USA - Florida

Regional summary of 22 dive sites (21 with their own page). Figures are averages across the sites that report them (n = sites with a value); each site's own page has its individual values.

0 — 5

Coral Health Index: 0.83/5



Photo: Anderson Mayfield/Coral Reef Diagnostics — Looe Key

COUNTRY

USA (Florida)

SITES

22

each linked below

HARD CORAL COVER (REGIONAL MEAN)

12% ± 9.4% (std. dev.)

n = 13 of 22 sites. range 1.4–32%

WATER TEMP. DURING SURVEYS (REGIONAL MEAN)

28.3°C

MOST RECENT WATER TEMPERATURE RECORD

28.5°C

26 Oct 2026 · Florida Keys

MOST RECENT HEAT STRESS RECORD

13.7°C-weeks

n = 17 of 22 sites; surveyed May 2019–Nov 2025; 5 sites logged as a range, counted at their midpoint

26 Oct 2026 · NOAA alert that day: no stress (water now below the bleaching threshold; 13.7°C-weeks built up over the last 12 weeks)

MEAN ANNUAL MAX DEGREE HEATING WEEKS (DHW), LAST 5 YEARS

10.7°C-weeks

2021–2025 · regional mean of 18 sites, 2 stations

HIGHEST ANNUAL HEAT STRESS

22.3°C-weeks 🔥

in 2023 · Florida Keys

SEVERE HEAT-STRESS YEARS

9

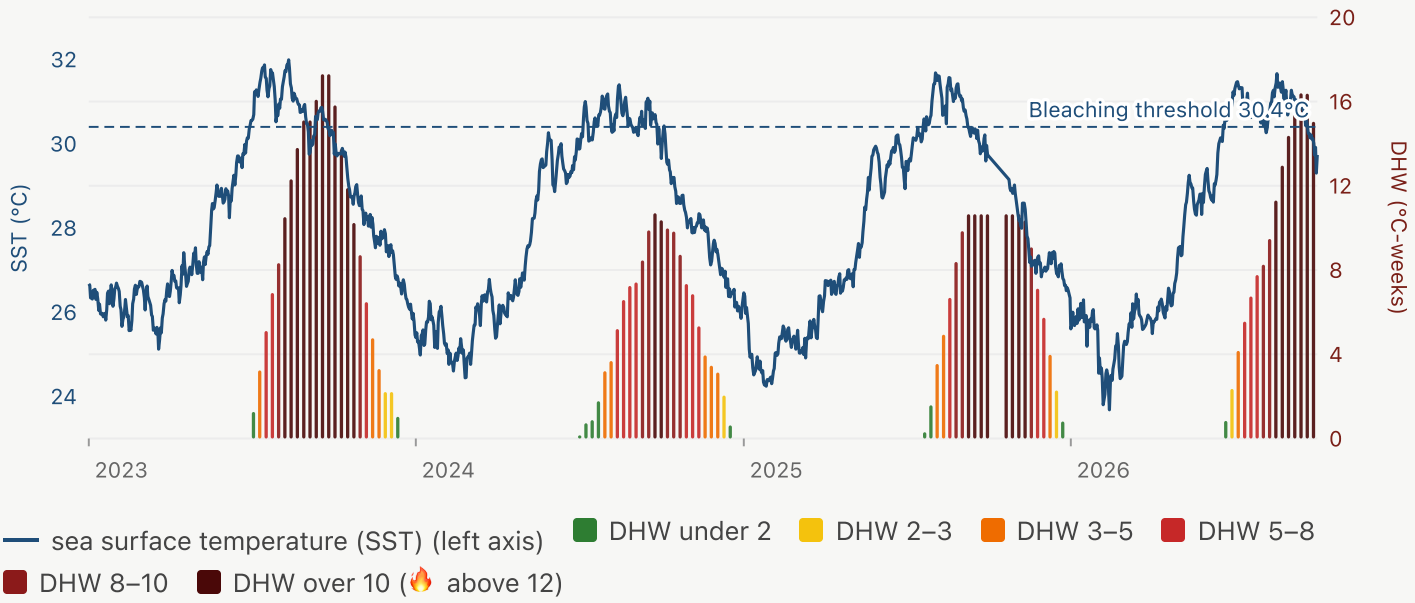
1985–2025 · 6 in the last 10 years

Heat-stress figures: NOAA Coral Reef Watch 5-km virtual stations: Florida Keys; Southeast Florida. Each pill links its source record and carries the values behind it.

REGIONAL SUMMARY

Florida's sites span Panhandle ledges, Miami's urban hard-bottom, wrecks, and Keys reefs where Anderson ran NOAA studies, including the inshore Cheeca Rocks. Living coral is mostly thin, but North Dry Rocks stands out with large, intact elkhorn and dense staghorn thickets.

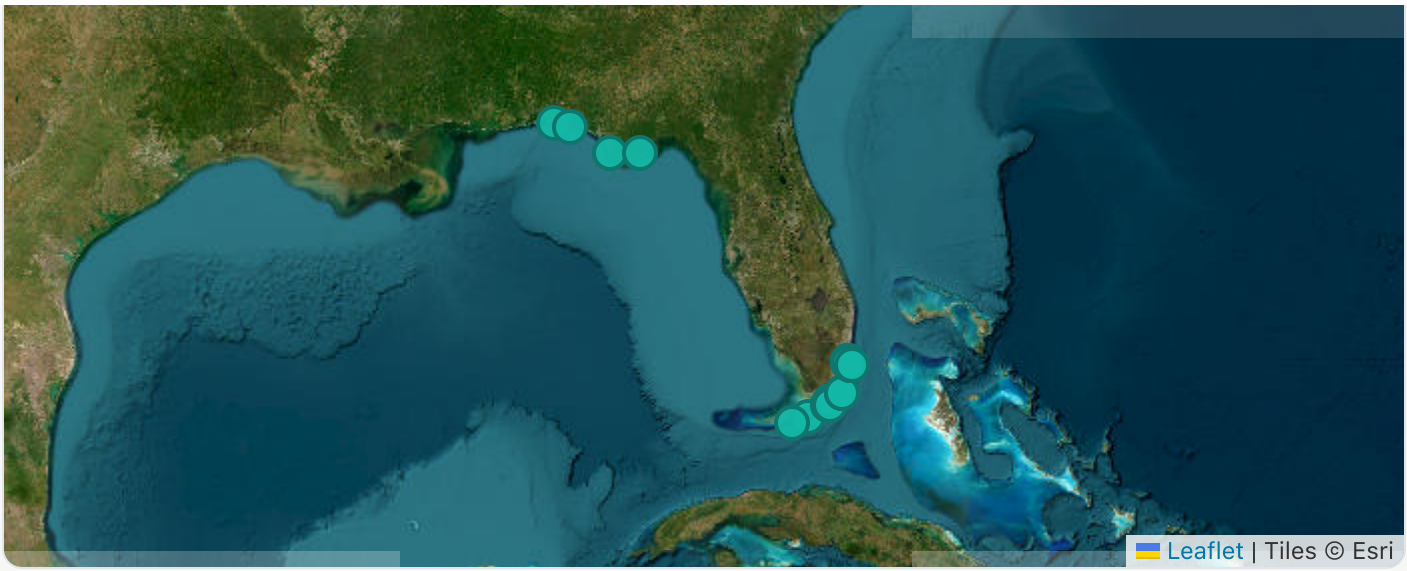
Heat stress



Daily SST (line) and weekly maximum Degree Heating Weeks (bars), Jan 2023–Oct 2026, NOAA Coral Reef Watch 5-km Southeast Florida virtual station. Dashed line: bleaching threshold (maximum monthly mean 29.4°C + 1°C). DHW ≥ 4: bleaching likely; ≥ 8: severe bleaching and mortality likely. A bar is drawn only where DHW exceeds zero, so a stretch with no bar is accumulated heat stress of zero, not missing data — the SST line runs the full period.

Long-term record: 9 years from 1985 through 2025 reached 8 or more °C-weeks at NOAA's Southeast Florida, Florida Keys stations. Download the annual DHW data (CSV).





22 sites in this region — click a marker to open that site.

Regional setting

South Florida holds the only significant coral reefs of the continental United States, and together with Bermuda and the northern Bahamas it marks the northern limit of reef growth in the western Atlantic (Wells 1988). North of Miami, true reef building gives way to octocoral-dominated hard bottom and, farther north, *Oculina* banks. The Florida Reef Tract itself is a band of reefs averaging 6.5 km wide that arcs roughly 370 km southwest from Fowey Rocks off southern Miami all the way to the Dry Tortugas, separated from the low Pleistocene-limestone Keys by Hawk Channel. It contains more than 6,000 patch reefs and about 96 km of outer bank reefs at 5–10 m, many with shallow spur-and-groove built by *Acropora palmata*; 62 stony coral species had been recorded from the Keys and Dry Tortugas. Wells (1988) adds that at least half the tract is poorly suited to coral growth, especially opposite the large tidal passes between Islamorada and Big Pine Key, where silty Florida Bay water spills onto the reefs on each falling tide. Spalding et al. (2001) describe Florida's reefs as among the most intensively studied and most degraded in the region: *Acropora* that covered up to 96% of the benthos in places in 1981 had dropped to about 3% by 1986, largely through white band disease, and overall coral cover was typically about 14% in the late 1990s. They give about 1,250 km² of coral reef for the USA's Atlantic sector.

Souter et al. (2021) report recent trends only for their Gulf of Mexico and Florida subregion, where mean hard coral cover slid steadily from about 13% (1999) to 9.1% (2019), and algal cover, after dipping to 16.9% in 2005, rose about 2.3-fold to 39% by 2015. The same report records that stony coral tissue loss disease (SCTLD) emerged in Florida in 2014, during a severe bleaching event and beside a dredging project on an urban reef, and calls it the deadliest disturbance on record in the Caribbean, with population losses above 90% in the most

susceptible species. Earlier, Spalding et al. (2001) noted that bleaching in 1997 and the more intense bleaching of 1998, followed by Hurricane Georges, caused considerable coral loss in shallow areas, and listed ship groundings, eutrophication, sewage, and heavy fishing pressure among chronic threats. Wilkinson (2006), drawing on the 2004 status report for the American Caribbean, noted continuing fishing pressure along the Florida coast.

Overview

The Florida unit runs from the northern Gulf to the Lower Keys and covers very different settings. Anderson's dated dives run from May 2019 to November 2025, and recorded depths run from 1.8 m at MacArthur Causeway North to 29.3 m at the *Orion* shipwreck. The four Panhandle sites (Destin to Carrabelle) sit on limestone ledges, sand, seagrass, and artificial reefs rather than coral reef. Around Miami and Key Biscayne, the Urban Corals sites at MacArthur Causeway and Star Island are flat, silt-draped hard-bottom where tagged *Pseudodiploria strigosa* colonies were sampled, while Emerald Reef, the clean-water comparison site, is a low pavement under a meadow of sea plumes, sea rods, and sea fans. Flamingo Reef nearby is low-relief hard-bottom whose largest mounds are draped in zoanthid (*Palythoa*) mat, with no branching *Acropora*.

Three members are artificial structures: the *Orion* wreck, the *Belcher* Barge scatter, and Neptune Memorial Reef. On all of them stony corals occur only as scattered recruits among sponges, octocorals, and coralline algae, and fish schools are the main feature.

In the Upper Keys, Anderson's NOAA study sites span inshore and offshore reefs. The inshore reef Cheeca Rocks, where Anderson resampled in 2019 colonies tagged and genotyped by the NOAA AOML team in July 2017, had 32% coral cover in August 2016 (NOAA NCRMP and AOML photo transects; Manzello et al. 2019) and 29% on permanent plots in 2014 (Gintert et al. 2018), and heat stress there peaked at 22.3 degree heating weeks in 2023 (NOAA Coral Reef Watch, Florida Keys virtual station). Anderson's own 2019 frames and logs record the condition of the four study reefs that year: stony coral tissue loss disease (SCTLD, the diver's field call), a diseased *Orbicella faveolata*, and August bleaching at Cheeca Rocks; two tagged colonies paling at The Rocks in August; 'some incidence of bleaching' logged at Little Conch; and two diseased colonies and an active tissue-loss front at Crocker Reef in December. The Rocks' massive star corals show obvious partial mortality, with 9.3% cover in 2016, and Little Conch (6.9%) and Crocker Reef (1.5%) offshore are low-relief reefs with isolated colonies. North Dry Rocks has large, intact elkhorn (*Acropora palmata*) and dense staghorn thickets alongside outplanted *Orbicella faveolata* fragments, although some elkhorn show pale or partly bare patches, and its Coral Health Index is 1.00 on the 0-5 scale (Key Largo Dry Rocks also scores 1.00, and Little Conch 0.50). Key Largo Dry Rocks is gorgonian-dominated spur-and-pavement around the

Christ of the Abyss statue. Looe Key in the Lower Keys keeps its spur-and-groove architecture, but living coral is thin and octocorals do most of the growing.

Independent surveys near many sites average low: 1.2% near Brewster Reef and 5.9% near Looe Key. Several Keys sites carry only Reef Check records from 1997-1999, which predate stony coral tissue loss disease. On the natural reefs Anderson photographed, a blind Claude computer-vision point count of the photographs puts coral cover between 8.3% at Key Largo Dry Rocks and 40% at Cheeca Rocks, and the artificial structures between 1.4% (*Belcher* Barge) and 4.2% (*Orion* shipwreck). The Broward and Palm Beach sites have their own Southeast Florida summary.

Highlights

- North Dry Rocks: meter-scale standing elkhorn and dense staghorn thickets, plus outplanted *Orbicella faveolata*  photo: North Dry Rocks (Key Largo)
- Cheeca Rocks: inshore patch reef with 32% cover (2016, NOAA NCRMP/AOML), with colonies tagged and genotyped by the NOAA AOML team in July 2017 and resampled by Anderson in 2019 

  photo: Cheeca Rocks (FKNMS)
- Emerald Reef: the Urban Corals clean-water yardstick, a low pavement under sea plumes, sea rods, and purple sea fans, with outplanted staghorn  photo: Emerald Reef (Key Biscayne)
- Flamingo Reef: low hardbottom whose biggest mounds are draped in zoanthid (*Palythoa*) mat, with brain corals, two of them with stony coral tissue loss disease (SCTLD, Anderson's field call) 

  photo: Flamingo Reef (Key Biscayne)
- Crocker Reef: the independent field-validation reef for Anderson's coral-stress diagnostics, surveyed on four visits in 2019  photo: Crocker Reef (FKNMS)
- Neptune Memorial Reef, the *Orion* wreck, and the *Belcher* Barge hulls carry only scattered coral recruits  photo: Neptune Memorial Reef

▼ **Notable observations (11)**

- The Rocks (FKNMS): massive star corals carry obvious partial mortality; bare skeleton patches and surviving tissue islands ringed by turf and algae; tagged colony 3975 and a second colony paling on 21

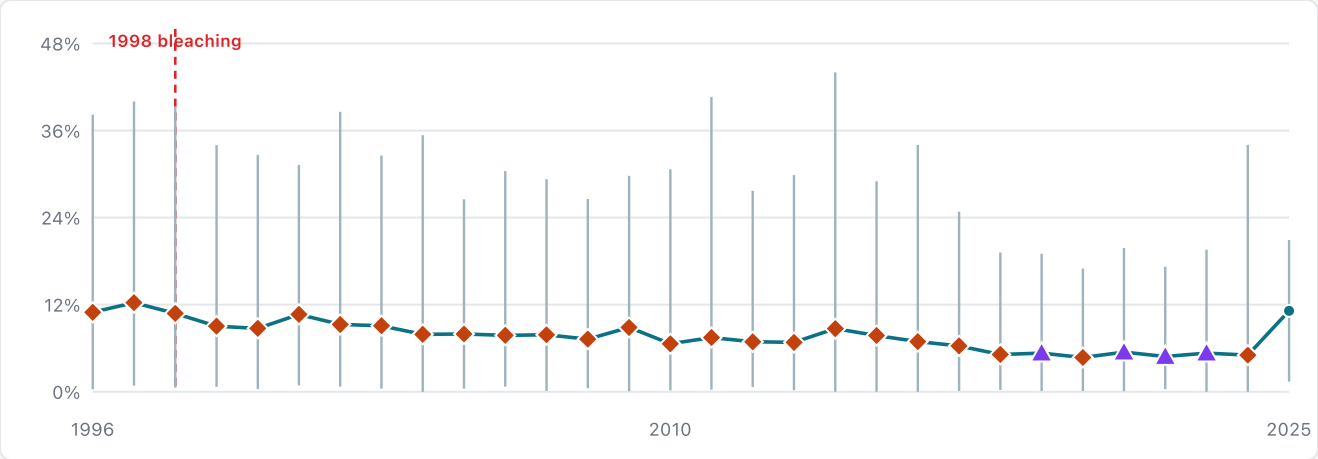
August 2019, and a Siderastrea with an active tissue-loss margin in October 2019 (Anderson's frames) 

- Little Conch (FKNMS): lesions and partial mortality on living colonies; Anderson's log, 21 August 2019: 'some incidence of bleaching', with partial bleaching on the colonies sampled that day; a tissue-loss margin on tagged colony LC-3128 
- North Dry Rocks (Key Largo): some elkhorn show pale or partly bare patches at their bases and blade edges 
- Flamingo Reef (Key Biscayne): two colonies with stony coral tissue loss disease (SCTLD, Anderson's field call), others with white patches or partial mortality; the log says the zoanthid Palythoa has smothered the reef 
- *Belcher* Barge (Key Biscayne): small scattered coral recruits; a few bleached stony colonies and one bleached sea rod 
- NOAA - MacArthur Causeway South (Urban Corals), Miami: partial mortality is visible on the tagged colonies; not bleached 
- NOAA - Star Island (Urban Corals), Miami: at least one tagged colony carries substantial dead, algae-covered skeleton across its top half; no bleaching recorded 
- Cheeca Rocks (FKNMS): Anderson's own 2019 frames: SCTLD and a diseased Orbicella faveolata with multifocal lesions; August 2019 bleaching of fire coral, a Porites colony, and part of an O. faveolata, with paling brain corals 
- Crocker Reef (FKNMS): 4 December 2019: two diseased colonies, one an Orbicella faveolata, and an active tissue-loss front on a plating colony (Anderson's frames) 
- Emerald Reef (Key Biscayne): one bleached Palythoa mass among the zoanthid carpets (May 2021) 

- Key Largo Dry Rocks (Christ of the Abyss): some staghorn tips recently dead and overgrown by fine algae (April 2023) 

Coral cover over time (pooled)

One point per year: the mean of every hard coral cover value available for this region that year — Anderson's own dives and every independent survey station within 5 km of them. The vertical bar is the full range behind that mean. Different programs use different methods at different stations, so this is a regional summary, not a single comparable series. Years resting on fewer than three values are drawn as smaller points (2025). Non-CRD points are from Reef Check Foundation, FWC-FWRI CREMP (Florida Fish and Wildlife Conservation Commission), NOAA National Coral Reef Monitoring Program, Lirman et al. (2007), and Wallace (2011). Marker shape: ● Anderson's own dives, ◆ other organizations' surveys, ▲ a mix of both, that year.



▼ Sites in this region (22)

- *Belcher* Barge (Key Biscayne) — 1.4%† coral cover
- Cheeca Rocks (FKNMS) — 32% coral cover
- Crocker Reef (FKNMS) — 1.5% coral cover
- Emerald Reef (Key Biscayne) — 12% coral cover
- Flamingo Reef (Key Biscayne) — 21%† coral cover
- Florida - Bear Cut (Miami)
- Florida - Brewster Reef (Miami) — 3.0% (newest survey within 0.5 km, not this site: NOAA NCRMP Florida, FLK PSU 1246-1 station, 2024-11-12, 0.18 km away)
- Florida - Marathon 3 — 7.2% (nearest station surveyed in the last 10 years, not this site: FWC CREMP (Florida Keys), Thor #241 station, 2024-05-17, 0.91 km away)
- Florida Panhandle - Cape San Blas
- Florida Panhandle - Carrabelle
- Florida Panhandle - Destin
- Florida Panhandle - Santa Rosa
- Key Largo Dry Rocks (Christ of the Abyss) — 8.3% coral cover

- Little Conch (FKNMS) — 6.9% coral cover
- Looe Key — 20% coral cover
- Neptune Memorial Reef — 1.6% coral cover
- NOAA - MacArthur Causeway North (Urban Corals), Miami
- NOAA - MacArthur Causeway South (Urban Corals), Miami — 19%* coral cover
- NOAA - Star Island (Urban Corals), Miami
- North Dry Rocks (Key Largo) — 20% coral cover
- *Orion* shipwreck (Key Biscayne) — 4.2% coral cover
- The Rocks (FKNMS) — 9.3% coral cover

* Based on only 10–19 reef-habitat photos; this estimate is less certain.

† Includes unedited photographs: edited versions of most of this dive's photos do not exist.

Nearby external survey stations

1082 independent survey records within 5 km of a site in this region (each record counted once; 1072 lines, and a line that pools several records says how many).

▶ **Show all 1082 records**

All images from Coral Reef Diagnostics. Data are from Coral Reef Diagnostics, Reef Check Foundation, NOAA Coral Reef Watch, FWC-FWRI CREMP (Florida Fish and Wildlife Conservation Commission), NOAA National Coral Reef Monitoring Program, Lirman et al. (2007), and Wallace (2011).



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