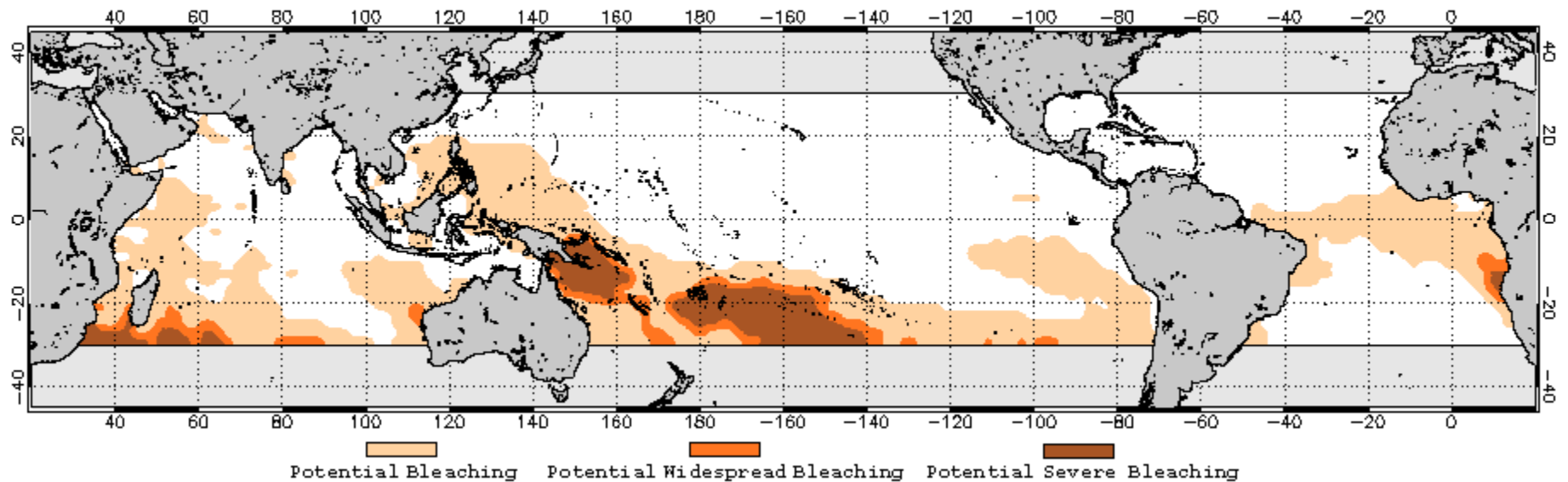


NOAA Coral Reef Watch  
**Seasonal Coral Bleaching Thermal Stress Outlook**  
(Experimental product, 2x2 degree spatial resolution)

**February NOAA Coral Reef Watch Bleaching Thermal Stress Outlook Through May 2009**

The NOAA Coral Reef Watch (CRW) Bleaching Thermal Stress Outlook continues to indicate that the greatest chance of bleaching during the upcoming austral summer will be in the region bounded by Papua New Guinea, the Solomon Islands, the northern Great Barrier Reef (GBR), and New Caledonia. Model runs now suggest that all of the GBR may experience some degree of bleaching this year. Currently, the forecast system suggests that thermal stress with a high potential for bleaching possible in that region with thermal stress in a band stretching from the Coral Triangle region southeast beyond Fiji and perhaps to French Polynesia. The severity of bleaching risk is reduced from that issued in the January outlook, primarily due to extensive cloud cover and an active monsoon trough over the region. This weather pattern has prevented further warming in the Coral Sea, substantially reducing the risk of bleaching. The following figure shows the most recent global 16-week Coral Bleaching Outlook from the 03 February 2009 model run.

2009 Feb 03 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Feb–May 2009



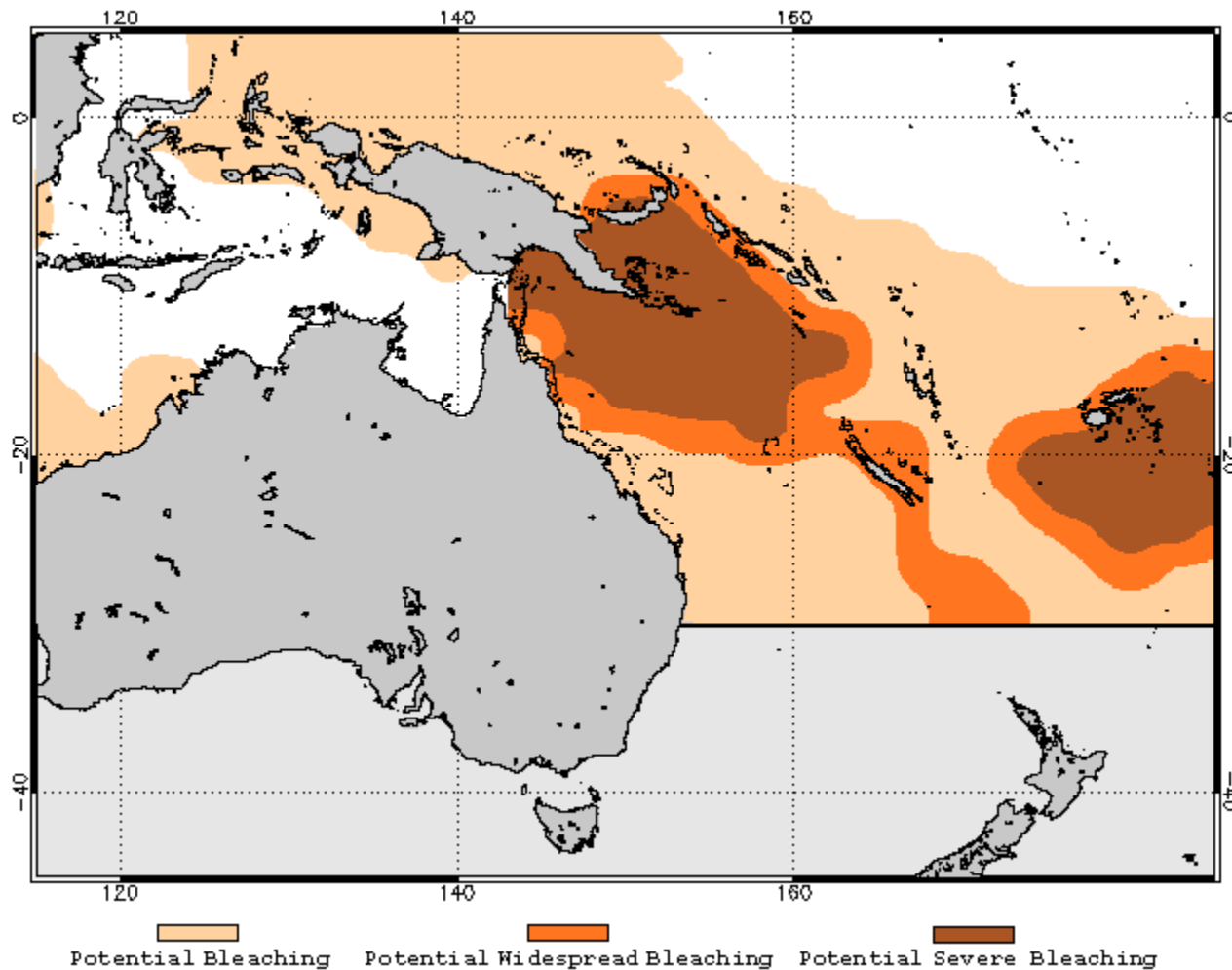
The Bleaching Thermal Stress Outlook is based on sea surface temperature (SST) forecasts generated by the Linear Inverse Model from the NOAA Earth System Research Laboratory. In a normal year, the Outlook forecasts no potential for bleaching. When forecast SST exceeds bleaching thresholds over a long enough period to cause bleaching, the outlook maps display the bleaching potential. Actual conditions may vary due to model uncertainty, subsequent changes in climatic conditions, extreme localized variability, or weather patterns.

### Indo-Pacific Bleaching Thermal Stress Outlook:

The area likely to experience the highest temperature anomalies and greatest potential for widespread bleaching during the next 12 weeks is a region extending southeast from Papua New Guinea to the Solomon Islands, the northern GBR, and New Caledonia.

To the west of Torres Strait, the model and satellite data now indicate that there is little threat of bleaching to most of Indonesia, where accumulation of thermal stress ([Degree Heating Weeks or DHW](#)) has remained below critical levels, [HotSpot](#) values have continued to drop and the threat of thermal stress in the model is low to non-existent in most of Indonesia in the coming weeks. The model currently predicts a threat of moderate levels of thermal stress east of Torres Strait.

2009 Feb 03 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Feb–May 2009

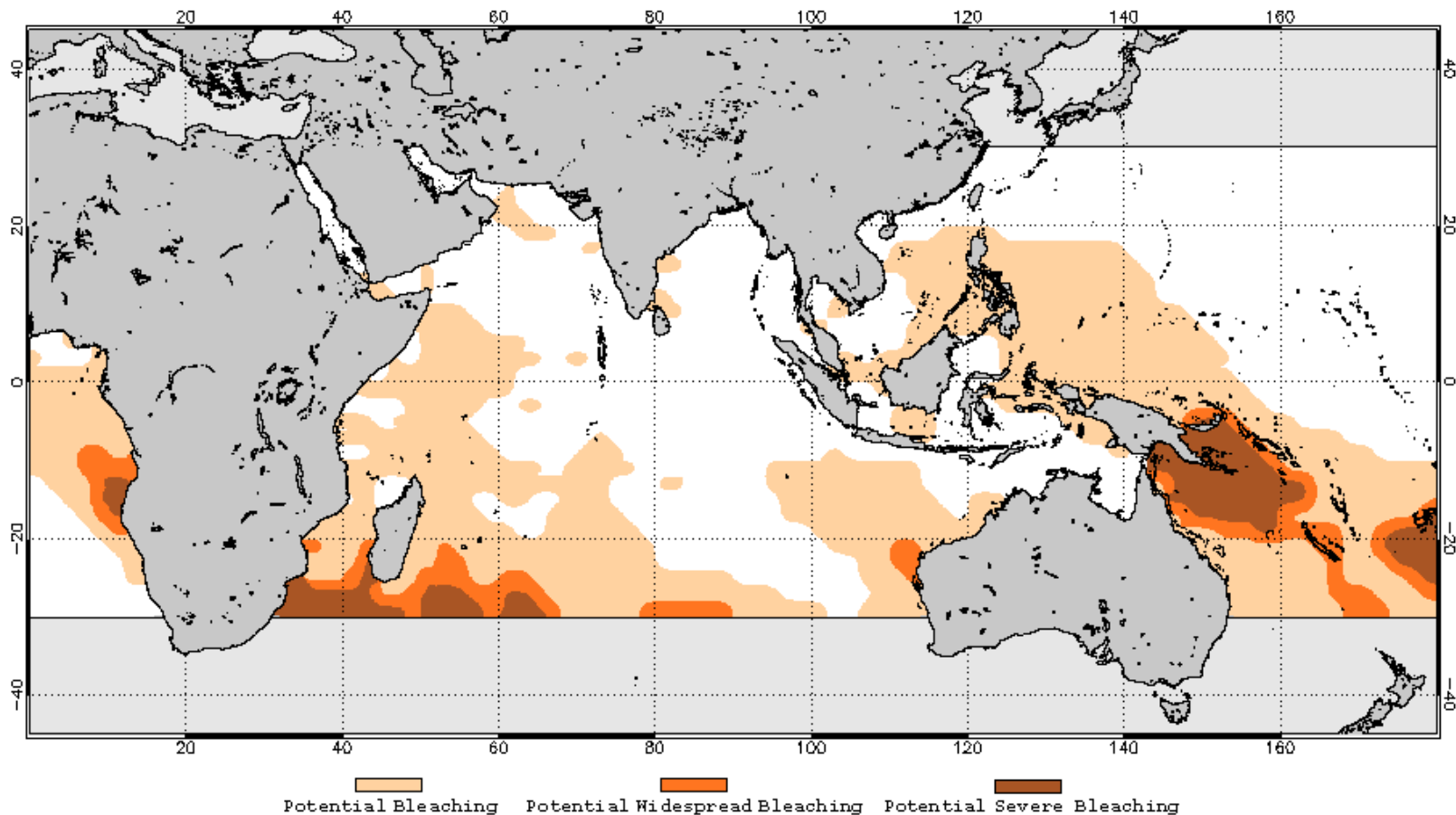


Bleaching stress is likely to vary along the GBR with higher and longer-lasting anomalies to the north and milder stress to the south. While the model still indicates a stronger potential for bleaching in the Far Northern and Central Sections, the severity of bleaching risk is reduced from that issued in the January outlook, primarily due to extensive cloud cover and an active monsoon trough over Queensland. This weather pattern has prevented further warming in the Coral Sea, substantially reducing the risk of bleaching. This is consistent with results of the POAMA model from the Australian Bureau of Meteorology that is predicting higher than normal temperatures. NOAA CRW's bleaching outlook model shows continued moderate risk of thermal stress on the GBR through February. It should be noted that the bleaching potential is highest during February and current cyclonic patterns are likely to reduce both the heating and light-stress needed for bleaching.

Significant thermal stress is likely in a region extending from the GBR east past the Solomon Islands, Vanuatu, New Caledonia, past Fiji to Raratonga and perhaps parts of French Polynesia. However, the threat of bleaching has been downgraded in this area as well.

Some mild stress may be seen in the Indian Ocean including around Madagascar. Some mild bleaching has been reported around Mauritius.

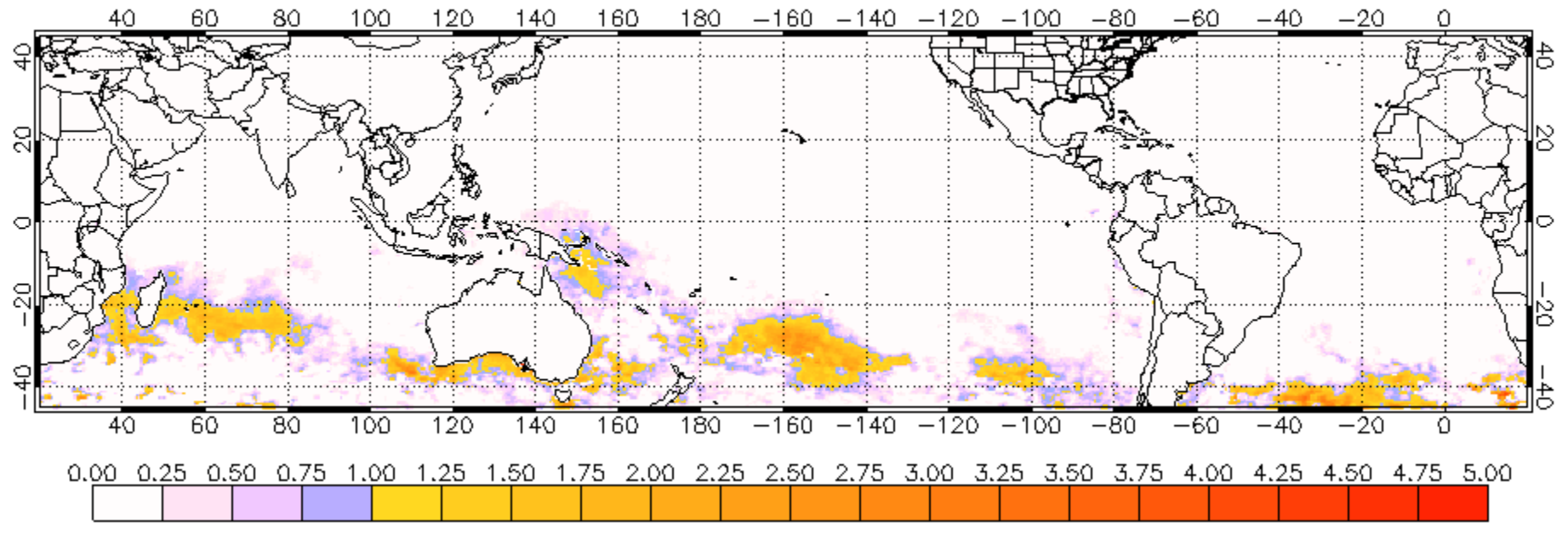
2009 Feb 03 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Feb–May 2009



### Current Indo-Pacific Bleaching Conditions:

As of the first week of February 2009, waters are warming in a diagonal band in the Pacific from the Coral Sea to south of Raratonga and in the Indian Ocean around Madagascar, while waters are cooling around Indonesia. Some warming began last month along the northern Great Barrier Reef (GBR), but has subsided under cyclonic conditions. Thermal stress continues to accumulate just east of Torres Strait and in the region between Papua New Guinea and the Solomon Islands, near New Caledonia, and south of Tonga and the Cook Islands. Reef locations in the east of the Strait, the eastern-most islands of Papua New Guinea (Venema and Rossel Islands), and the western side of the southern Solomon Islands exceed DHW of 4 (Alert Level 1) and continue to warm. However, cloudiness and rainfall around the Solomon Islands may cool reefs close to shore and provide input of low salinity water.

NOAA/NESDIS Coral Bleaching HotSpots, 2/5/2009



NOAA/NESDIS Degree Heating Weeks for last 12 Weeks - 2/5/2009

