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

(Released August 1, 2014)

While summer is in full stride in the northern hemisphere, the tropical region has just moved into its cool season. An El Niño event continues to develop, as shown in NOAA Coral Reef Watch's SST Anomaly (Fig. 1), but has just cooled abruptly. The majority of climate prediction models still indicate a weak-to-moderate strength El Niño event will peak during the late fall and continue into early 2015 (http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.html).

NOAA Coral Reef Watch's near-real-time satellite monitoring continues to show the presence of positive sea surface temperature (SST) anomalies throughout the eastern equatorial region, with some cooling from peak anomalies seen along the western and central Pacific equatorial region during the last few months (Fig. 1). The Gilbert Islands / Kiribati in the central Pacific and Galapagos and the coast of South America continue to experience the highest SST anomalies (Fig. 1). The Gilbert Islands continue to be encircled by anomalously warm water (>1 °C) but with decreased intensity and reduced spatial coverage. Meanwhile the SST anomaly in the western North Pacific Ocean increased in the most recent months and led to thermal stress at levels causing some bleaching (Fig. 2). Bleaching has been observed in the Commonwealth of the Northern Mariana Islands (CNMI) (including Maug, Asuncion, Pagan, Sarigan, Guguan, and Anatahan) and Guam. The passing of Super Typhoon Neogur in early July reduced the SST anomaly and thermal stress significantly in the region to the south and west of CNMI/Guam, but did not cool the northern parts of the CNMI. However, cooling has now come to the northern CNMI with significant reductions in thermal stress to corals during the last two weeks of July (Fig. 3).

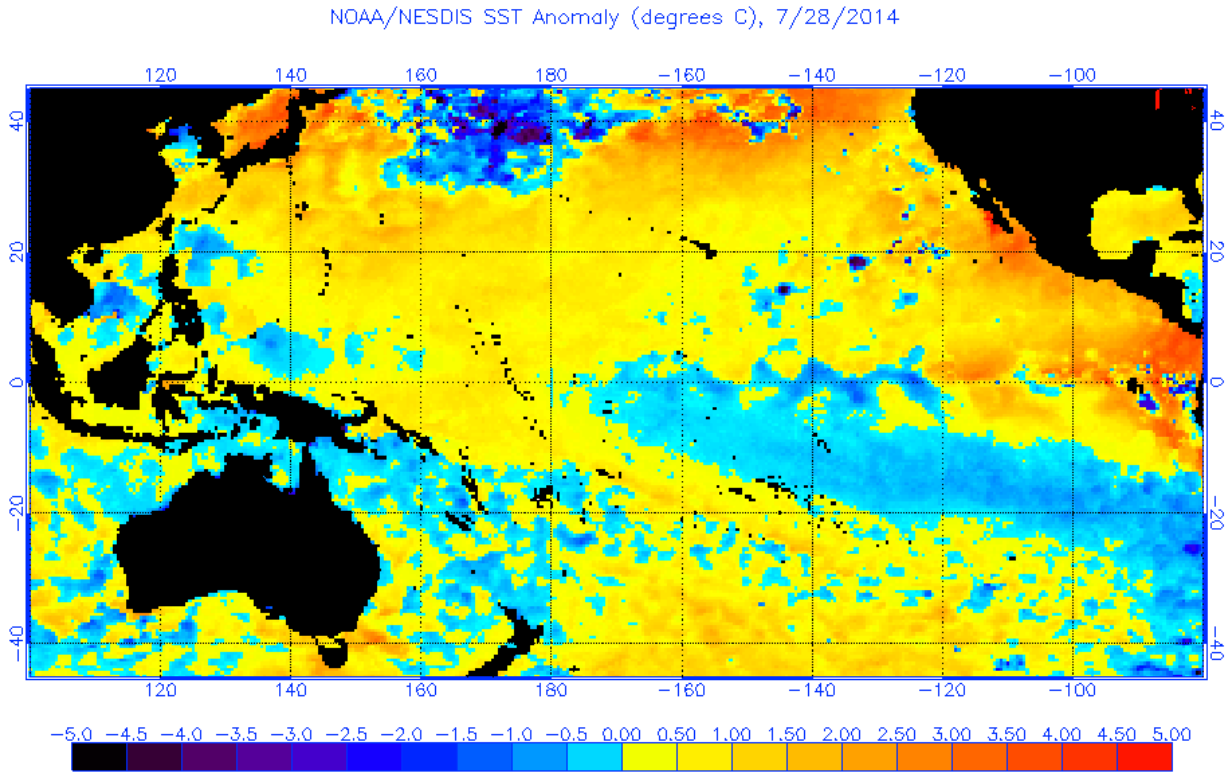

Figure 1. NOAA Coral Reef Watch's Satellite Sea Surface Temperature (SST) Anomaly.

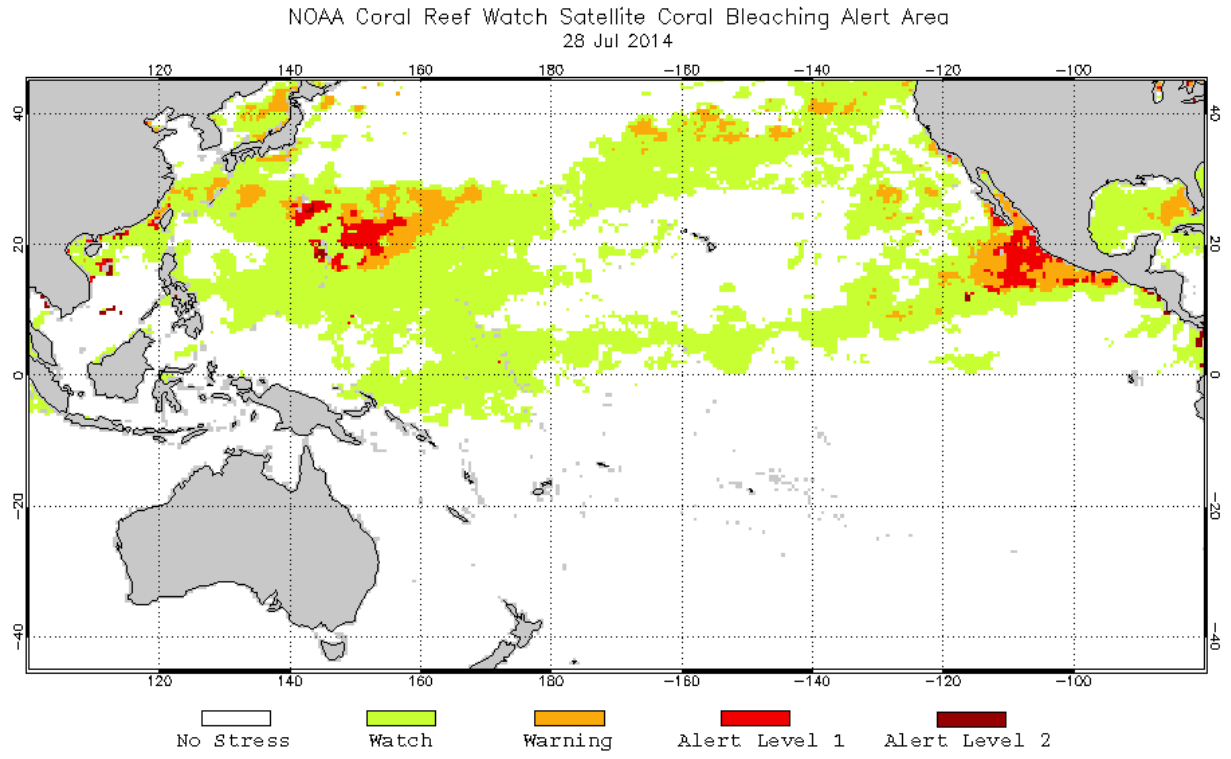

Figure 2. NOAA Coral Reef Watch's Satellite Bleaching Alert Area.

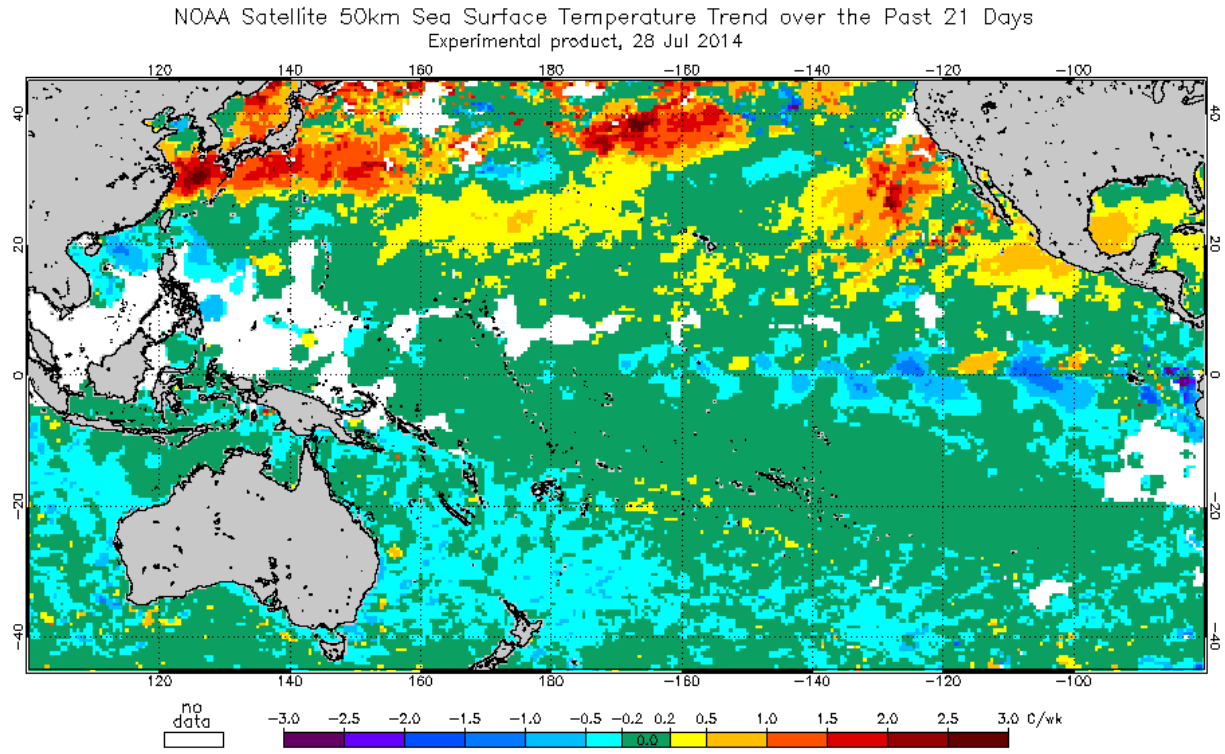

Figure 3. NOAA Coral Reef Watch's Satellite SST Trends over the past 21 days.

Coral Reef Watch's current Seasonal Coral Bleaching Thermal Stress Outlook (Fig. 4) projects the thermal stress will linger for a few more weeks both in the northern CNMI, Republic of Marshall Islands (RMI), and in the Gilbert Islands / Kiribati. As the northern hemisphere moves into fall season and the sun passes again over the equator, the RMI and Gilbert Islands / Kiribati are projected to have a new run of relatively high thermal stress (up to Alert Level 1) in the October-November timeframe. The Hawaiian Islands and Midway Atoll may experience mild bleaching thermal stress (Warning) in September-October, with potential Alert Level 1 projected for the southern portion of the Northwestern Hawaiian Islands and Main Hawaiian Islands. However, the model has considerable geographic uncertainty in this region, so we recommend you continue to consult our Seasonal Bleaching Outlook to see if this pattern continues.

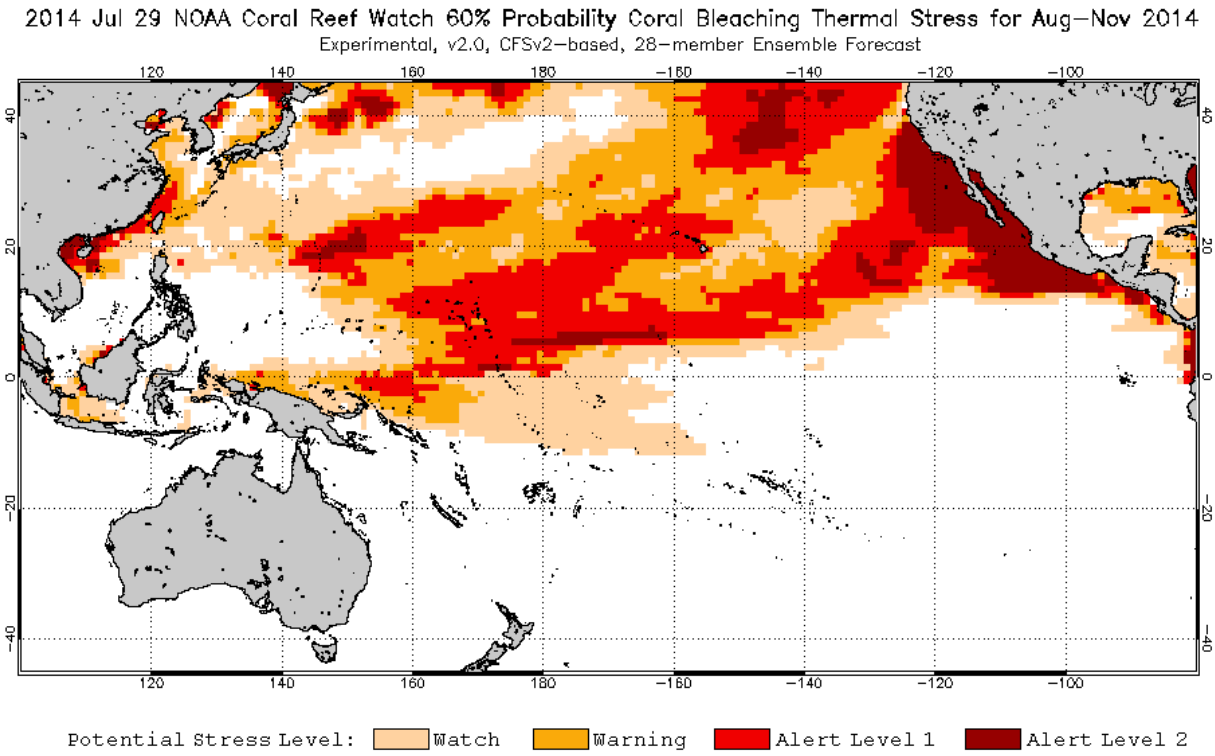

Figure 4. NOAA Coral Reef Watch's Seasonal Coral Bleaching Thermal Stress Outlook.

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.

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