



Pacific Climate Update Coral Bleaching Thermal Stress Analysis and Seasonal Guidance through May 2014

(Released February 4, 2014)

The southern hemisphere has progressed into the peak of the summer season. NOAA Coral Reef Watch's near-real-time satellite monitoring shows that, in the South Pacific Ocean, the highest sea surface temperature anomaly (Fig. 1) has been concentrating in an area stretching mainly in the northwest-southeast direction, covering most of the southeast Melanesia (including Solomon Islands, Santa Cruz, Vanuatu, and Fiji) and extending to Tonga and beyond. Coral bleaching thermal stress around Fiji (Fig. 2) has decreased to the Bleaching Watch level from the previous Bleaching Warning level based on CRW's satellite monitoring. Although the temperature increase has slowed down in this region (Fig. 3), the thermal stress levels capable of causing significant bleaching (Alert Level 1 and 2) are predicted for around Fiji and Tonga to occur towards the end of March (Fig. 4). However, the predicted spatial coverage for this potential event has decreased over the most recent weekly outlook updates. A potential high thermal stress event in the central equatorial Pacific Ocean around Kiribati is not expected until late May. Consulting weekly outlook updates in the coming weeks is highly recommended.

The waters along the east coast of Australia where the Great Barrier Reef locates and in most of the Coral Sea have showed only very weak and even negative sea surface temperature anomalies, while the anomaly is consistently higher along the southern and western coasts of Australia. No large scale coral bleaching thermal stress has been predicted for the Great Barrier Reef, by CRW's seasonal outlook.

A warm sea surface temperature anomaly has been lingering in the eastern equatorial Pacific Ocean and along the west coast of the South America during the past several weeks. The increase rate of sea surface temperature in the eastern South Pacific Ocean off the South America over the past three weeks is among the highest in the Pacific Ocean. CRW's seasonal outlook projects the sea surface temperature anomaly and coral bleaching thermal stress to develop and expand further during the upcoming months. Galapagos Islands are potentially in danger of coral bleaching towards the late April-early May time frame. These temperatures bear a strong resemblance to an El Niño pattern but neutral ENSO conditions are expected to continue into mid-2014.

To monitor the intensity and location of the thermal stress, please follow Coral Reef Watch's satellite monitoring and outlook closely in the coming weeks:

<http://coralreefwatch.noaa.gov/satellite/index.php> and

http://coralreefwatch.noaa.gov/satellite/bleachingoutlook_cfs/outlook_cfs.php.

NOAA/NESDIS SST Anomaly (degrees C), 2/3/2014

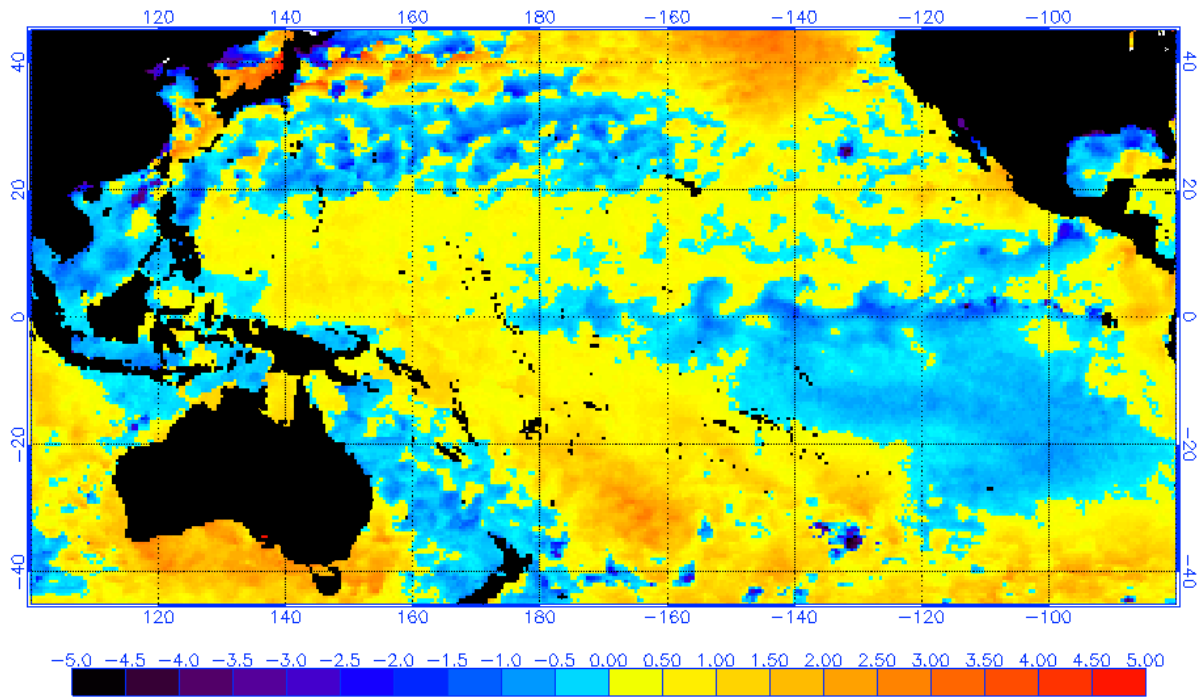


Figure 1: Satellite Sea Surface Temperature (SST) Anomaly

NOAA Coral Reef Watch Satellite Coral Bleaching Alert Area
03 Feb 2014

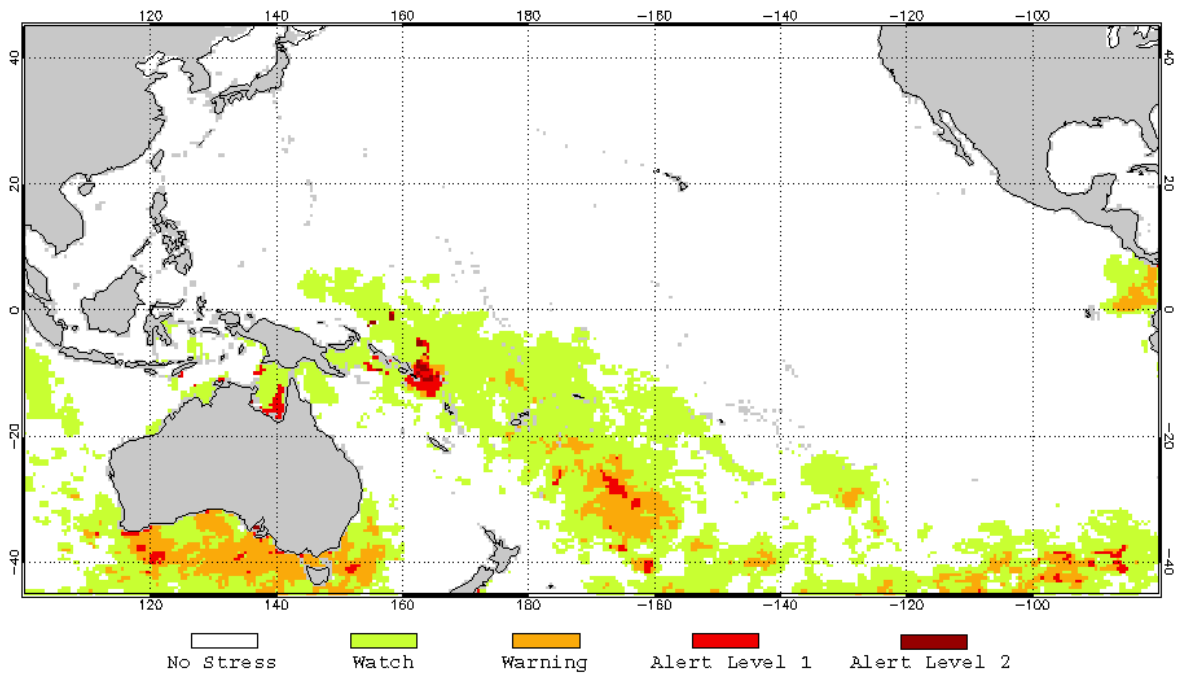


Figure 2: Satellite Coral Bleaching Alert Area

NOAA Satellite 50km Sea Surface Temperature Trend over the Past 21 Days
Experimental product, 03 Feb 2014

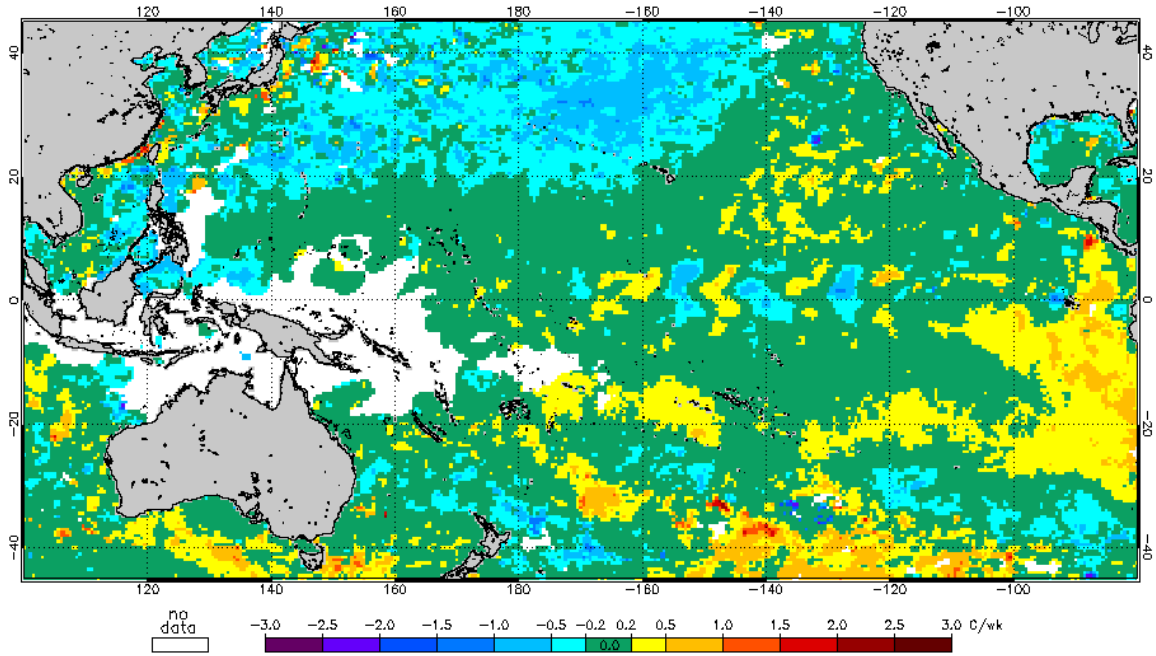


Figure 3: Satellite SST Trend over the Past 21 Days

2014 Feb 4 NOAA Coral Reef Watch 60% Probability Coral Bleaching Thermal Stress for Feb–May 2014
Experimental, v2.0, CFSv2–based, 28–member Ensemble Forecast

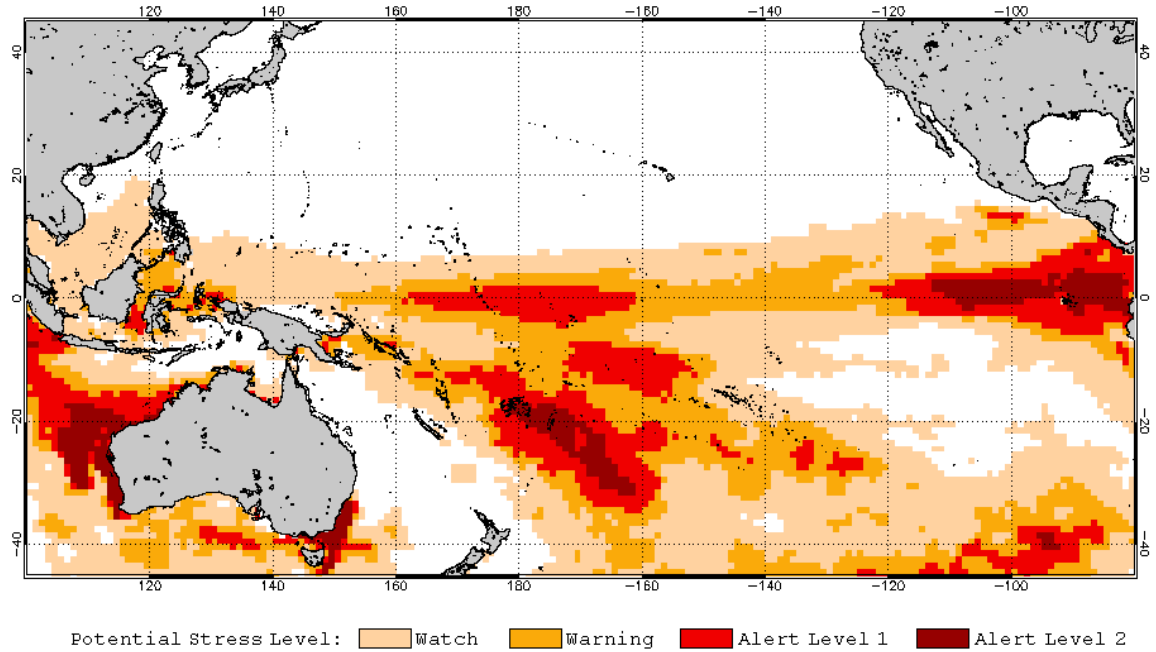


Figure 4: Seasonal Coral Bleaching Thermal Stress Outlook

Program Partners:

