



SEAFAN BleachWatch Program

CURRENT CONDITIONS REPORT #20230712

JULY 12, 2023



Summary: Based on climate predictions and field observations, the threat for mass coral bleaching in the Kristin Jacobs Coral Reef Ecosystem Conservation Area (Miami-Dade to Martin counties) is MODERATE as of July 12, 2023.

Bleaching Alert Area

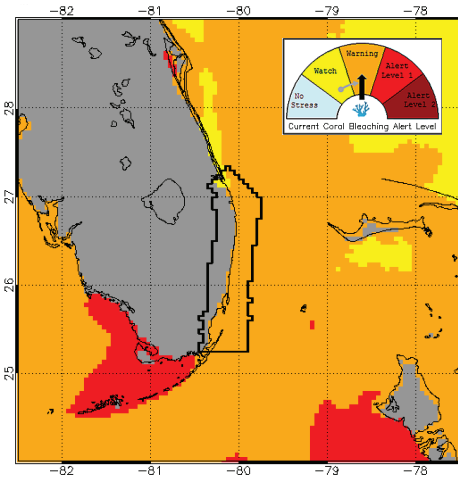


Figure 1. NOAA Coral Reef Watch Bleaching Alert Area for 7/12/2023

HotSpot

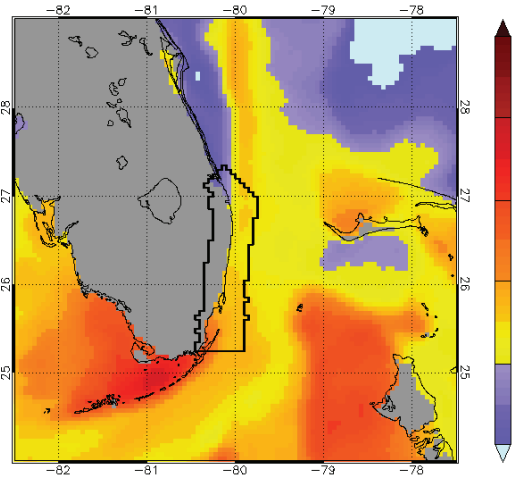


Figure 2. NOAA Coral Reef Watch Bleaching HotSpots for 7/12/2023

Degree Heating Week

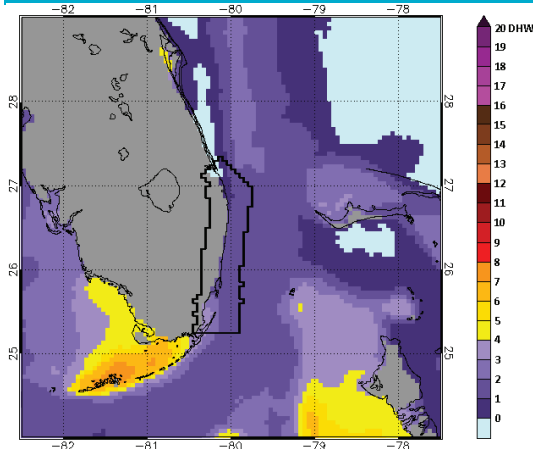


Figure 3. NOAA Coral Reef Watch Degree Heating Week for 7/12/2023

Regional Virtual Station Data

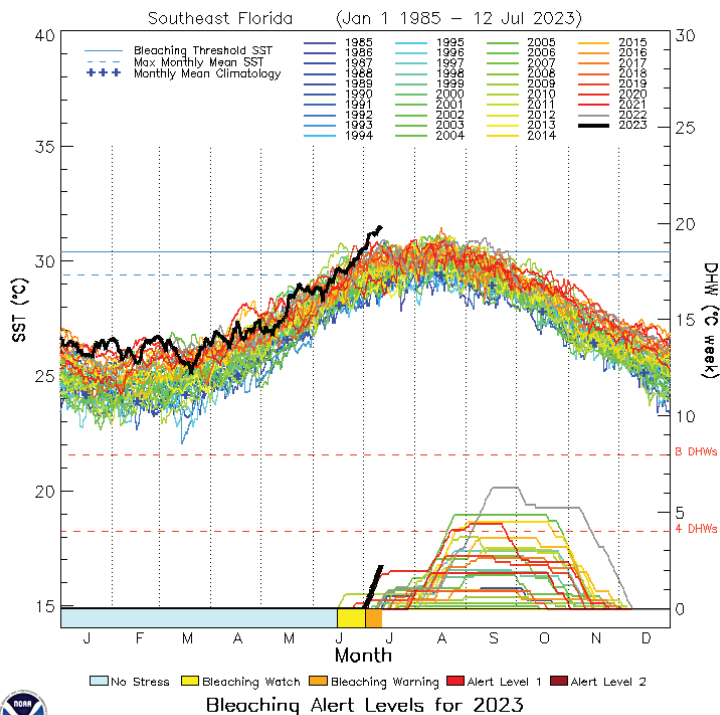
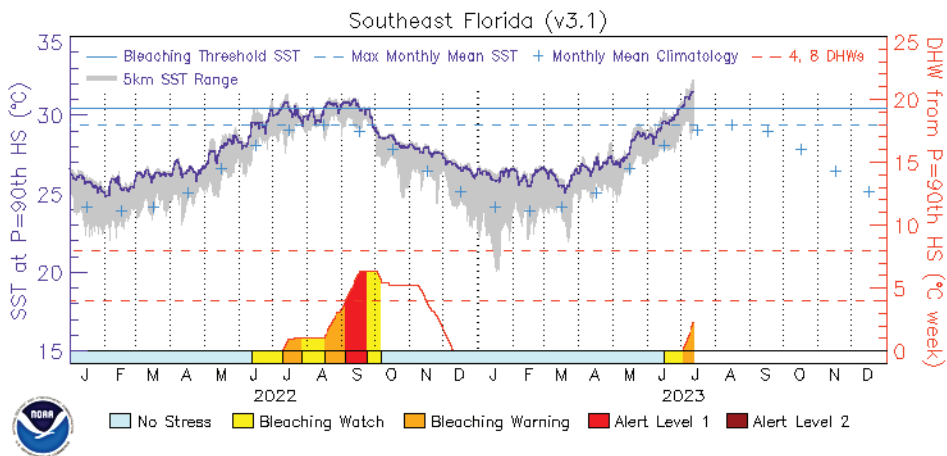


Figure 4. NOAA Coral Reef Watch Southeast Florida Regional Virtual Station Data. Top: Two-year time series graph of 1/1/2022 - 7/12/2023. Bottom: Multiyear time series graph of 1/1/1985 - 7/12/2023. In the multi-year time series graph, note that the black line is data from 2023 and indicates that sea surface temperatures (SSTs) have been among the hottest on record all year, and that the most recent spike is unprecedented in the satellite record (dating back to 1985).



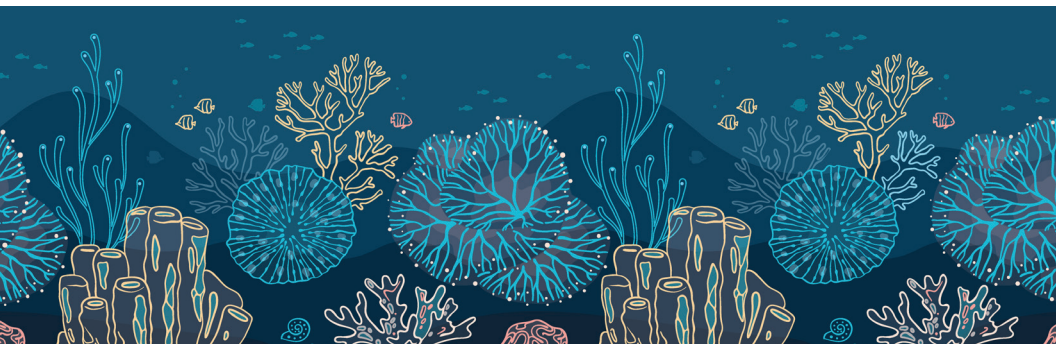
ENVIRONMENTAL MONITORING

Climate predictions for this Current Conditions Report are based on the National Oceanic and Atmospheric Administration's (NOAA) Coral Reef Watch (CRW) satellite imagery, which summarizes coral bleaching heat stress conditions derived from satellite sea surface temperature (SST) data and provides an indication of when conditions are favorable for coral bleaching. **The current (as of July 12, 2023) CRW daily 5km Coral Bleaching Alert Area indicates that the Southeast Florida region is experiencing moderate thermal stress and is under a Bleaching Warning (Figure 1).**

- NOAA's CRW's daily 5km Coral Bleaching HotSpots map (**Figure 2**) compares the current SST to the maximum monthly mean (MMM) SST climatology. Corals can start to become stressed and show signs of bleaching when SST is at least 1° C greater than the MMM (i.e., HotSpot is $\geq 1^{\circ}$ C). **Currently, the SST is above the 1° C HotSpot bleaching threshold.**
- Coral bleaching risk increases if the temperature stays elevated for an extended period of time. NOAA CRW's daily 5km Degree Heating Week (DHW) map (**Figure 3**) shows the accumulated heat stress over the previous 12 weeks, with 1 DHW (1° C-week) equivalent to one week at 1° C greater than the MMM. **Currently, this map indicates that temperature stress has accumulated across the Southeast Florida region.**
- Near real-time data from CRW's daily 5km satellite Regional Virtual Station for Southeast Florida indicates that **SST in the region is above the MMM climatology and above the bleaching threshold (MMM+1° C) of the region (Figure 4).**

SSTs are currently higher than the monthly mean climatology of July in Southeast Florida as well as above the MMM and bleaching threshold (MMM+1° C). The Southeast Florida Coral Bleaching Alert Area Outlook for the **upcoming four weeks** predicts that the region will reach a **Bleaching Alert Level 1, associated with significant coral bleaching (Figure 5A)**. The **five- to eight-week** Outlook indicates that the region will reach a **Bleaching Alert Level 2, associated with severe coral bleaching and likely significant coral death (Figure 5B)**. The **nine- to 12-week** Outlook indicates the region will continue to be under a **Bleaching Alert Level 2 (Figure 5C)**.

The Florida Department of Environmental Protection's Coral Reef Conservation Program will continue to monitor NOAA's HotSpot, DHW, Bleaching Alert Area, and Outlook maps as well as the Regional Virtual Station data for the remainder of the summer bleaching season.



Bleaching Alert Area Outlooks



Southeast Florida Bleaching Alert Area (v3.1) and Outlook (v5)
2023-07-12

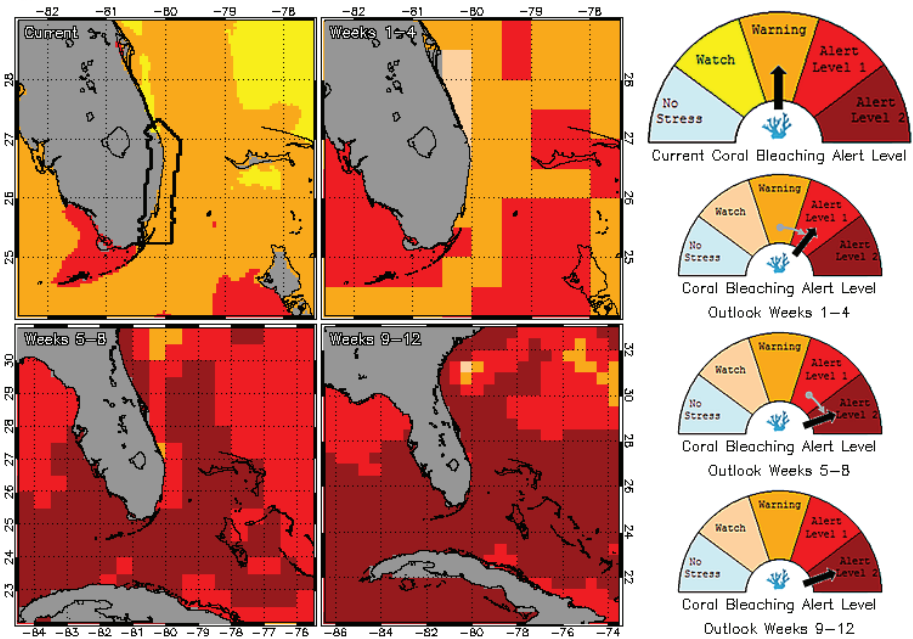
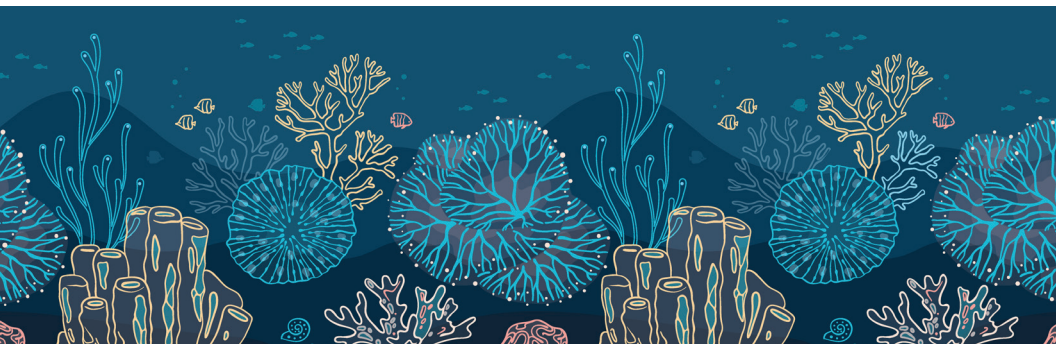


Figure 5. NOAA CRW Southeast Florida Coral Bleaching Alert Area Outlook (60% Probability) for the Weeks of July 17, 2023, Through Oct. 8, 2023.





OBSERVER NETWORK

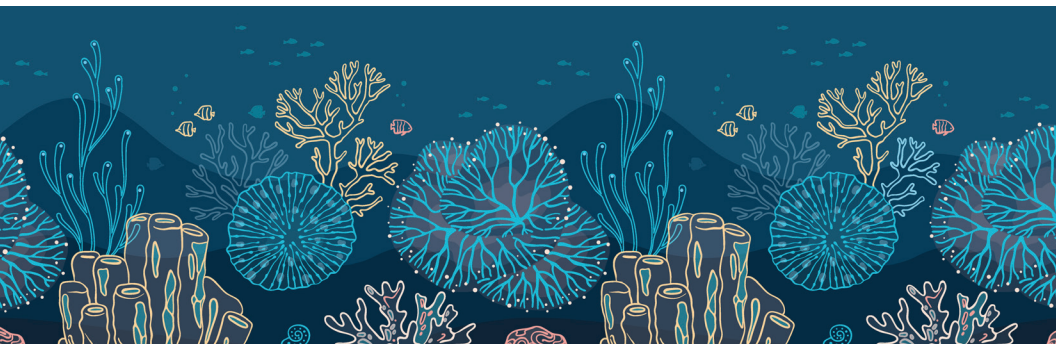
BleachWatch has received 21 reports since June 4, 2023. Geographically, there were 13 reports from Broward County, two reports from Palm Beach County and two reports from Miami-Dade County. Four reports were submitted from Monroe County and referred to Mote Marine Laboratory's [Florida Keys BleachWatch Program](#).

Of these 21 reports, 11 indicated coral colonies were exhibiting signs of paling, partial bleaching or fully bleaching. Geographically, there was one report from Palm Beach County, six from Broward County, two from Miami-Dade County and two from Monroe County. At those sites where paling/partial bleaching/full bleaching was observed, the overall percentage of coral exhibiting signs of thermal stress was 1% to 30%. Coral bleaching was observed on brain, branching, leaf/plate/sheet and mound/boulder/encrusting corals. There were also observations of bleaching gorgonians (soft corals).

Coral disease continues to pose a threat to Florida's Coral Reef. Of the 21 reports received since early June, five reports noted observations of coral disease. Geographically, there was one report from Palm Beach County, one from Broward County, two from Miami-Dade County and one from Monroe County. At those sites where disease was observed, the overall percentage of coral exhibiting signs of disease was 1% to 10%. Tissue loss and black band diseases were observed on mound/boulder/encrusting corals. There were no reports of growth anomalies or other unknown diseases within Martin, Palm Beach, Broward and Miami-Dade counties.

The next Current Conditions Report will be issued in August. Given the increasing temperatures, SEAFAN encourages the BleachWatch network to [submit reports](#) on coral bleaching and disease after every dive on the reef. This includes reports of "No Bleaching" and "No Disease." **Frequent observer reports will be critical to help determine where coral bleaching is most severe this warm season.**

For more information about [SEAFAN BleachWatch](#) or to take a [BleachWatch Training](#) and become a part of the observer network, please contact the Reef Resilience Coordinator at 561-681-6631 or email Coral@FloridaDEP.gov.



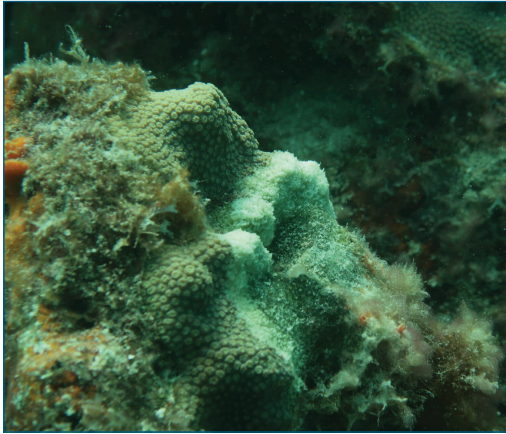


Figure 6. Mountainous star coral (*Orbicella favelota*) experiencing tissue loss disease in Miami-Dade County. Photo by BleachWatch Observer Alessandra Van Rossem.



Figure 7. Healthy grooved brain coral (*Diploria labyrinthiformis*) in Miami-Dade County. Photo by BleachWatch Instructor Juliana Grilo.

The threat for mass coral bleaching for the southern portion of Florida’s Coral Reef between Miami-Dade and Monroe counties is HIGH as of July 14, 2023. [Learn more about current conditions for this portion of the reef.](#)

Program Partners

