

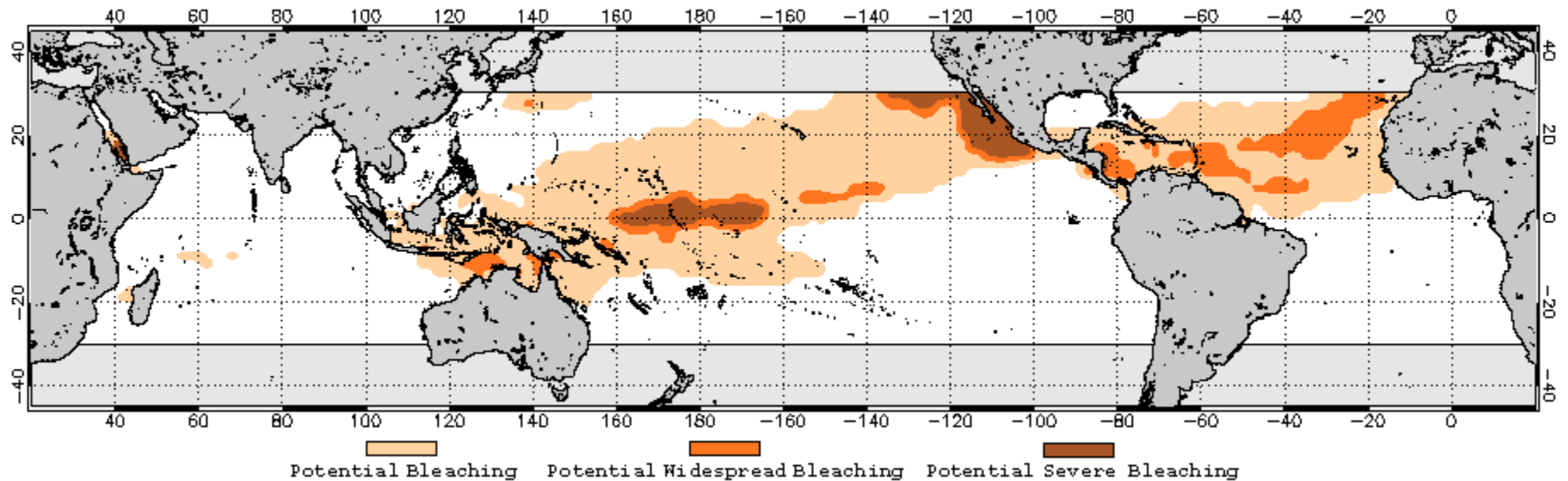
NOAA Coral Reef Watch
Seasonal Coral Bleaching Thermal Stress Outlook
(Experimental product, 2x2 degree spatial resolution)

September NOAA Coral Reef Watch Thermal Stress Guidance Through December 2009

The NOAA Coral Reef Watch (CRW) [Coral Bleaching Thermal Stress Outlook](#) indicates that the potential for coral bleaching in the Caribbean in 2009 has lessened. While there continues to be an elevated potential for higher than normal temperatures in 2009, severe thermal stress is less likely than earlier outlooks indicated. There is still some potential for thermal stress that may lead to bleaching along the Pacific coast of Mexico and islands in the equatorial central Pacific Ocean. So far, it appears unlikely that bleaching will be severe in those areas either.

NOAA's operational Climate Forecast System continues to call for [El Niño development during 2009-10](#). If El Niño conditions continue to strengthen, this could increase the bleaching risk in the central to eastern Pacific and Caribbean late this year and next year. Remember that this guidance should be used as an indicator of potential general patterns rather than a precise predictor of thermal stress at any location.

2009 Sep 15 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Sep-Dec 2009



Caribbean and Eastern Pacific Bleaching Outlook:

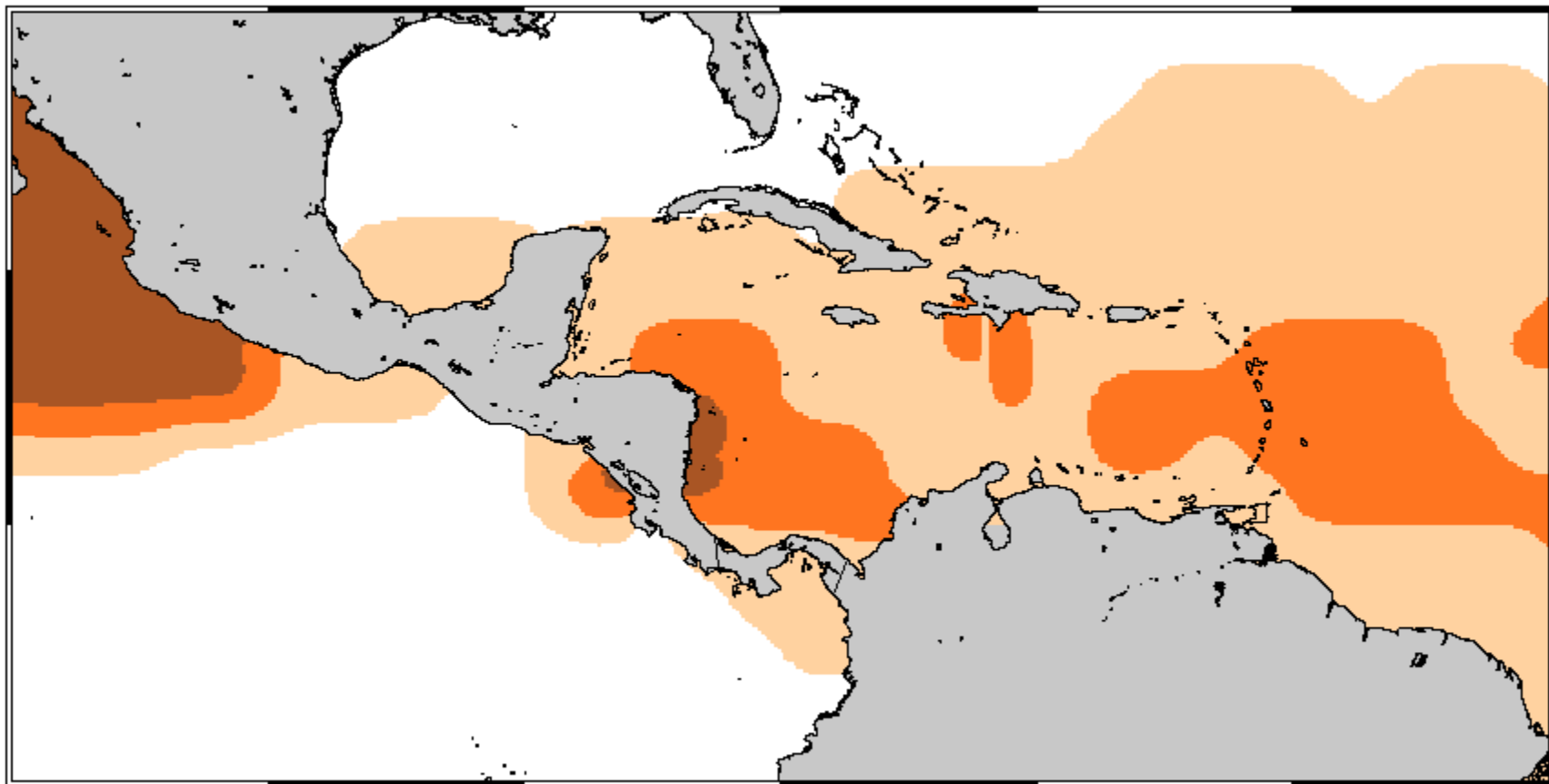
Temperatures across the Caribbean have continued to be warmer than normal during 2009 and have continued to rise in many areas. However, in most parts of the basin we have not seen accumulation of thermal stress at levels that causes significant bleaching. The current forecast model indicates that slightly elevated temperatures are likely to continue across the Caribbean basin through the end of the 2009

bleaching season. This is a marked improvement from concerns of prolonged high temperatures that were prompted by the models earlier in the year. Thermal stress may reach levels high enough to cause some bleaching, especially in the Lesser Antilles and the Caribbean coast of Central America. While significant accumulation of thermal stress is no longer expected, some areas still may be at some risk of bleaching.

NOAA's operational Climate Forecast System and other meteorological agencies continue to call for [development of El Niño conditions during 2009-10](#). Typically this has the strongest impact in the Caribbean during the second year of the El Niño (2010). With the developing El Niño, temperatures may continue to increase in the eastern Pacific Ocean off Mexico, posing a concern for some bleaching of coral reefs along that coast.

The following figure shows the current Caribbean 4-month cumulative thermal stress potential through December 2009.

2009 Sep 15 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Sep–Dec 2009



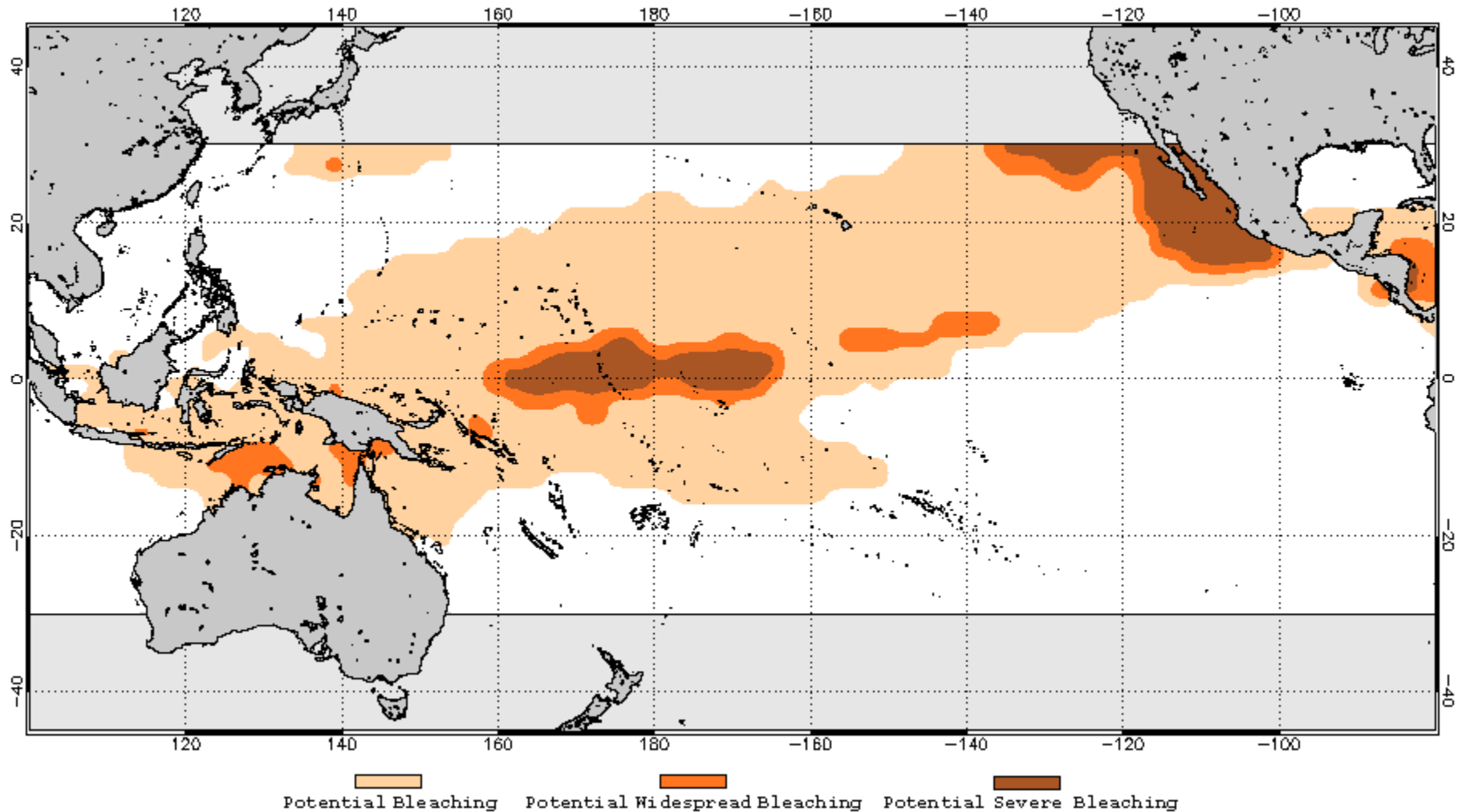
Legend: Potential Bleaching Potential Widespread Bleaching Potential Severe Bleaching

Pacific Bleaching Outlook:

While there is still some indication that higher than normal temperatures may continue in the central equatorial Pacific from Kiribati to the Marshall Islands, the threat of significant accumulation of thermal stress has abated there as well. This region is also subject to intensification during El Niño conditions, so El Niño forecasts should be monitored in the coming months as any strengthening or weakening of the El Niño may change the potential for bleaching.

The following figure shows the current Pacific 4-month Coral Bleaching Outlook through December 2009.

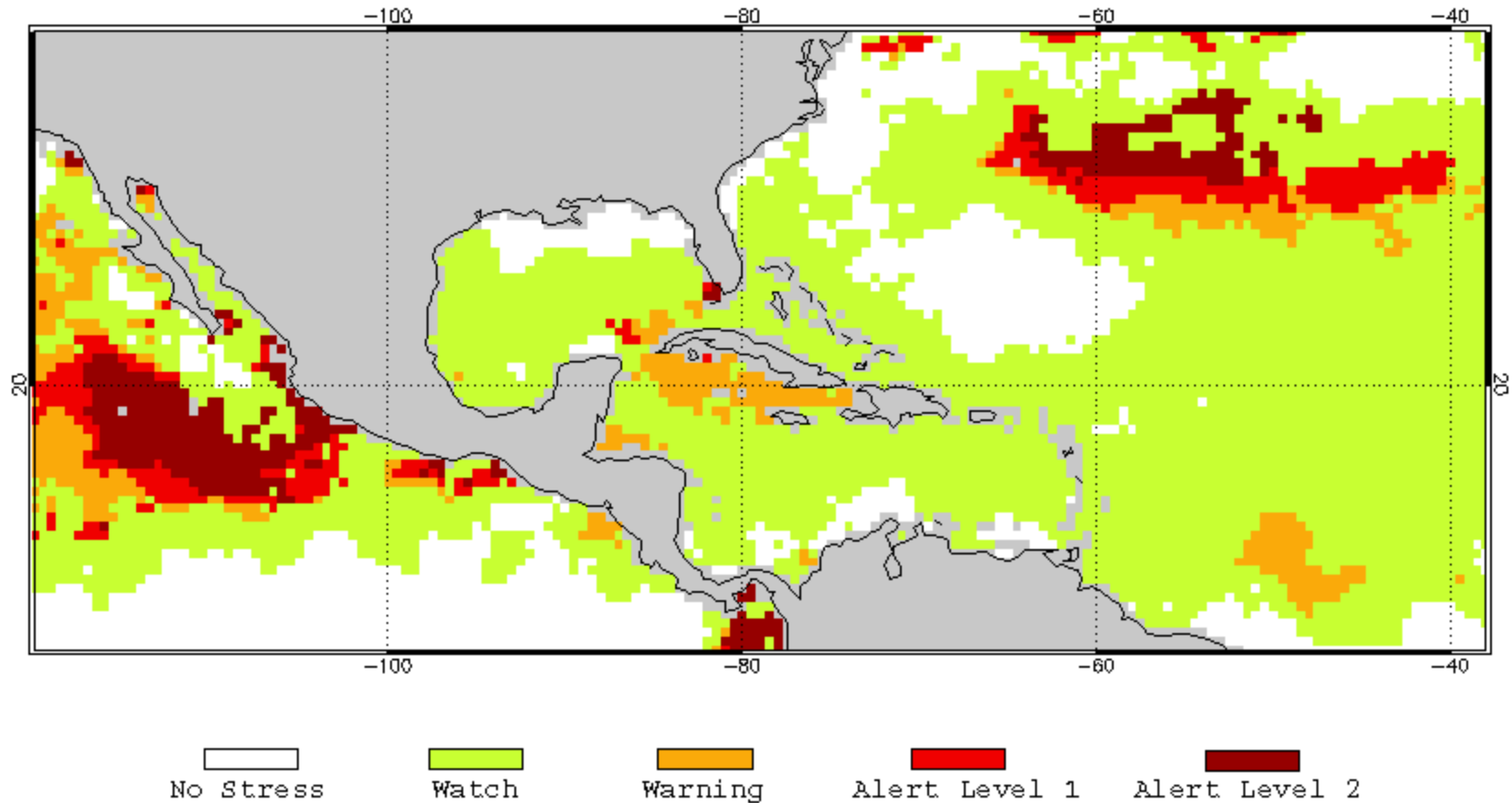
2009 Sep 15 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Sep–Dec 2009



Current Bleaching Conditions:

Temperatures continue to be above normal and are rising in most of the Caribbean, but temperatures and thermal stress accumulation are not as high as those seen in August 2005, particularly around Puerto Rico and the Lesser Antilles. Only a few localized areas have experienced significant accumulation of thermal stress – of particular note are prolonged high temperatures in Florida Bay. Recently, the Caribbean Mexican and Belizean coasts of Central America, southern Cuba, Cayman Islands, and Jamaica have experienced the highest water temperatures of this decade and need to be closely monitored during the next month. Note: high thermal stress levels in the Gulf of Panama are the result of a known error in the climatology used for our products. CRW's current HotSpot and DHW data should be disregarded in the Gulf of Panama until we release our new, Enhanced-50km version of the CRW products later this year.

NOAA Coral Reef Watch Satellite Coral Bleaching Alert Area
14 Sep 2009



Temperatures across much of the Pacific are above normal, consistent with El Niño development. However, the Pacific coast of Mexico is the only reef-bearing area that has experienced significant accumulation of thermal stress.

NOAA Coral Reef Watch Satellite Coral Bleaching Alert Area
14 Sep 2009

