

# Pacific Climate Update

## Coral Bleaching Heat Stress Analysis and Seasonal Guidance through March 2022

(Released November 30, 2021)

### Current conditions:

NOAA Coral Reef Watch's (CRW) [near real-time satellite monitoring](#) shows the sea surface temperature (SST) as being predominantly below-average across most of the equatorial Pacific Ocean, which is consistent with the ongoing La Niña. Over the past three months, long-lasting anomalously high SST anomalies centered in the eastern portion of the far north Pacific have begun to dissipate (Figure 1). SST anomalies remain above-average in areas of the western Pacific, as a strong Pacific Decadal Oscillation (PDO) pattern continues, surrounding Guam, the Federated States of Micronesia, Palau, and Papua New Guinea. As of November 11, 2021, the NOAA National Centers for Environmental Prediction's (NCEP) [El Niño-Southern Oscillation \(ENSO\) Alert System](#) status remains at La Niña Advisory. La Niña is likely to continue through the Northern Hemisphere winter 2021-2022 (~90% chance) and into spring 2022 (~50% chance during March-May 2022).

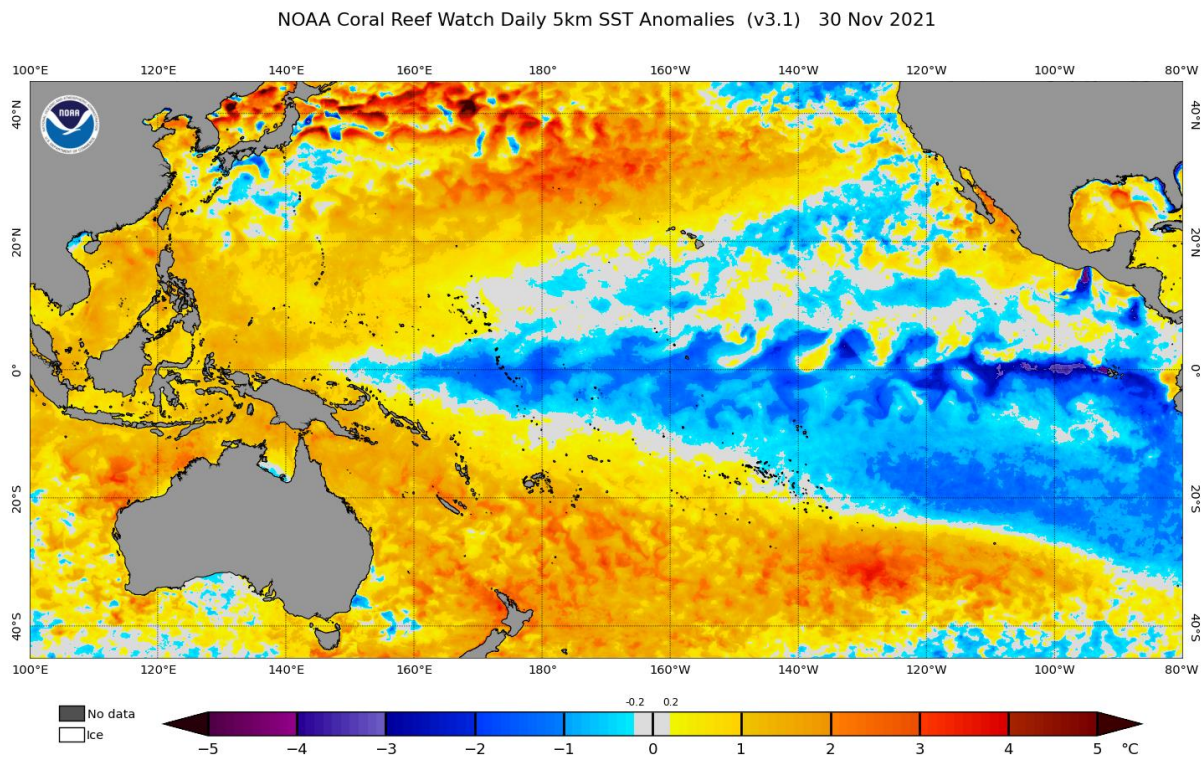


Figure 1. NOAA Coral Reef Watch's Satellite Sea Surface Temperature (SST) Anomaly product for the Pacific region.

Over the past three months, Coral Bleaching HotSpots have dissipated from much of the Northern Hemisphere, with the change in seasons. Regions where HotSpots remain above 1 °C are focused in the western Pacific, from Guam to Papua New Guinea and portions of the Coral Triangle (Figure 2). The western Federated States of Micronesia, Palau, and Papua New Guinea have all reached Alert Level 1, with the remainder of the Pacific at a Bleaching Watch or lower (Figure 3).

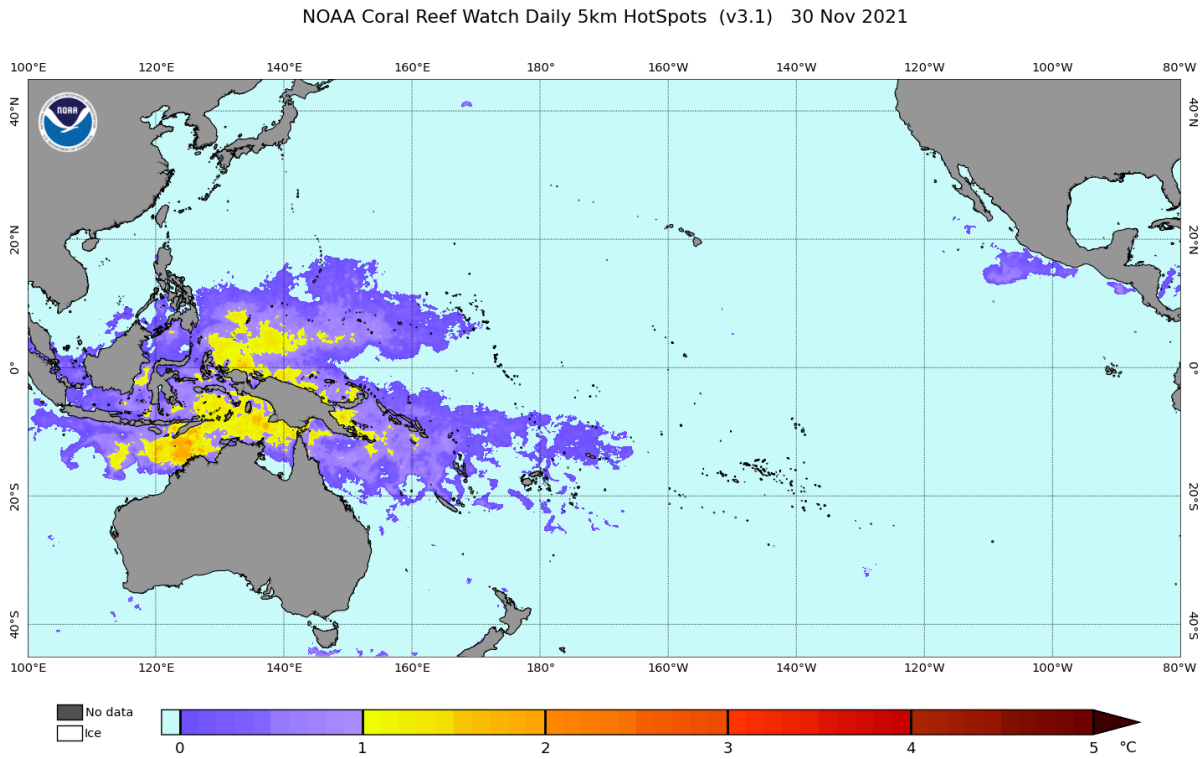


Figure 2. NOAA Coral Reef Watch’s Satellite Coral Bleaching HotSpot product for the Pacific region.

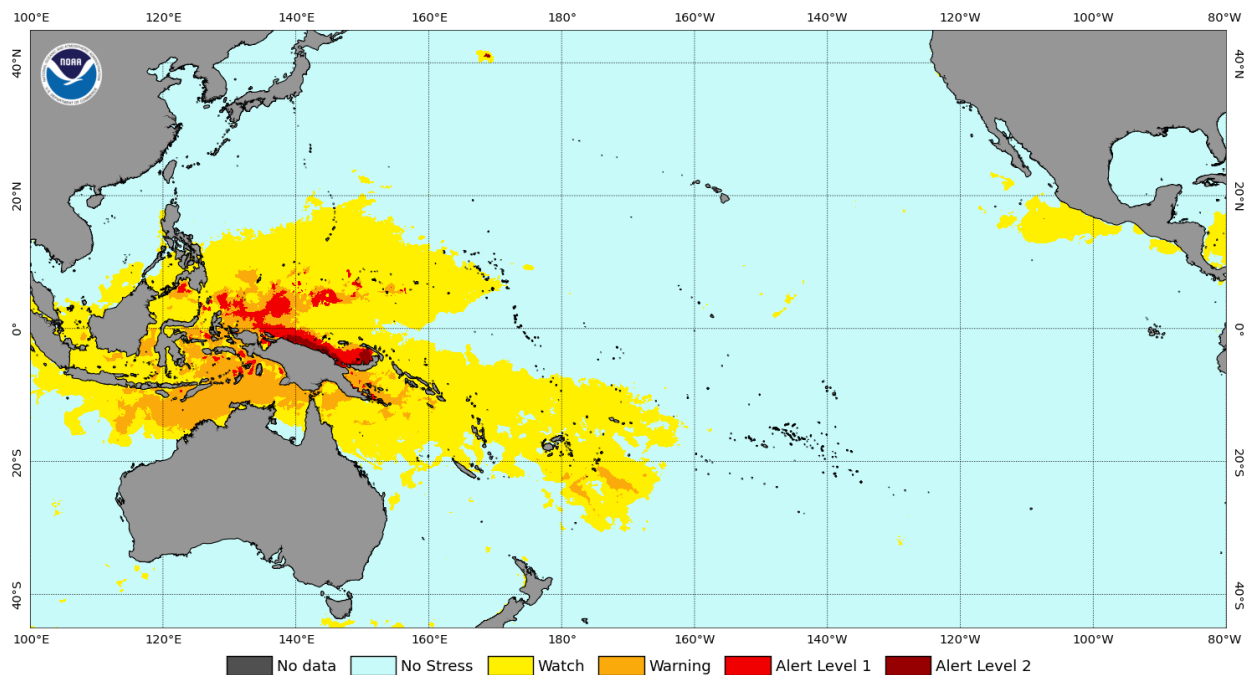


Figure 3. NOAA Coral Reef Watch’s Satellite Bleaching Alert Area (7-day maximum) product for the Pacific region.

CRW’s most recent [Four-Month Coral Bleaching Outlook](#) (Figure 4) projects heat stress will elevate to Alert Level 2 stretching from Papua New Guinea southeasterly toward Fiji and French Polynesia. Much of the Great Barrier Reef in Australia is predicted to be at Alert Level 2 by mid-February 2022, and American Samoa is expected to reach Alert Level 1 by March 2022. NOTE: We recommend that users continue to monitor updates in the Four-Month Outlook predictions, for their regions of interest/concern, over the months ahead, along with the changes in coral bleaching heat stress detected by NOAA CRW’s satellite products. Since February and March are still a few months away, unpredictable weather events in future weeks to months may alter heat stress development. Additionally, as the prediction lead time increases, prediction accuracy usually decreases.

2021 Nov 30 NOAA Coral Reef Watch 60% Probability Coral Bleaching Heat Stress for Dec–Mar 2022  
 Experimental, v5.0, CFSv2–based, 28 to 112 Ensemble Members

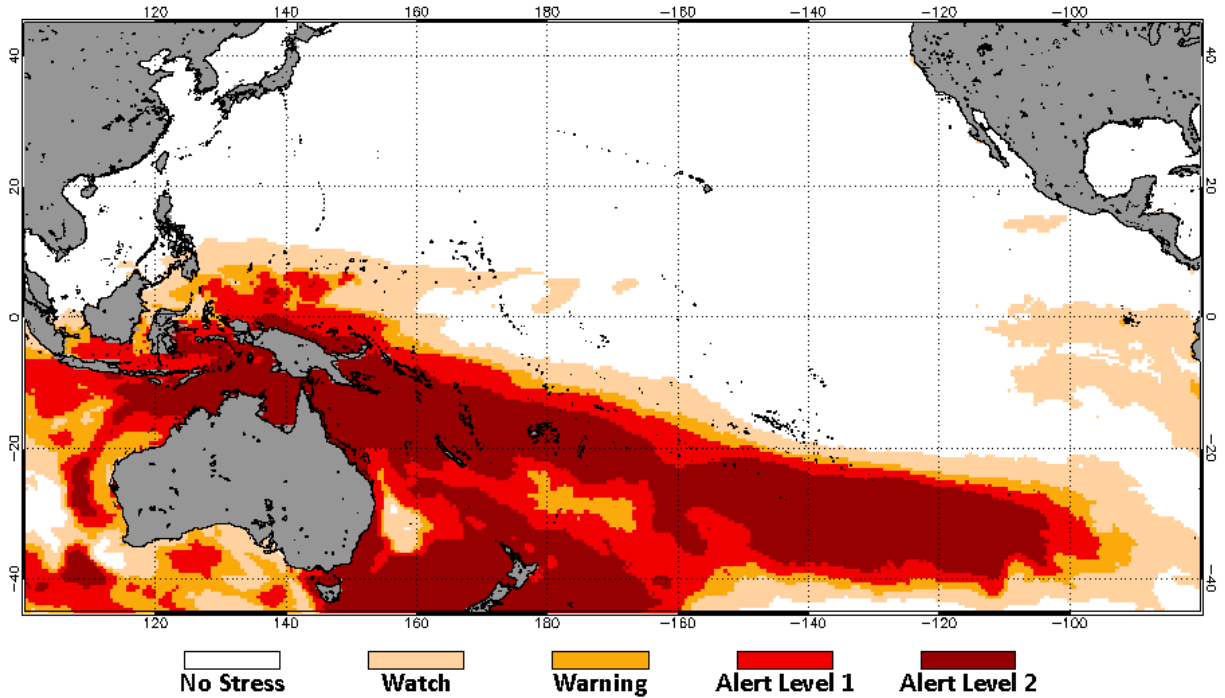


Figure 4. NOAA Coral Reef Watch’s Four-Month Coral Bleaching Outlook of November 30, 2021 for the period December 2021–March 2022 for the Pacific region.

**\*\*\*NOTE: This report incorporates NOAA Coral Reef Watch's Version 3.1 (or v3.1) 5km satellite-based coral bleaching heat stress products and v5 Four-Month Coral Bleaching Outlook.\*\*\***

To monitor the intensity and location of heat stress in your coral reef region of interest, please follow NOAA Coral Reef Watch’s satellite monitoring and modeled outlooks closely in the coming weeks: <https://coralreefwatch.noaa.gov/product/5km/index.php> and [https://coralreefwatch.noaa.gov/satellite/bleachingoutlook\\_cfs/outlook\\_cfs.php](https://coralreefwatch.noaa.gov/satellite/bleachingoutlook_cfs/outlook_cfs.php).

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