Operational Product: IDYOC046

Probabilities of SST anomalies greater than 0.6°C for the
next 6 months (Experimental)

POAMA 2.4abc Probability SSTA ≥ 0.6 °C: 20120101 [Lead=0-5 months, Nens=30]



Plotted: 20120104

Note:

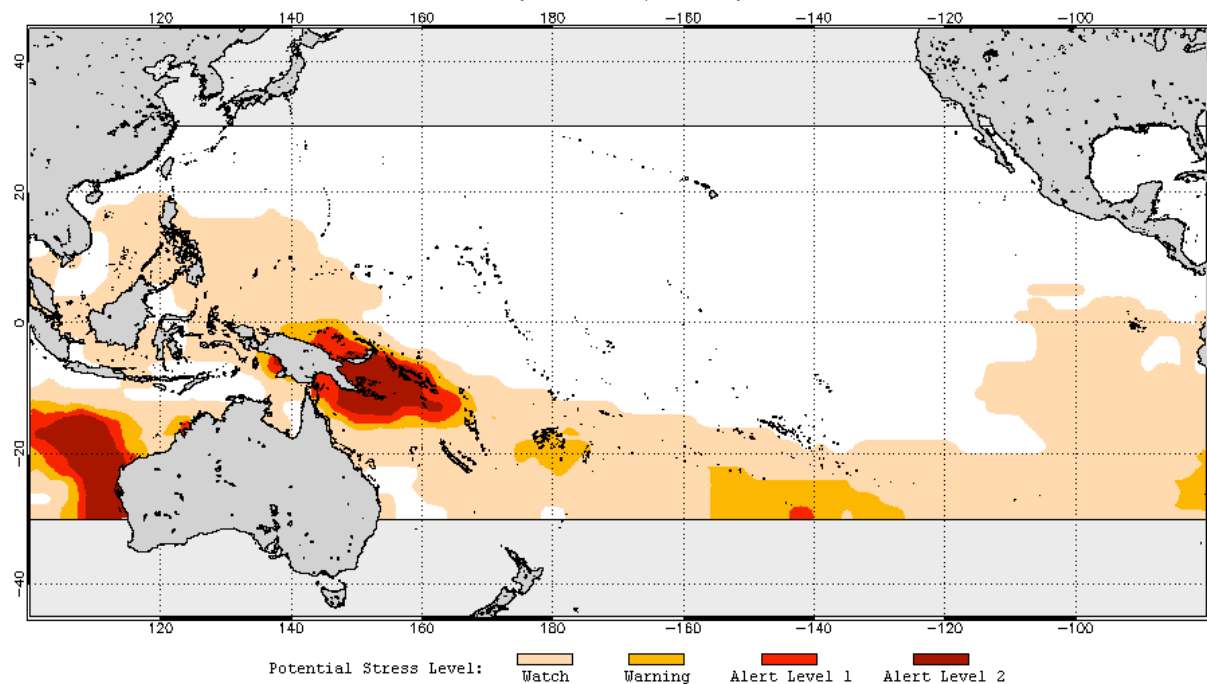
- Forecast of SST anomalies for the upcoming months shows SST close to or below averaged for the rest of the summer months.

NOAA Coral Reef Watch

Coral Bleaching Thermal Stress Outlook (Version 2, experimental)

Outlook for February 2012 to May 2012

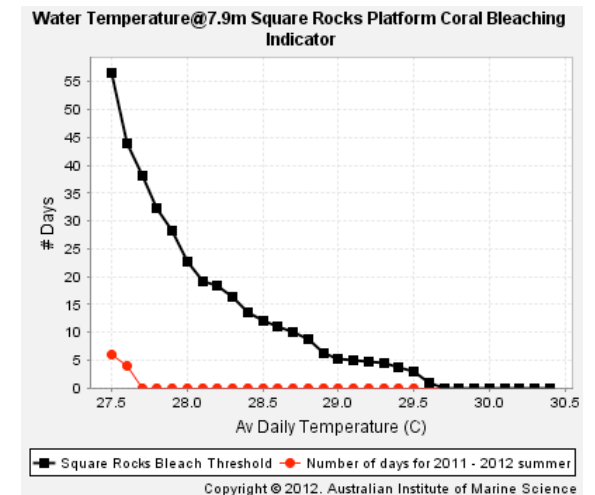
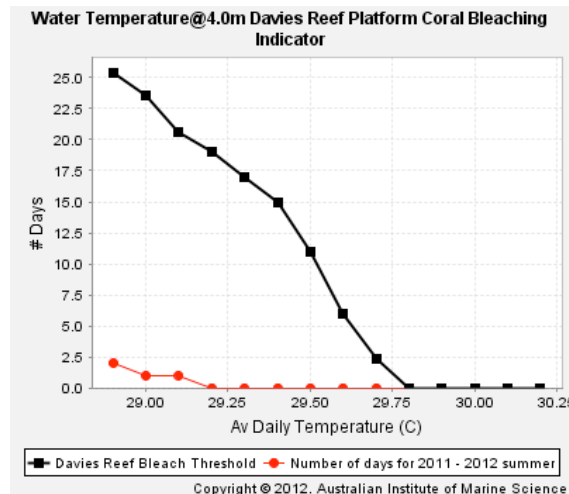
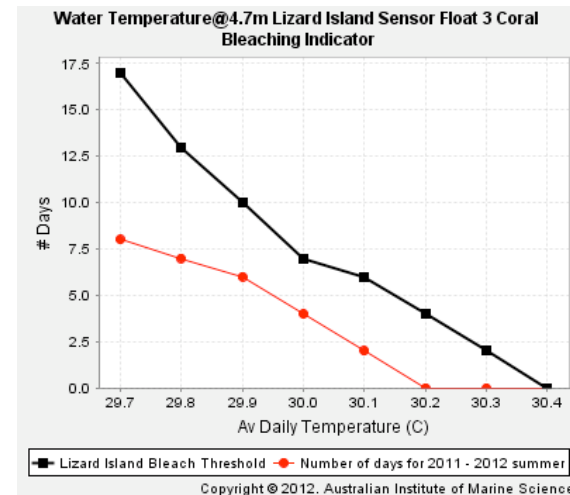
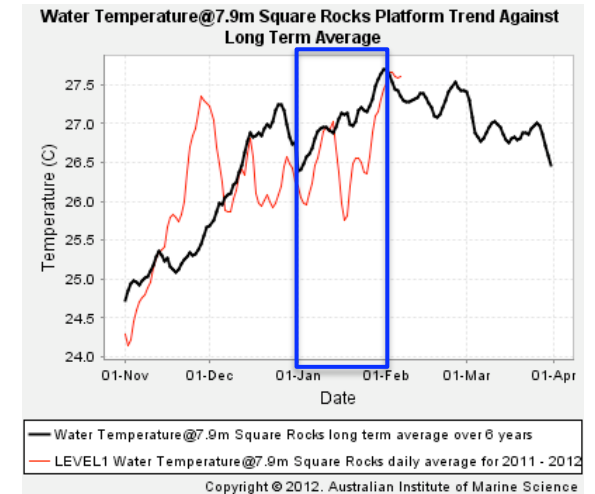
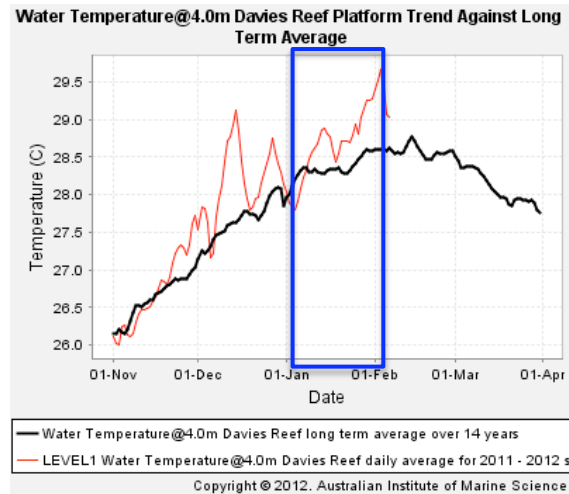
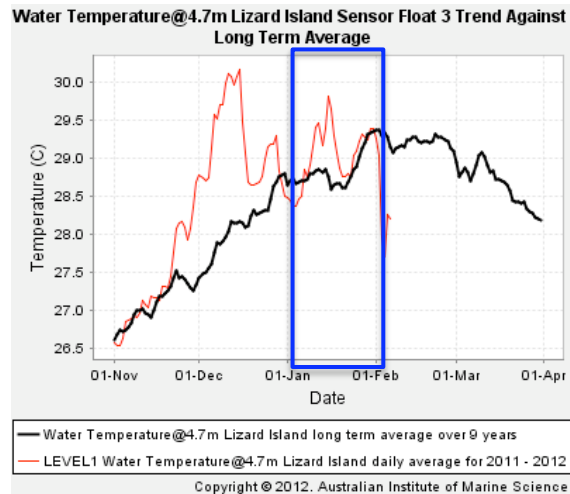
2012 Jan 31 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Feb–May 2012
(Version 2, Experimental)



Note:

- Similar to previous month, NOAA thermal Stress Outlook suggests 'Watch' for potential thermal stress outlook till May 2012.
- Alert levels continue around Torres Strait and PNG reefs.

Weather Observing System: AIMS Data Centre

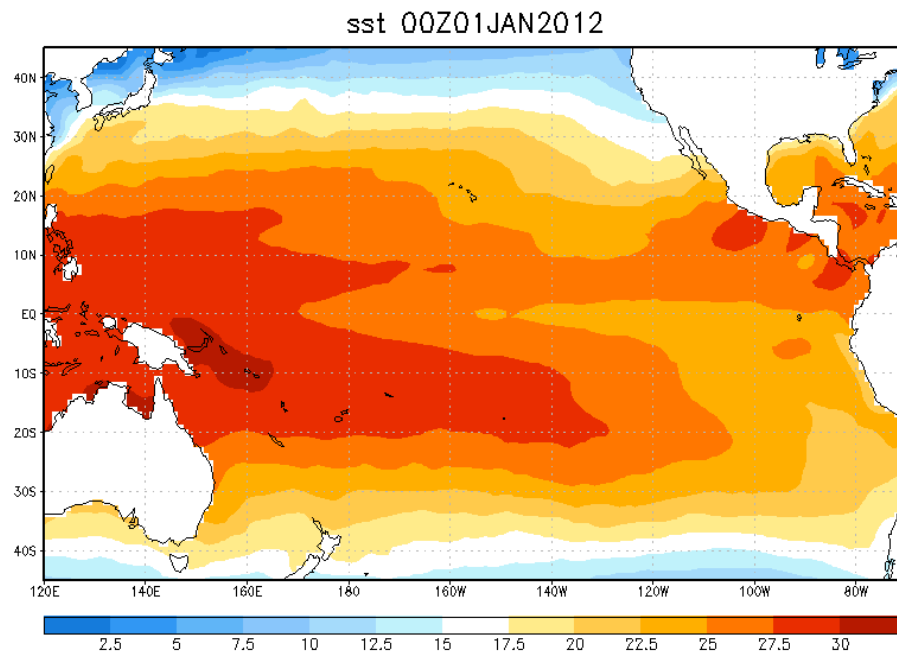


Note:

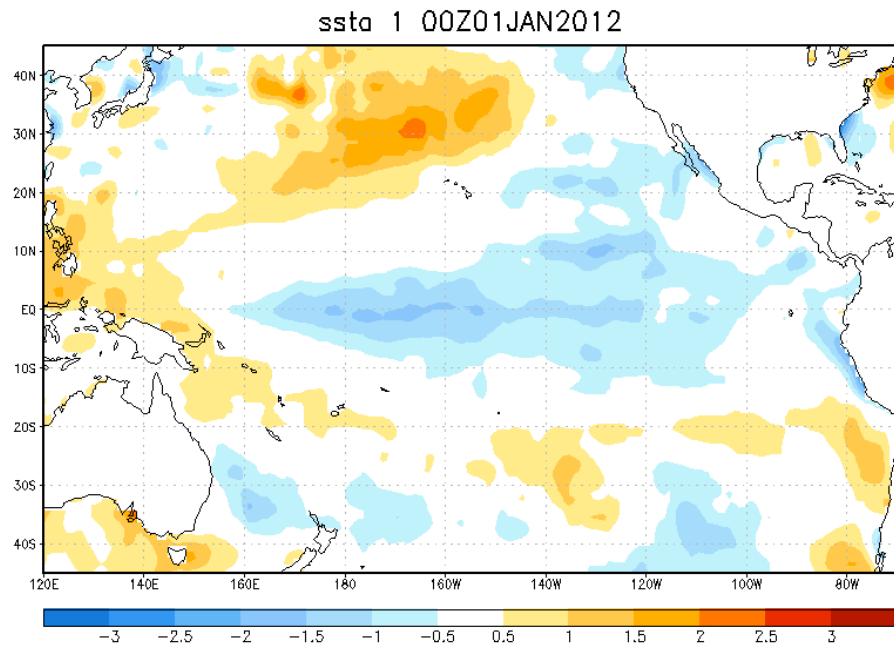
- In agreement with satellite SST anomalies, in situ temperatures for reefs located on the southern GBR stayed below the long-term mean for January
- For the central and northern GBR reefs, in situ data shows temperatures above average (when MODIS data impacted by cloud contamination)

NOAA Optimum Interpolation Sea Surface Temperature Analysis:

OI SST: JANUARY 2012



OI SST ANOMALY: JANUARY 2012

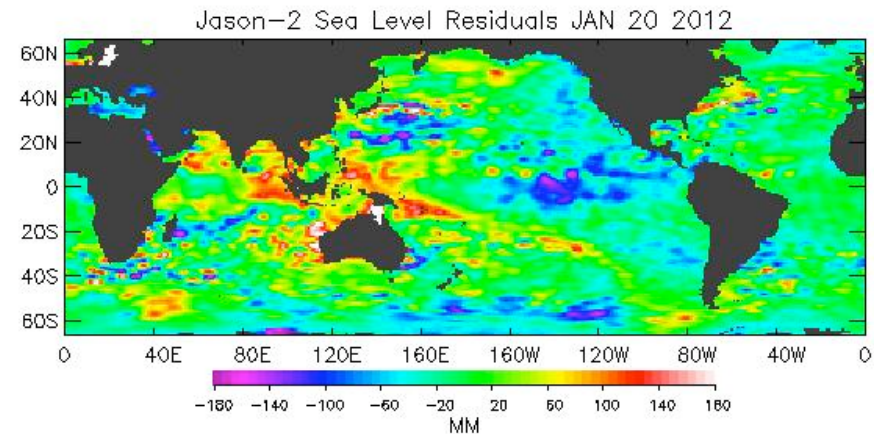
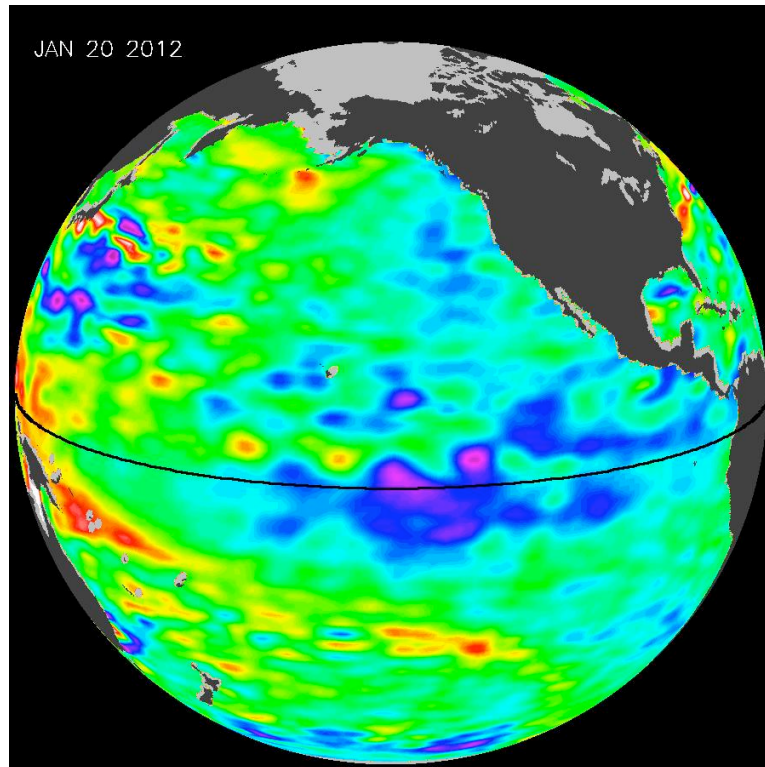


Note:

- Negative SST anomalies persisted across much of the equatorial Pacific. However the negative anomalies on the the far eastern equatorial Pacific weakened during January.

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

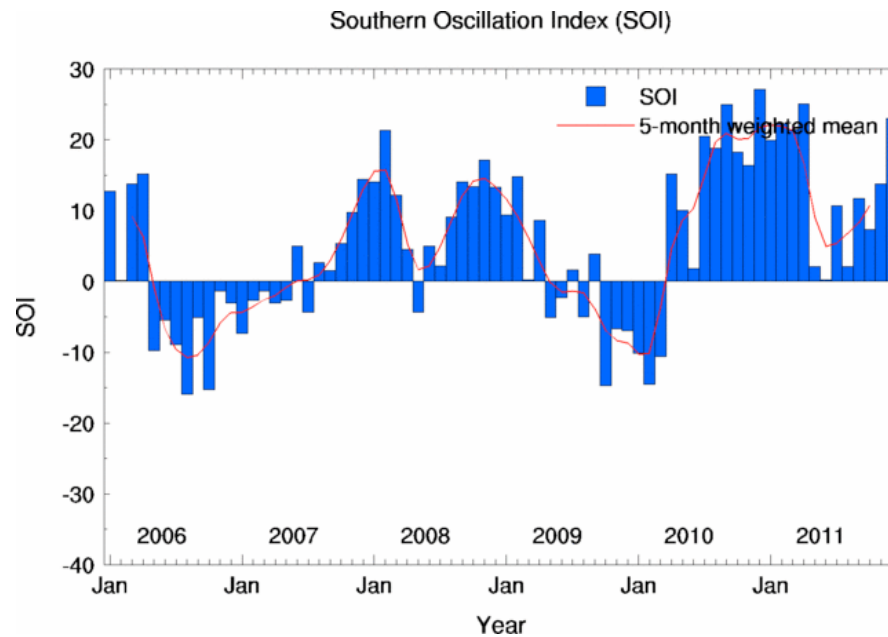
10-day data cycle centered around 20 January, 2012.



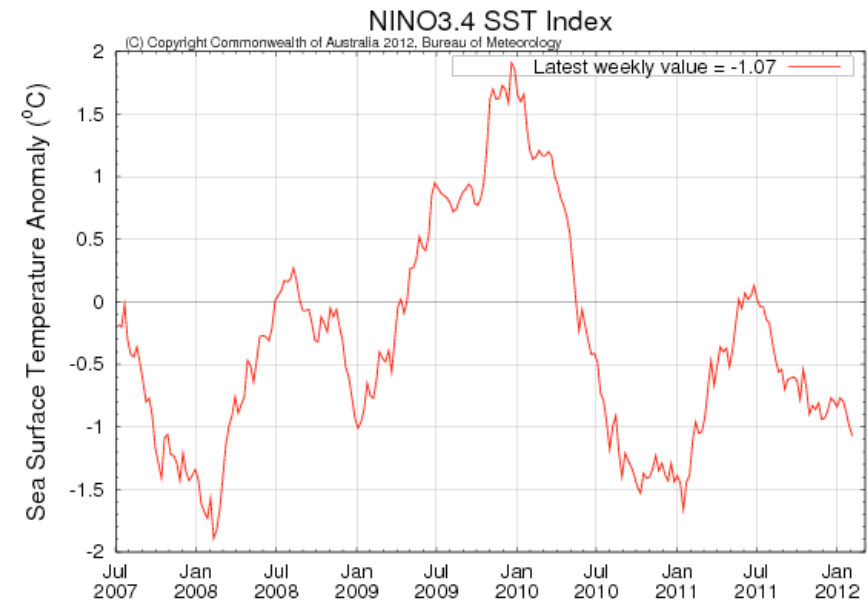
Note:

- Negative SSH anomalies were persistent on the east equatorial Pacific, with the horseshoe pattern of positive anomalies extending from the West Pacific Warm Pool

ENSO index



Positive SOI = La Niña



Negative Nino 3.4 index= La Niña

Note:

- ENSO indices still indicative of La Niña conditions over the equatorial Pacific, but models are predicting that La Niña will progressively weaken towards ENSO-neutral conditions in the following months.