

Coral reefs are complex ecosystems formed by corals which are made up smaller organisms known as coral polyps. Within the coral's tissues, the polyps host a vital partnership with unicellular algae called zooxanthellae, which harness sunlight through photosynthesis to provide up to 90% of the polyps' energy needs. These symbiotic zooxanthellae are typically golden brown and contribute to the coral's vibrant and "healthy" appearance.

When corals undergo stress, they may expel or lose their zooxanthellae, revealing the transparent tissue and exposing the underlying white coral skeleton, resulting in a bleached appearance. This phenomenon is termed "coral bleaching." If the stress persists or becomes severe, it can lead to death. Coral bleaching plays a significant role in the global decline of coral reefs, diminishing vital habitats for various marine life, including fish and spiny lobsters. Moreover, healthy coral reefs serve as natural barriers, protecting coastal cities like Miami by absorbing wave energy, thereby reducing the risk of flooding.

Certain weather conditions, such as calm winds and clear sunny days, can trigger an increase in sea temperatures and are often associated with large-scale bleaching events. To anticipate coral stress during elevated sea surface temperatures, experts monitor seasonal climate forecasts and local weather predictions for indicators like light winds and reduced cloud cover, which tend to intensify stress during the summer months.

Monitoring sea surface temperature is an essential component of the NOAA Coral Reef Watch program. They offer a range of internet-based satellite imagery products summarizing temperature data and predicting conditions conducive to coral bleaching. Even small, sustained temperature increases over weeks or rapid spikes over a few days can stress corals, potentially leading to mass bleaching events. These tools are crucial for assessing thermal stress and identifying the risk of coral bleaching, particularly in southeast Florida.

For the latest, near real-time updates on heat stress in southern Florida, you can access the NOAA Coral Reef Watch website at <https://coralreefwatch.noaa.gov/>. If you have questions or comments, please reach out to coralreefwatch@noaa.gov.

To support Florida's Coral Reef during bleaching season, join the BleachWatch program. By participating, you can assist reef managers and scientists by providing valuable information on bleaching corals to aid in management decisions. Additionally, you can help minimize stress on the reefs by wearing sun-protective clothing, avoiding anchoring near live coral habitats, refraining from touching corals with hands, feet, or fins, and advocating for measures to reduce CO2 emissions to mitigate climate change's impact on these precious ecosystems.



Healthy staghorn coral colony (*Acropora cervicornis*) in Broward County by BleachWatch Observer Nikole Heath.



Bleached staghorn coral colonies (*Acropora cervicornis*) in Miami-Dade County by BleachWatch Observer Remedy Rule.