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

(Released November 02, 2015)

Current conditions:

NOAA Coral Reef Watch's (CRW) near-real-time satellite monitoring continues to show significant positive sea surface temperature (SST) anomalies throughout the central and eastern equatorial Pacific Ocean, while the western equatorial Pacific Ocean continues to experience strong negative SST anomalies around the Federated States of Micronesia, the Gilbert and Marshall Islands, and southeast Asia (Figure 1). This pattern is consistent with a strong El Niño advisory (as issued by NOAA). The entire northeastern Pacific Ocean has been a huge pool of warm water extending from the American west coast all the way to the Hawaiian Islands, and merging into the high SST anomalies in the eastern and central tropical Pacific Ocean. As the northern hemisphere moves into its winter season, the SST has been decreasing, but the progress of the SST anomaly in the northeastern Pacific Ocean remains to be seen.

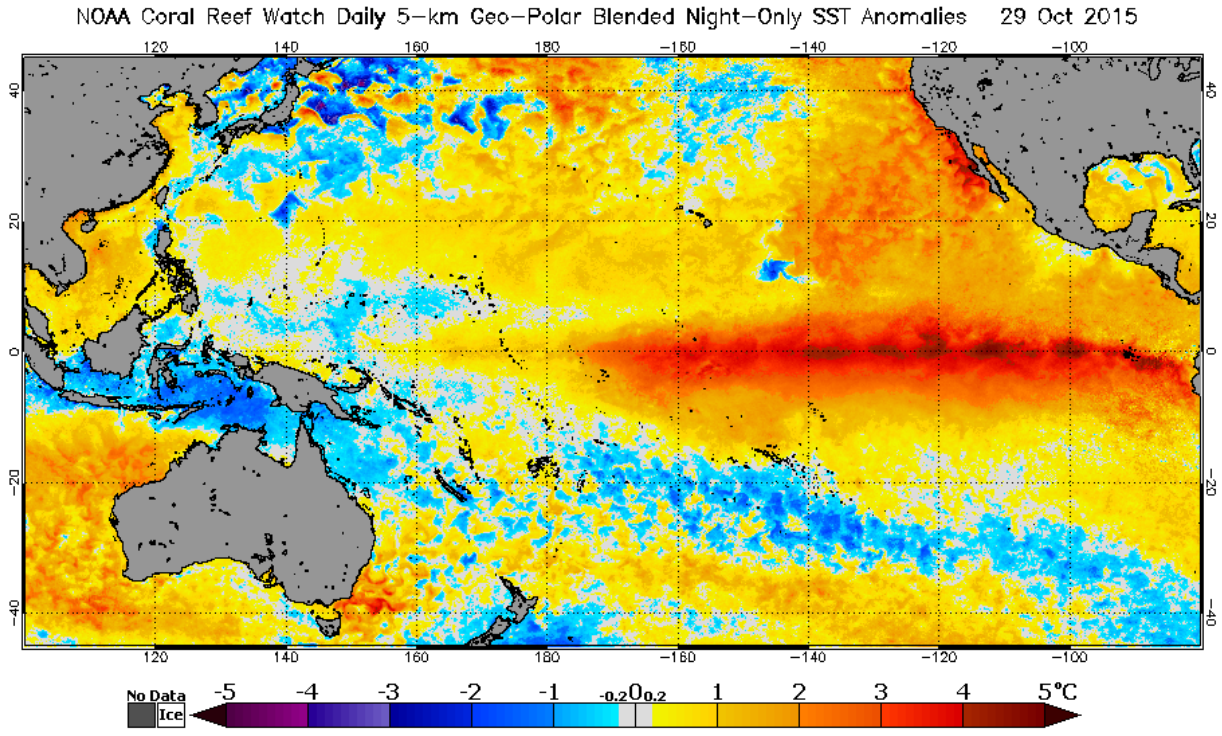

Figure 1: NOAA Coral Reef Watch's Satellite Sea Surface Temperature (SST) Anomaly product.

In line with the development of the SST anomaly, Coral Bleaching HotSpots that originally appeared in the northeastern Pacific Ocean in July 2015 have quickly accumulated into thermal

stress capable of causing mass coral bleaching. HotSpots also persist in the central equatorial Pacific Ocean. They started to develop around the Hawaiian Islands in July and reached Alert Level 2 around the Main Hawaiian Islands in mid-September, causing a mass coral bleaching event (Figures 2 and 3). Some remaining HotSpots still linger around Hawaii's Big Island but are expected to completely disappear in the upcoming weeks if not days. Alert Levels 1 and 2 have persisted over reefs in Kiribati (Gilbert, Phoenix, and Line Islands) and Howland and Baker Islands and are expected to have caused widespread bleaching (Figure 3). In the northwestern Pacific Ocean, HotSpots were present during the past few months but never intensified to cause widespread bleaching. Thermal stress in this region is now dissipating (Figures 2 and 3).

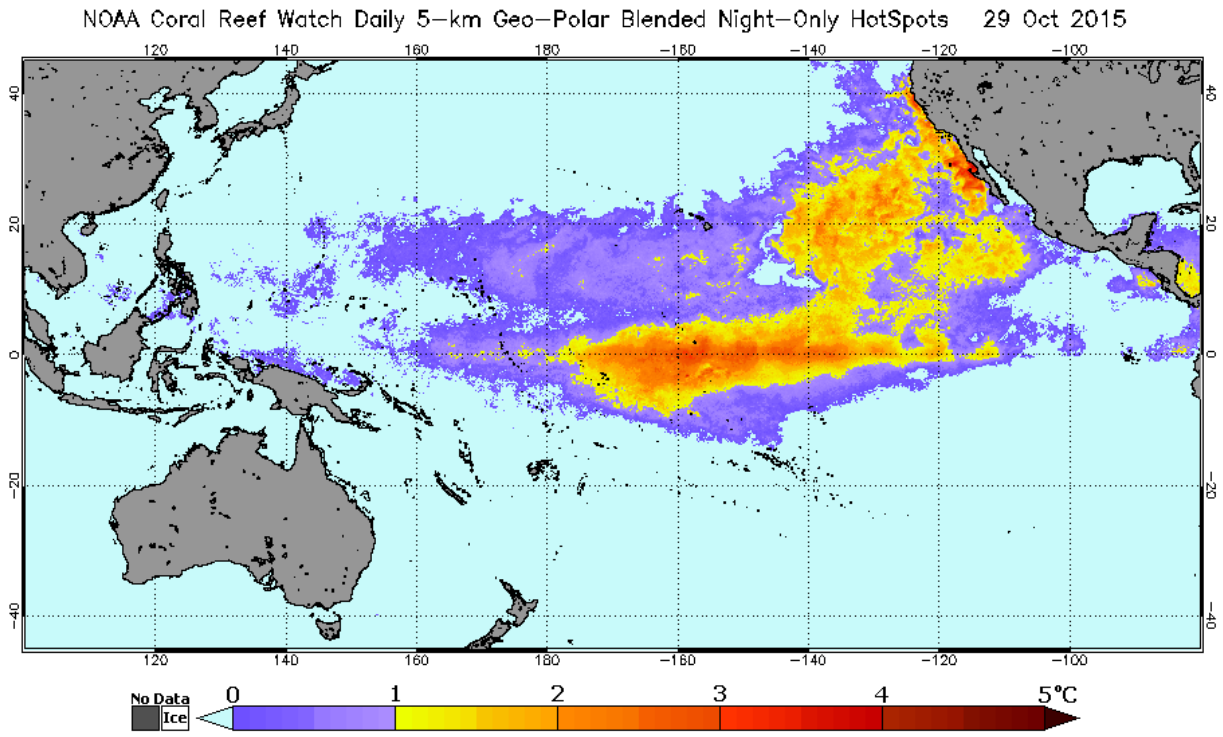

Figure 2: NOAA Coral Reef Watch's Satellite Coral Bleaching HotSpot product.

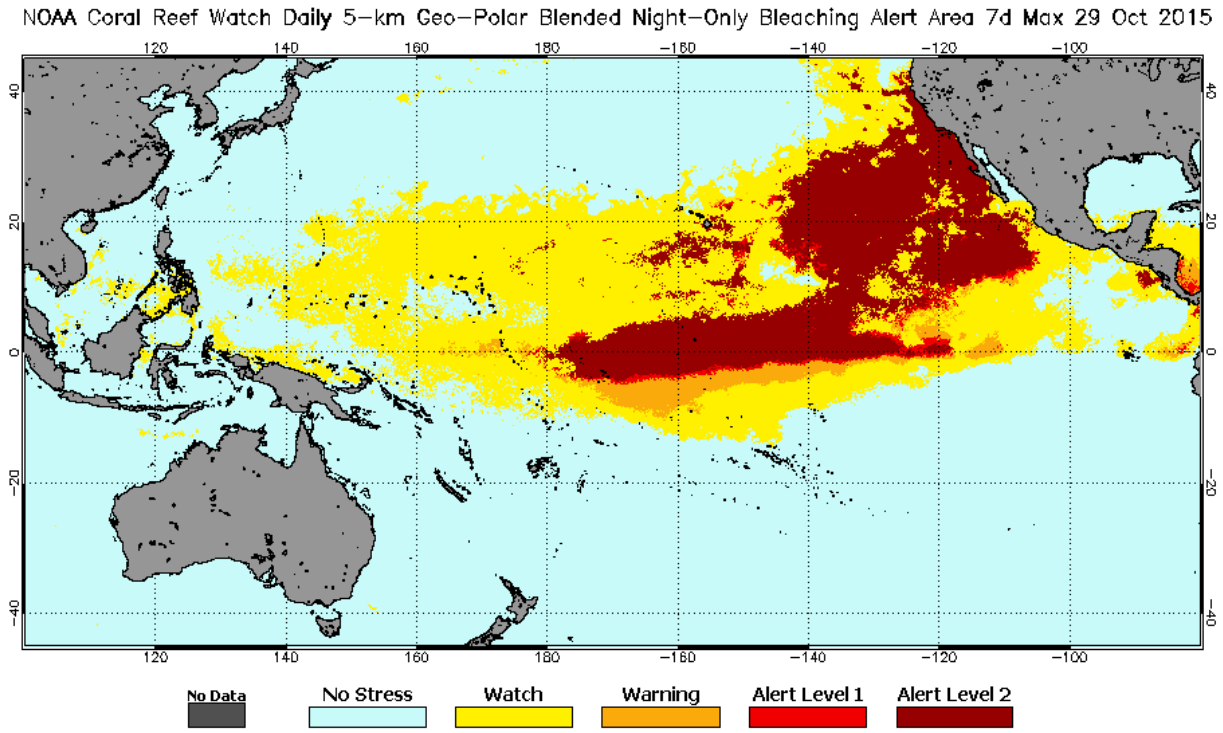

Figure 3: NOAA Coral Reef Watch's Satellite Bleaching Alert Area (7-day maximum) product.

CRW's most recent Four-Month Coral Bleaching Thermal Stress Outlook (Figure 4) projects continued thermal stress to last through at least the end of February 2016 in the central equatorial Pacific Ocean. Alert Level 2 is expected to persist in Kiribati through February, whereas the Marshall Islands may see thermal stress begin to decrease by the end of November. Thermal stress in Hawaii is predicted to last through November and then drop off by December 2015. By January and on through February 2016, thermal stress is expected to begin in the Southern Line Islands, the Northern Cook Islands, and in most areas surrounding Australia's Great Barrier Reef.

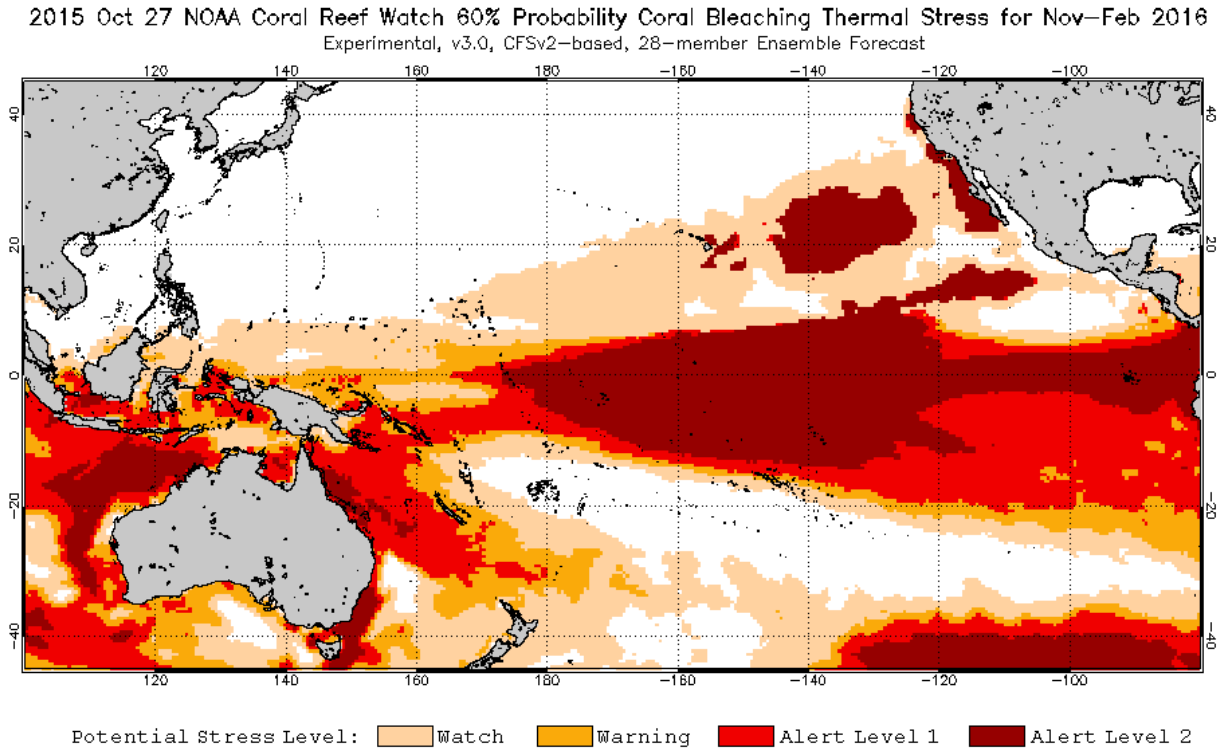

Figure 4: NOAA Coral Reef Watch's Four-Month Coral Bleaching Thermal Stress Outlook for Nov 2015 – Feb 2016.

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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