

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

(Released May 3, 2015)

NOAA Coral Reef Watch's near-real-time satellite monitoring has shown significant and persistent elevation of sea surface temperature (SST) throughout the equatorial Pacific Ocean. High SST anomalies are now well-developed in the eastern equatorial Pacific Ocean and along the coast of South America, consistent with a conventional El Niño (Figure 1). Meanwhile, a significantly high anomaly in the central equatorial Pacific Ocean that started early last year has persisted, consistent with an atypical El Niño Modoki or central Pacific El Niño event (Figure 1). SST anomalies in the western equatorial Pacific Ocean also remain higher than normal.

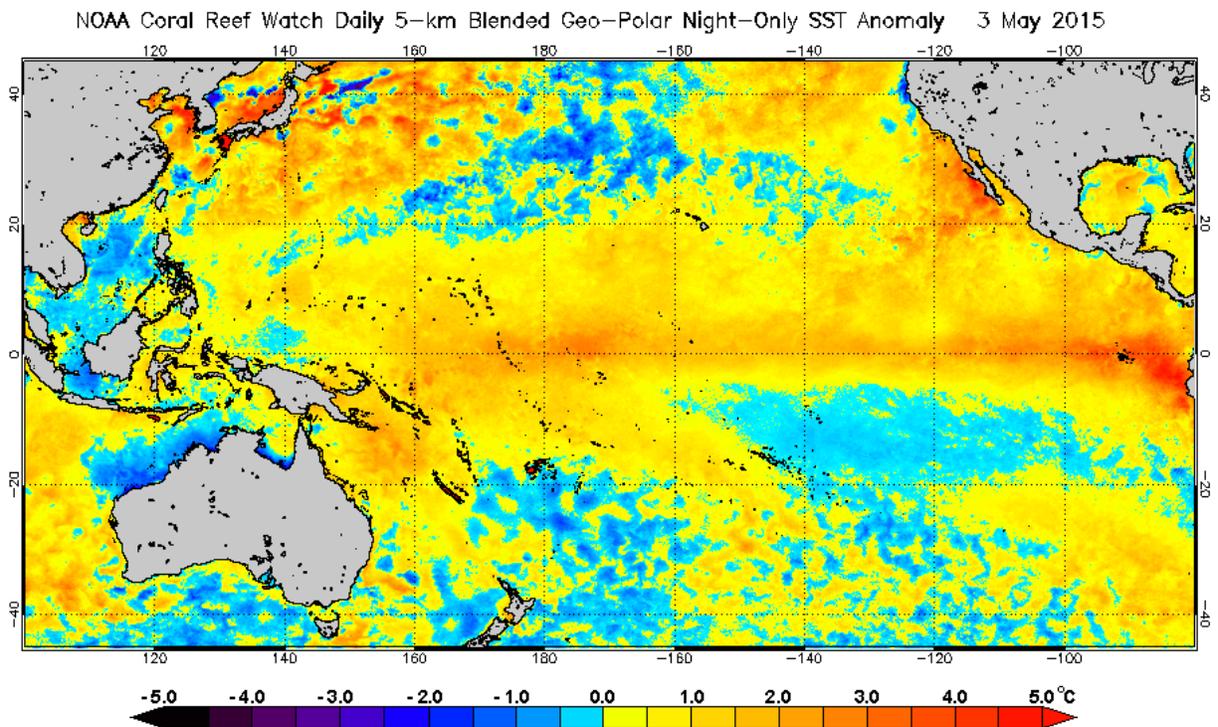


Figure 1. NOAA Coral Reef Watch's Satellite Sea Surface Temperature (SST) Anomaly product.

As a result, Coral Bleaching HotSpots have developed throughout the central and eastern equatorial Pacific Ocean (Figure 2), accumulating thermal stress to levels that cause bleaching (Figure 3). Bleaching Alert Levels 1 and 2 have been reached, and we expect corals are, or will soon bleach on reefs in Kiribati (Gilbert and Phoenix Islands), Howland and Baker Islands in the west, and the Galapagos Islands and the South American coast in the east. Thermal stress in the western South Pacific has decreased as the region moves into its fall season. Some lingering thermal stress still can be seen in Figures 2 and 3. New reports on extensive coral bleaching have come from regions such as Fiji and Wallis Island.

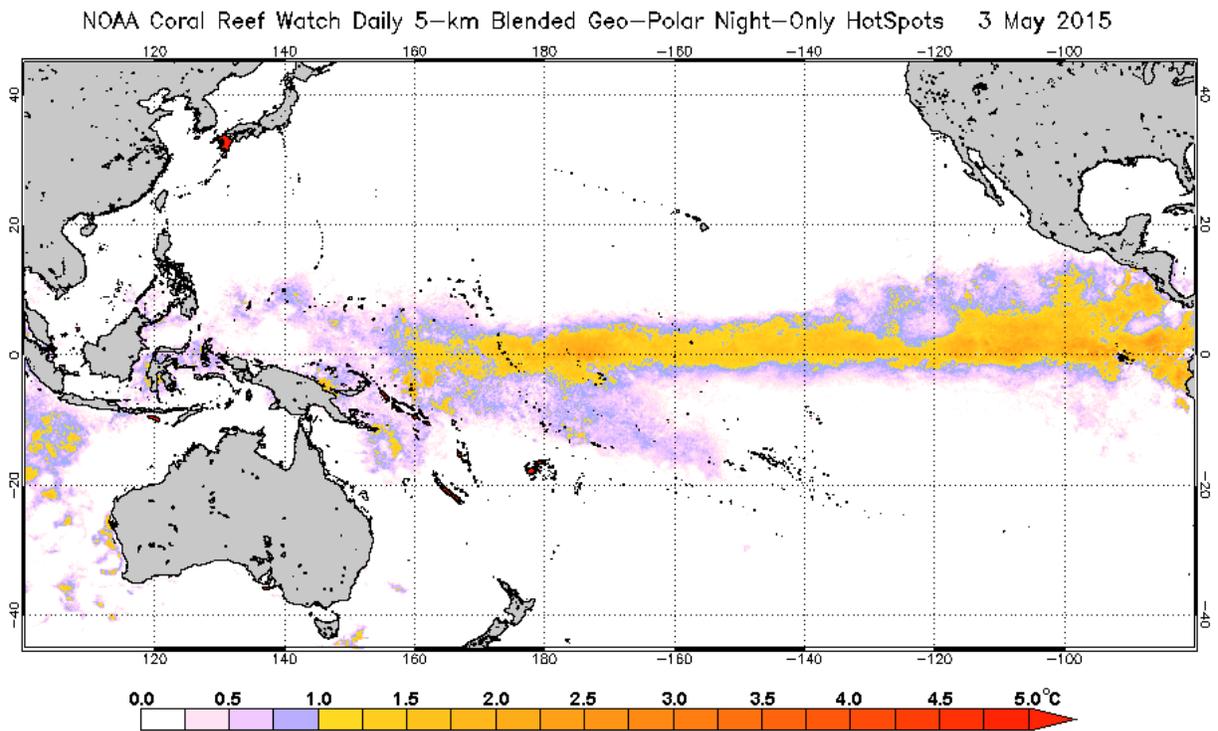


Figure 2. NOAA Coral Reef Watch's Satellite Coral Bleaching HotSpots product.

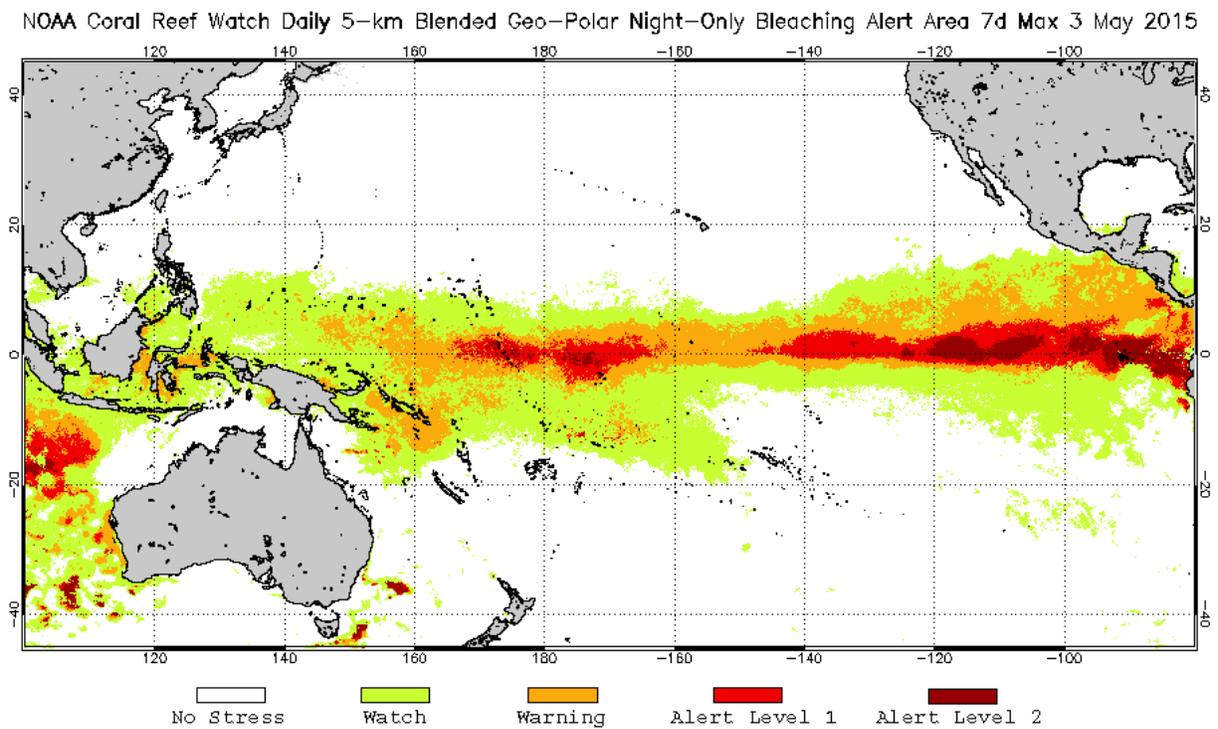


Figure 3. NOAA Coral Reef Watch's Satellite Maximum Bleaching Alert Area Composite product.

CRW's most recent Four-Month Coral Bleaching Thermal Stress Outlook (Figure 4) projects the continued development of thermal stress through the end of June 2015 in the eastern equatorial Pacific Ocean, before it starts to break up and shift north along the Central and North American coasts. The Line Islands, which has not experienced high levels of bleaching thermal stress before based on CRW's satellite monitoring, may reach Alert Level 2 starting in late May.

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

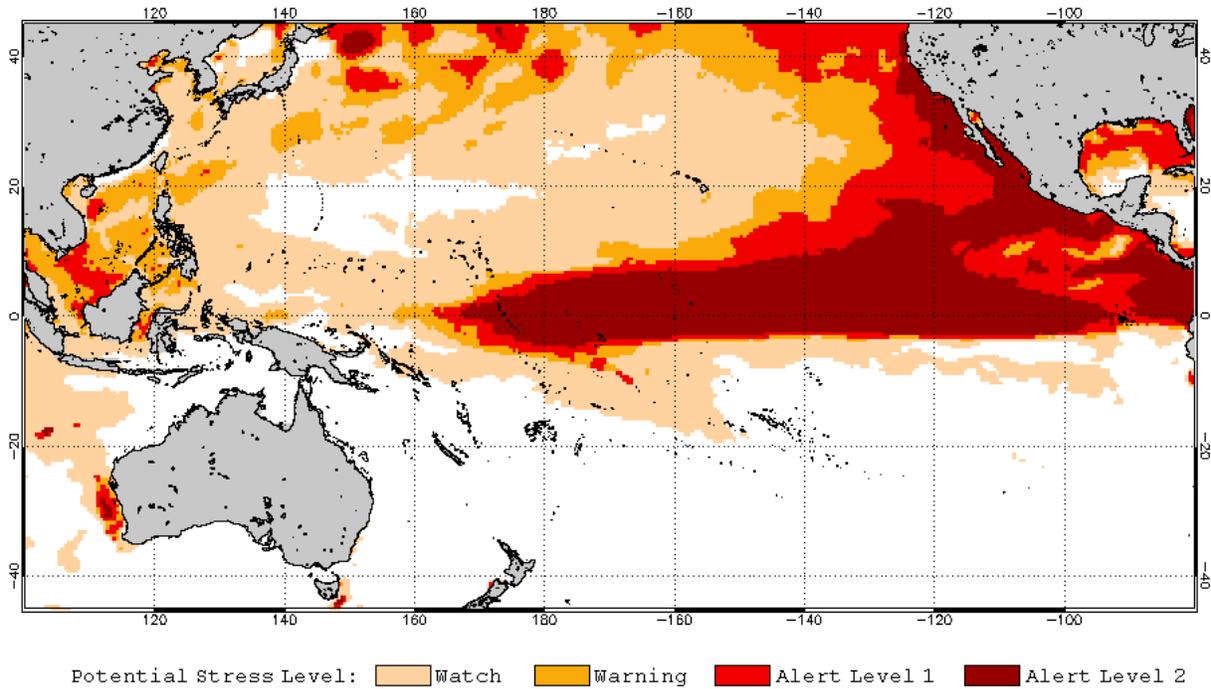


Figure 4. NOAA Coral Reef Watch's Four-Month Coral Bleaching Thermal Stress Outlook for May-Aug 2015.

NOTE: Beginning with the February 2, 2015 quarterly report, NOAA Coral Reef Watch switched to focusing on its new [5-km satellite-based coral bleaching thermal stress products](#) and new [v3.0 Four-Month Coral Bleaching Thermal Stress Outlook](#). The 5-km satellite products presented here still use CRW's heritage color scales, to be consistent with past reports. However, starting with the next quarterly report update, CRW plans to switch to using its new color scales, which are already implemented in the images posted on the [CRW website](#).

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

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