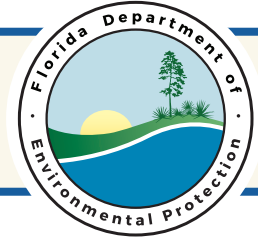


CORAL BLEACHING



The National Oceanic and Atmospheric Administration (NOAA) Coral Reef Watch Program reports that the third global coral bleaching event is underway. It started in 2014 and is expected to last through 2016. Coral reefs have experienced bleaching and mortality in several parts of the world, including Hawaii, American Samoa and Florida. The last global coral bleaching event occurred in 1997-98, when 15-20 percent of the world's coral reefs were functionally lost. Due to coral's slow growth, recovery takes significant time.

About Coral Bleaching

Coral bleaching is a stress reaction of the coral animals that happens when they expel their symbiotic algae, zooxanthellae, which is their main food and energy source.

Bleached corals are living but are less likely to reproduce and are more susceptible to disease, predation and mortality. If stressful conditions subside soon enough, the corals can survive the bleaching event; however, if stresses are severe or persist, bleaching can lead to coral death.

Causes of Coral Bleaching

Large-scale coral bleaching events are driven by extreme sea temperatures and are intensified by sunlight stress associated with calm, clear conditions. The highest water temperatures usually occur between August and October. Corals become stressed when sea surface temperature is 1°C greater than the highest monthly average. Coral bleaching risk increases if the temperature stays elevated for an extended time.



(L-R): Massive Starlet coral (Siderastrea siderea) displaying a typical blue bleaching color and bleached Lettuce coral (Undaria agaricites). Photo: Jenny Wuenschel

While records show that coral bleaching events have been occurring for many years throughout Southeast Florida, NOAA indicates that bleaching events have steadily increased in frequency and severity during the last few decades.

Coral bleaching can be caused by other stressors including but not limited to pollution, increased sedimentation and salinity, low oxygen, disease and predation.

Not all corals are affected by bleaching in the same way. Reef communities are composed of a different mix of corals, and some reefs are affected more than others.

Levels of climate and environmental stress also vary among reefs, leading to differences in the amount of bleaching. These factors lead to questions about resilience of different reef communities and mass bleaching. Resilience is the coral's ability to resist the impacts of stresses or to recover quickly from them.

FAST FACTS

The Florida Reef Tract:

- Spans 358 miles
- Contributes \$6.3 billion to local economy
- Provides 71,000 jobs in the Southeast Florida region
- Supports more than 6,000 marine species
- Home to more than 40 species of stony coral, including seven listed as "Threatened" under the Endangered Species Act
- First line of coastal protection during major storms, slows wave action, minimizing flooding and erosion

continued

Monitoring

The Florida Department of Environmental Protection's Coral Reef Conservation Program (CRCP), the Florida Reef Resilience Program (FRRP) and other partners are currently monitoring the locations and severity of coral bleaching on the Florida Reef Tract.

Program partners conduct Disturbance Response Monitoring surveys to monitor coral bleaching during peak high water temperatures over a six- to eight-week period each year. The surveys help provide reef managers with the necessary information to develop effective management strategies for Florida's coral reefs.

Additionally, CRCP's Southeast Florida Action Network (SEAFAN) BleachWatch program helps to detect and monitor coral bleaching events in Southeast Florida and improve scientific understanding by:

- » Tracking weather conditions and sea surface temperatures for conditions favorable for coral bleaching;
- » Collecting field observations on the condition of the reef from trained observers, and;
- » Summarizing data and producing reports on the current conditions in the region.

By combining NOAA's climate and sea surface temperature data with field observations, the BleachWatch program creates a "[Southeast Florida Current Conditions Report](#)" that is distributed monthly during the summer.

How Can You Protect Reefs?

- » **Use navigational charts to locate coral reefs.**
Refer to [nautical charts](#) to determine if you are boating in a known reef area. From the water's surface, reefs appear golden-brown. Remember: Brown, brown, run aground; blue, blue sail on through.
- » **Tie up to mooring buoys or anchor in sand.**
Boaters, divers and snorkelers can reduce physical impacts to corals by using mooring buoys instead of anchoring directly on or near a reef. [Find mooring buoy locations](#).
- » **Eliminate marine debris and pollution.**
Pump out your sewage only at marina pump-out stations and dispose of trash in designated areas.
- » **If you dive or snorkel, don't touch!**
Avoid kicking or touching the corals. Disturbed sediments can smother and kill corals, so take care to stay off the bottom and avoid kicking up sand.
- » **Avoid trolling for fish above shallow reefs.**
Anglers should avoid shallow coral reefs when trolling.
- » **Follow fishing regulations.**
Fish and marine invertebrates, like lobster, crabs and shrimp, are integral to maintaining healthy reef ecosystems. [Learn and observe fishing regulations](#), seasonal closures and bag limits.



**Report observed coral bleaching
to Southeast Florida Action Network (SEAFAN)
[online](#) or call 866-770-7335**

Reports of 'No Bleaching' are just as important as bleaching reports.

SEAFAN is a reporting and response system designed to improve the protection and management of Southeast Florida's coral reefs by enhancing marine debris clean-up efforts, increasing response to vessel groundings and anchor damage, and providing early detection of potentially harmful biological disturbances.