

Pacific Climate Update Coral Bleaching Thermal Stress Analysis and Seasonal Guidance through May 2015

(Released February 2, 2015)

NOAA Coral Reef Watch's near-real-time satellite monitoring continues to show the presence of positive sea surface temperature (SST) anomalies throughout the western equatorial and southwestern Pacific Ocean. However, the high anomalies that previously existed in the eastern equatorial Pacific Ocean, pointing to a potential El Niño event, have decreased over the past several weeks; some have even become negative anomalies. This may indicate the dismantling of the potential El Niño event that had been widely predicted earlier but has not materialized (Figure 1).

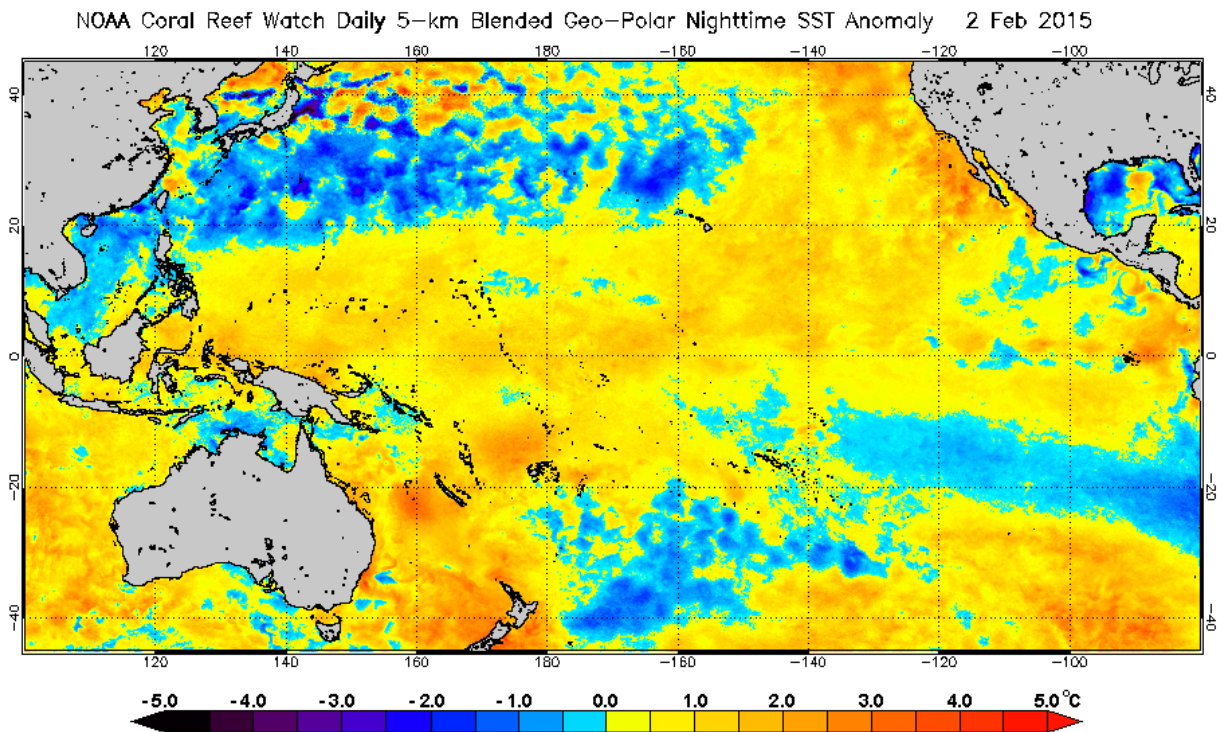


Figure 1. NOAA Coral Reef Watch's Satellite Sea Surface Temperature (SST) Anomaly product.

With the bleaching season moving into the Southern Hemisphere during the last three months and cloud cover persisting over the western equatorial Pacific Ocean (including Papua New Guinea and the Solomon Islands) starting in December 2014, no new major bleaching event has been reported. However, CRW's satellite monitoring (Figures 2 and 3) shows that the thermal stress has built to critical levels around Nauru and parts of the Gilbert Islands and is expected to remain. The stress also has begun to spread southward to New Caledonia, Vanuatu, Fiji, Tonga, Samoa, and American Samoa. The central and southern Great Barrier Reef, Coral Sea, and regions further south and southeast including Lord Howe Island and New Zealand have started to experience elevated SST anomalies and thermal stress as well.

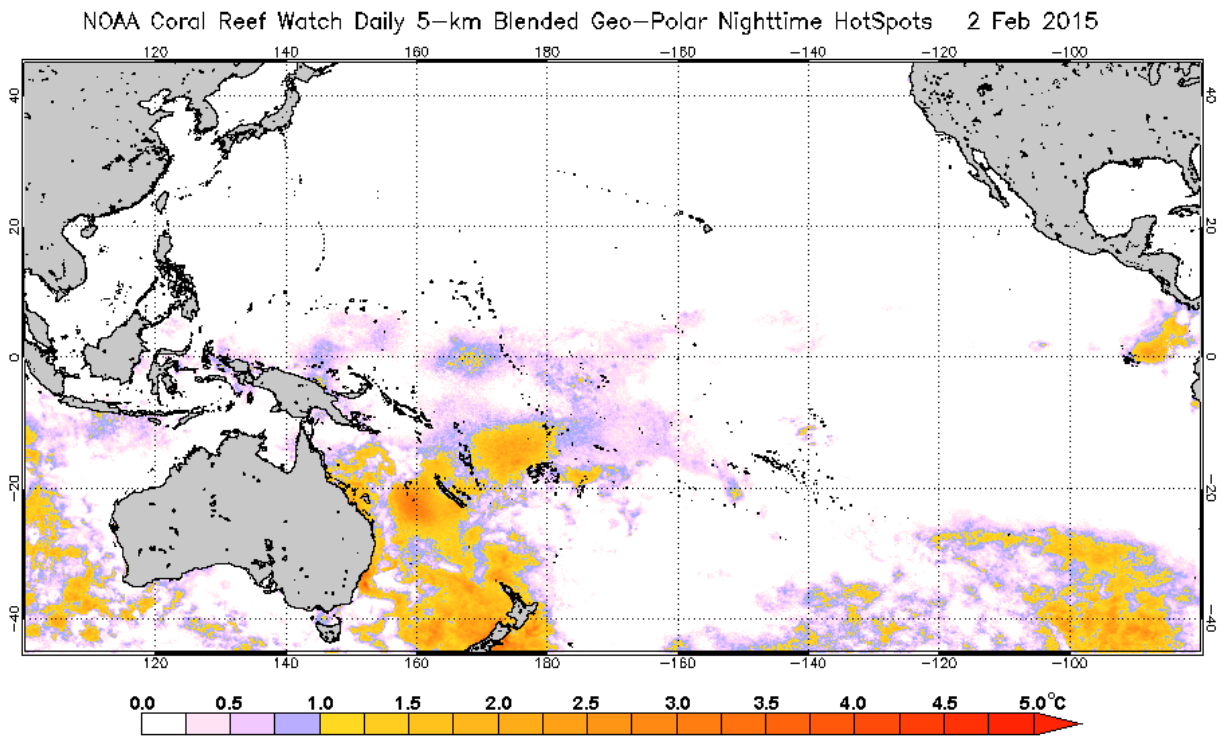


Figure 2. NOAA Coral Reef Watch's Satellite Coral Bleaching HotSpots product.

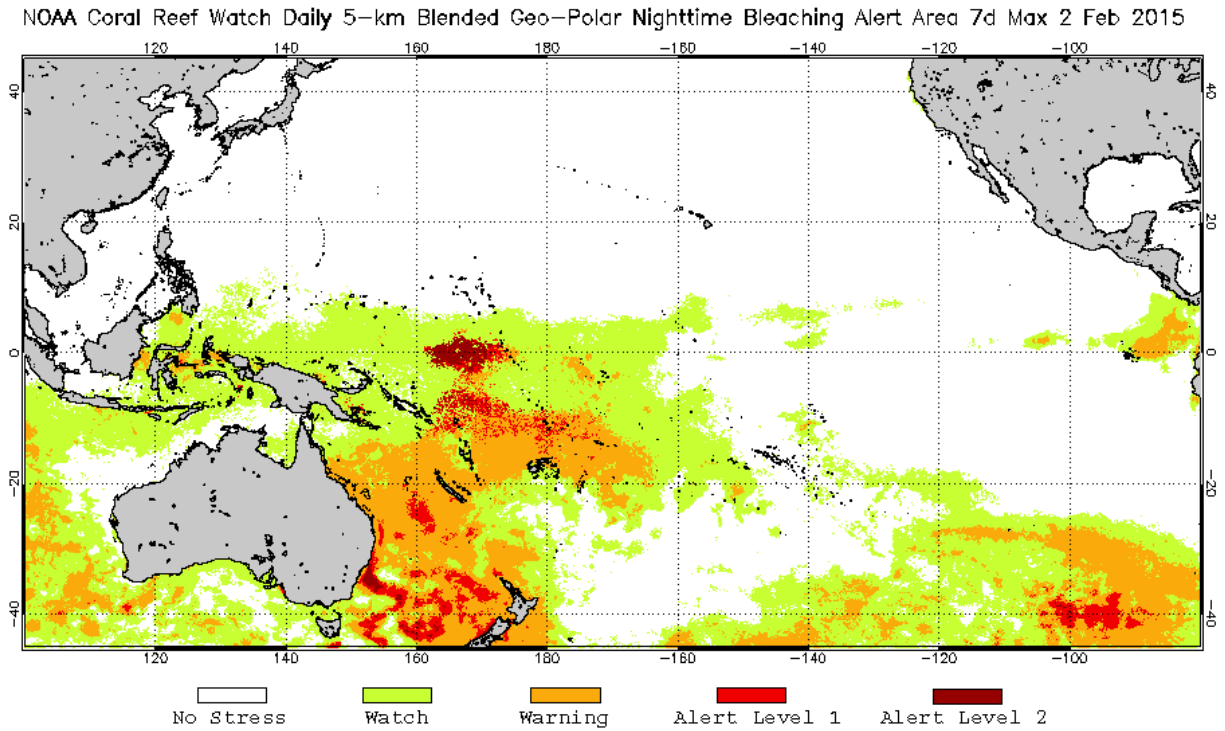


Figure 3. NOAA Coral Reef Watch's Satellite Maximum Bleaching Alert Area Composite product.

CRW's most recent Four-Month Coral Bleaching Thermal Stress Outlook (Figure 4) points to the development of thermal stress (potentially up to Alert Level 2 for some reef areas) across the equatorial Pacific Ocean all the way to the coast of South America. To the southeast, the stress is expected to develop further into the region that includes Fiji, Tonga, Samoa, American Samoa, the Cook Islands, and French Polynesia; to the east, it continues through Tuvalu, Tokelau, the Line Islands, and out into the eastern equatorial Pacific Ocean. In addition, the pattern of Indian Ocean warming seen in the Outlook model shows troubling similarity to the pattern seen at the onset of the global bleaching events in 1998 and 2010.

Furthermore, thermal stress may continue to develop along the southern Great Barrier Reef up to bleaching levels of Warning and Alert Level 1 before it dissipates in late February.

2015 Feb 3 NOAA Coral Reef Watch 60% Probability Coral Bleaching Thermal Stress for Feb–May 2015
Experimental, v3.0, CFSv2–based, 28–member Ensemble Forecast

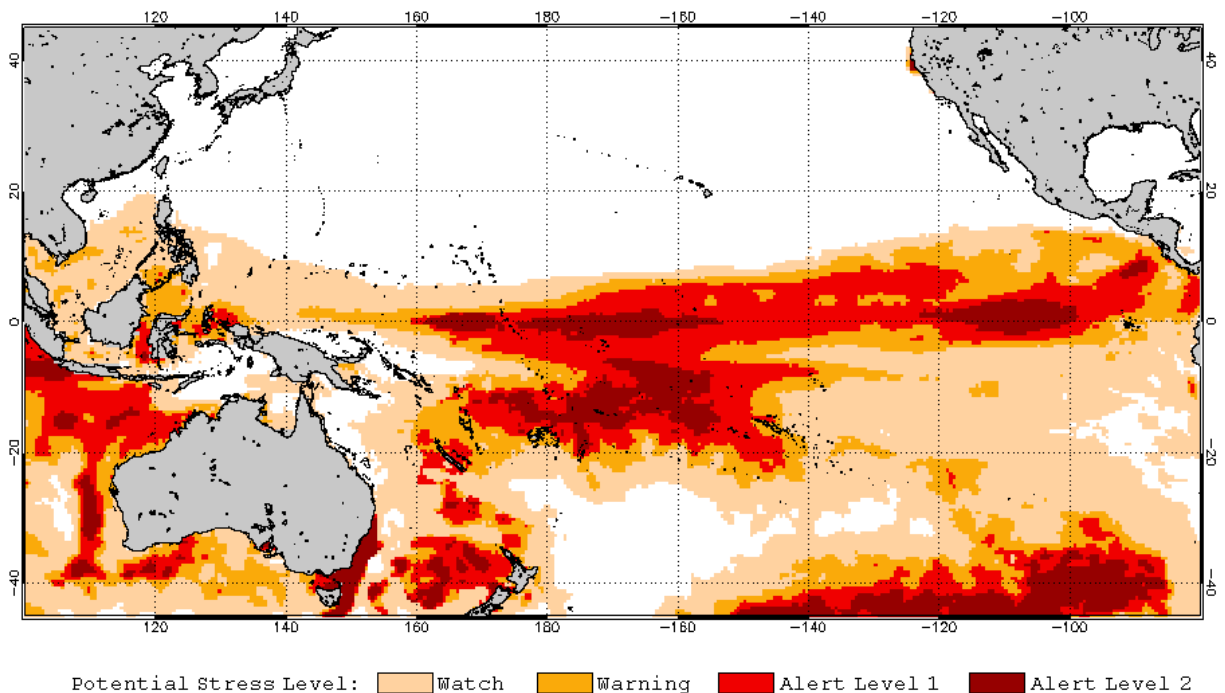


Figure 4. NOAA Coral Reef Watch's Four-Month Coral Bleaching Thermal Stress Outlook for Feb-May 2015.

Note: With the release of this report, NOAA Coral Reef Watch is switching to two new products. From this point forward, we expect to focus on our new 5-km satellite-based products and our new (version 3.0) Four-Month Coral Bleaching Thermal Stress Outlook.

To monitor the intensity and location of the coral bleaching thermal stress, please follow NOAA CRW's satellite monitoring and Outlook closely in the coming weeks:

<http://coralreefwatch.noaa.gov/satellite/bleaching5km/index.php> and
http://coralreefwatch.noaa.gov/satellite/bleachingoutlook_cfs/outlook_cfs.php.

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