

Pacific Climate Update Coral Bleaching Thermal Stress Analysis and Seasonal Guidance through August 2016

(Released May 3, 2016)

Current conditions:

NOAA Coral Reef Watch's (CRW) near-real-time satellite monitoring shows sea surface temperature (SST) anomalies have decreased across most of the central and eastern equatorial Pacific over the past month (Figure 1). A transition to ENSO-neutral conditions is likely during late Northern Hemisphere spring or early summer, with an increasing chance (greater than 50%) of La Niña conditions during the last half of 2016. HotSpots have dipped or disappeared following the negative SST Anomaly in the eastern equatorial Pacific but remain high along the western coast of Central America and throughout much of the south central Pacific (Figure 2).

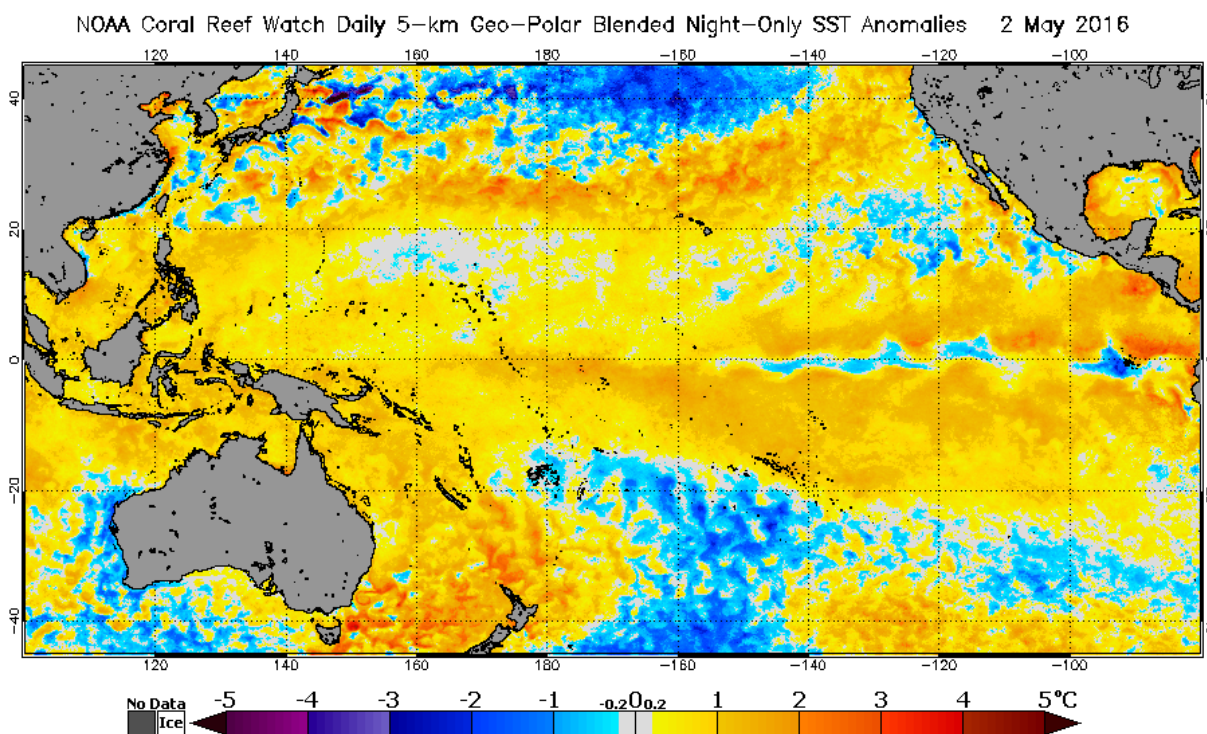


Figure 1: NOAA Coral Reef Watch's Satellite Sea Surface Temperature (SST) Anomaly product for the Pacific region.

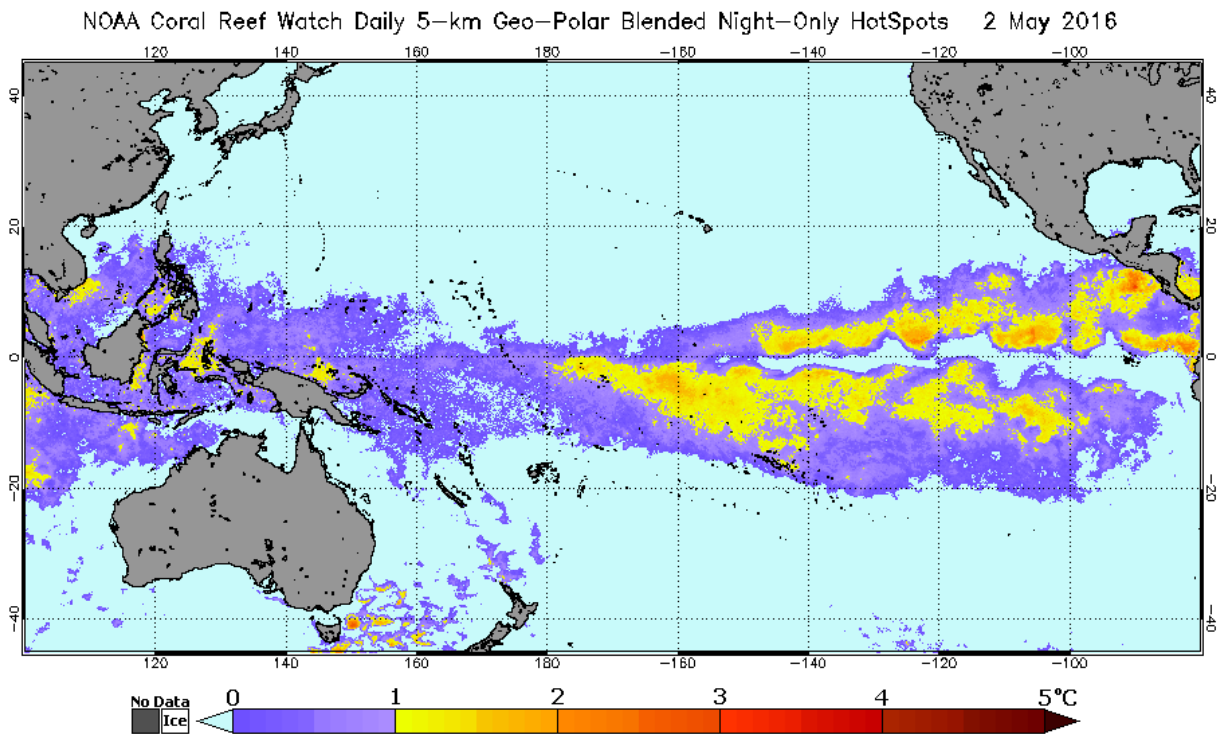


Figure 2: NOAA Coral Reef Watch's Satellite Coral Bleaching HotSpot product for the Pacific region.

In the central equatorial Pacific Ocean, reefs in the [Northern Line Islands \(Kiribati\)](#), [Southern Line Islands](#), and the [Marquesas Islands](#) are again at Alert Level 2 bleaching conditions associated with significant bleaching and widespread mortality (Figure 3). The [Northern Cook Islands](#) also just reached Alert Level 1. The [Phoenix Islands \(Kiribati\)](#) remain at Alert Level 2 (Figure 3). In Kiribati, persistent elevated ocean temperatures (as high as 31.4-degrees Celsius) since June 2015 have killed most of the corals in the region. The ongoing high bleaching thermal stress in Kiribati is tied to the very strong El Niño that has only begun to dissipate, but whose effects will last for many months in the southern hemisphere. It is estimated that only 5% of Kiribati's reefs will survive this bleaching thermal stress event.

Coral bleaching thermal stress in the eastern Pacific Ocean remains high. The [Costa Rica Pacific](#) 5-km Regional Virtual Station remains at Alert Level 2 and the [Panama Pacific West](#) station remains at Alert Level 1 (Figure 3), although heat stress in these areas is expected to dissipate shortly. Thermal stress surrounding the [Clipperton Island \(France\)](#) station continues to increase, and Alert Level 1 bleaching is expected in the next few weeks. [El Salvador](#) is also expected to reach Alert Level 1 bleaching conditions in late May-early June.

Bleaching thermal stress has now left Australia's Great Barrier Reef (GBR, Figure 3); however, high ocean temperatures these last few months did significant damage to the GBR. The Great Barrier Reef Marine Park Authority now considers this to be the worst bleaching event in the history of the GBR. The lasting effects of this event and the ability for reefs to recover remain to be seen, especially for the northern portions which suffered the most damage.

NOAA Coral Reef Watch Daily 5-km Geo-Polar Blended Night-Only Bleaching Alert Area 7d Max 2 May 2016

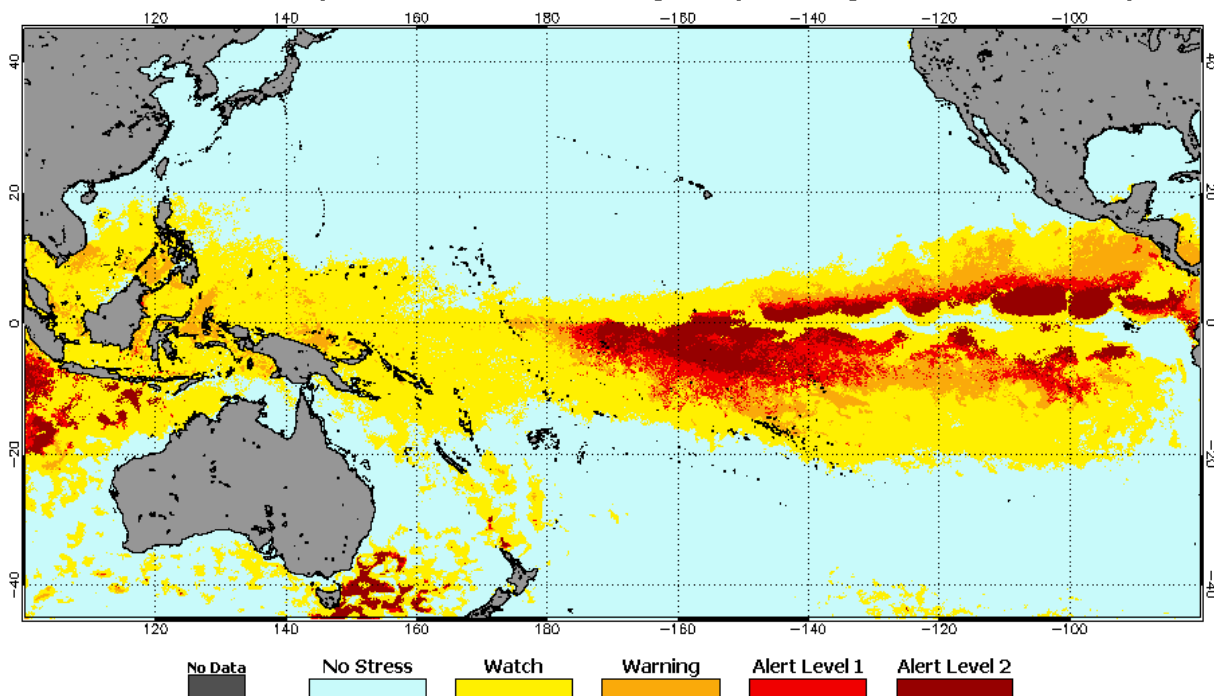


Figure 3: NOAA Coral Reef Watch's Satellite Bleaching Alert Area (7-day maximum) product for the Pacific region.

CRW's most recent Four-Month Coral Bleaching Thermal Stress Outlook (Figure 4) projects continued thermal stress in the central equatorial Pacific Ocean through August. Waters around the Federated States of Micronesia are expected to reach Alert Level 2 and the Marshall Islands are expected to reach Alert Level 1. Guam, CNMI, and Hawaii are projected to remain at Bleaching Watch levels through the end of August 2016.

2016 May 3 NOAA Coral Reef Watch 60% Probability Coral Bleaching Thermal Stress for May–Aug 2016
Experimental, v3.0, CFSv2-based, 28-member Ensemble Forecast

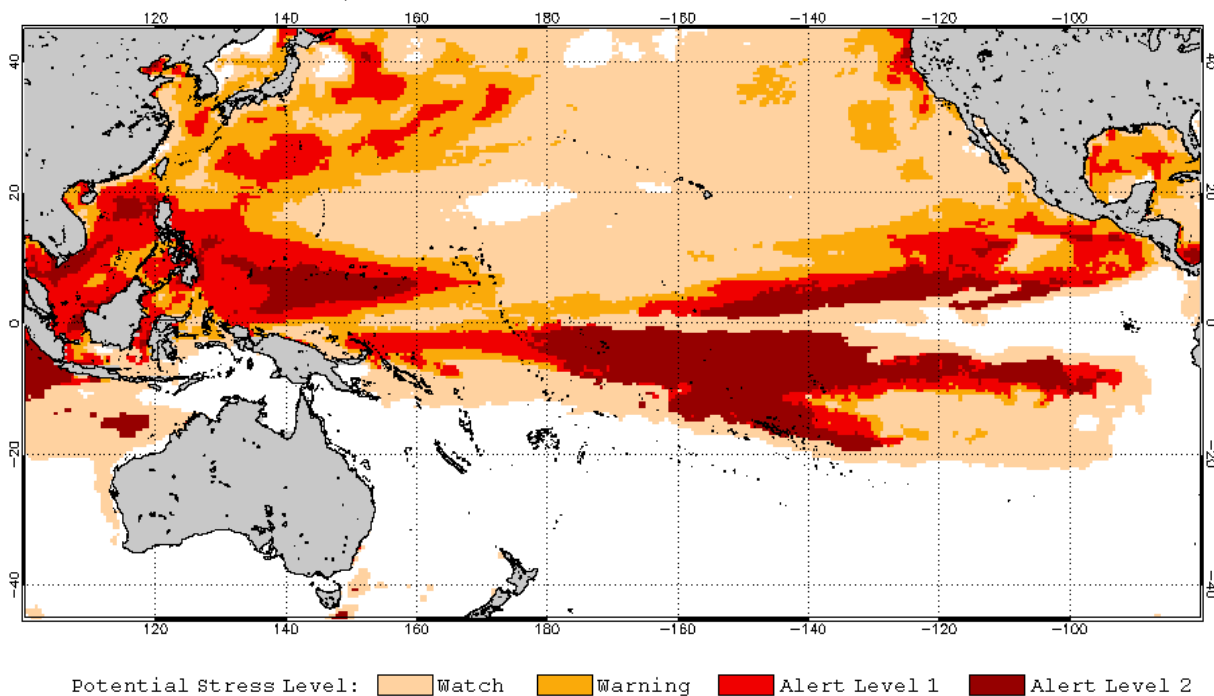


Figure 4: NOAA Coral Reef Watch's Four-Month Coral Bleaching Thermal Stress Outlook for May–August 2016 for the Pacific region.

NOTE: This report focuses on NOAA Coral Reef Watch's new [5-km satellite-based coral bleaching thermal stress products](#) and v3.0 [Four-Month Coral Bleaching Thermal Stress Outlook](#). The 5-km satellite products presented here use CRW's new color scales, which are already implemented in the images posted on the [CRW website](#).

To monitor the intensity and location of 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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