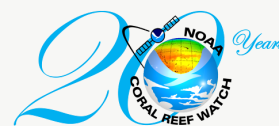




Kenya



Regional summary of 21 dive sites. 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: 1.50/5

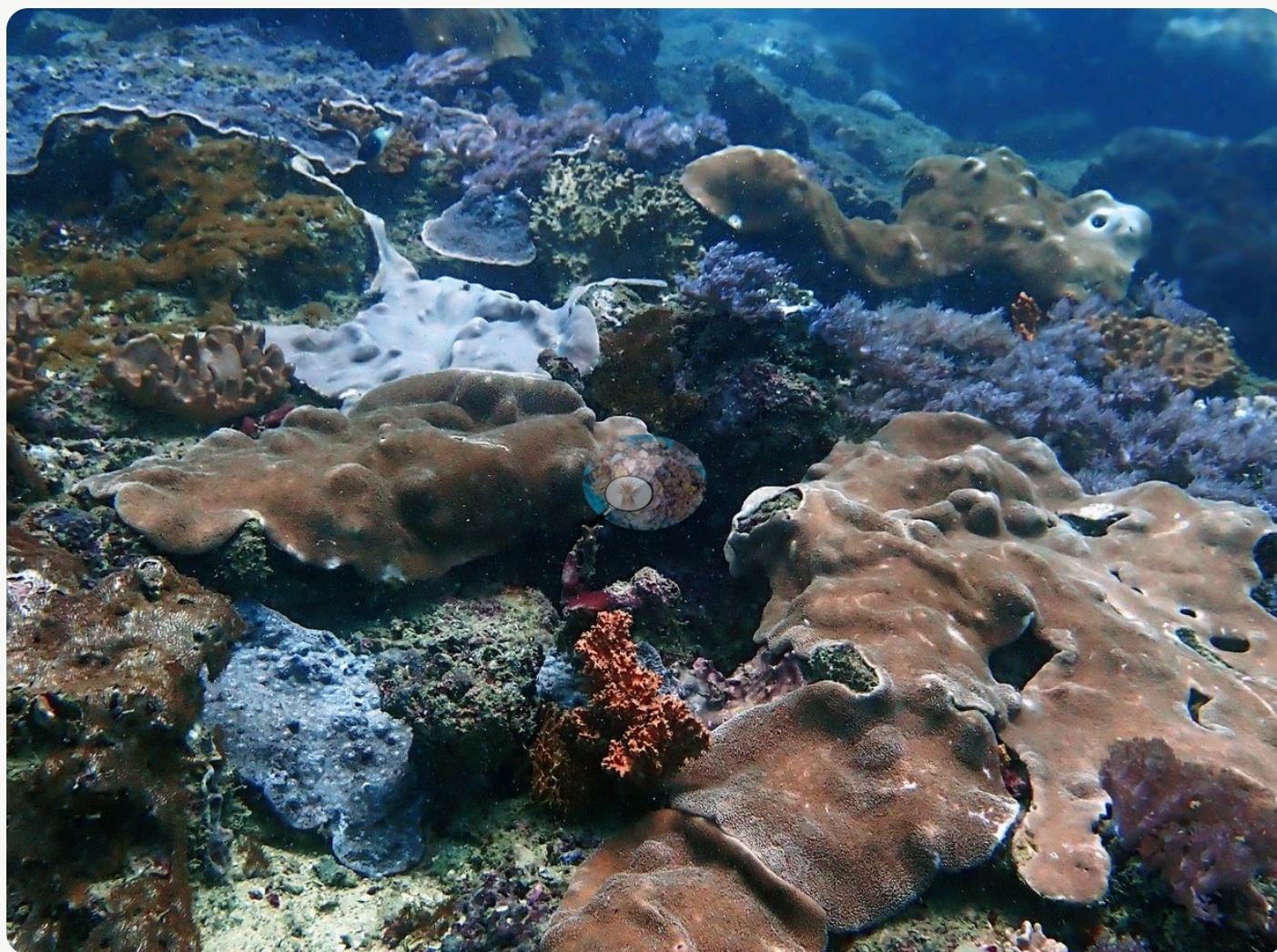


Photo: Anderson Mayfield/Coral Reef Diagnostics — [Kenya](#) - Brain Coral ([Mombasa](#))

COUNTRY

Kenya

SITES

21

each linked below

HARD CORAL COVER
(REGIONAL MEAN)

30% ± 11% (std. dev.)

n = 20 of 21 sites. range 13–55%

WATER TEMP. DURING
SURVEYS (REGIONAL MEAN)

32.0°C

n = 21 of 21 sites; surveyed Mar
2024–Apr 2024

CORAL HEALTH INDEX
(REGIONAL MEAN)

1.50 / 5

n = 5 of 21 sites; 2.5 = average
(below average — stressed)

MOST RECENT WATER
TEMPERATURE RECORD

26.8°C

16 Sep 2026 · [Kenya](#)

MOST RECENT HEAT
STRESS RECORD



0.0°C-weeks

16 Sep 2026 · below alert level

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

4.9°C-weeks

2021–2025 · regional mean of 21
sites, 2 stations

HIGHEST ANNUAL HEAT
STRESS

16.0°C-weeks 🔥

in 2024 · Tanzania

SEVERE HEAT-STRESS YEARS

4

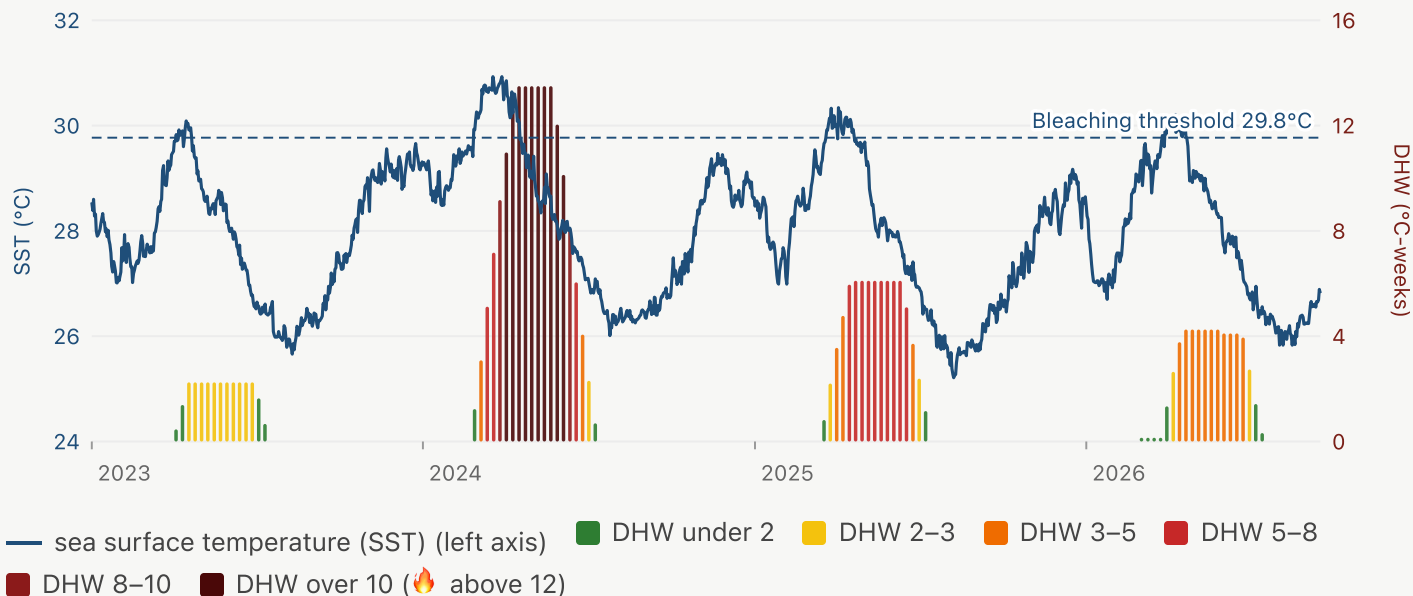
1985–2025 · 3 in the last 10 years

Heat-stress figures: [NOAA Coral Reef Watch](#) — [Kenya](#) and Tanzania 5-km virtual stations. Each pill links its source record and carries the values behind it.

REGIONAL SUMMARY

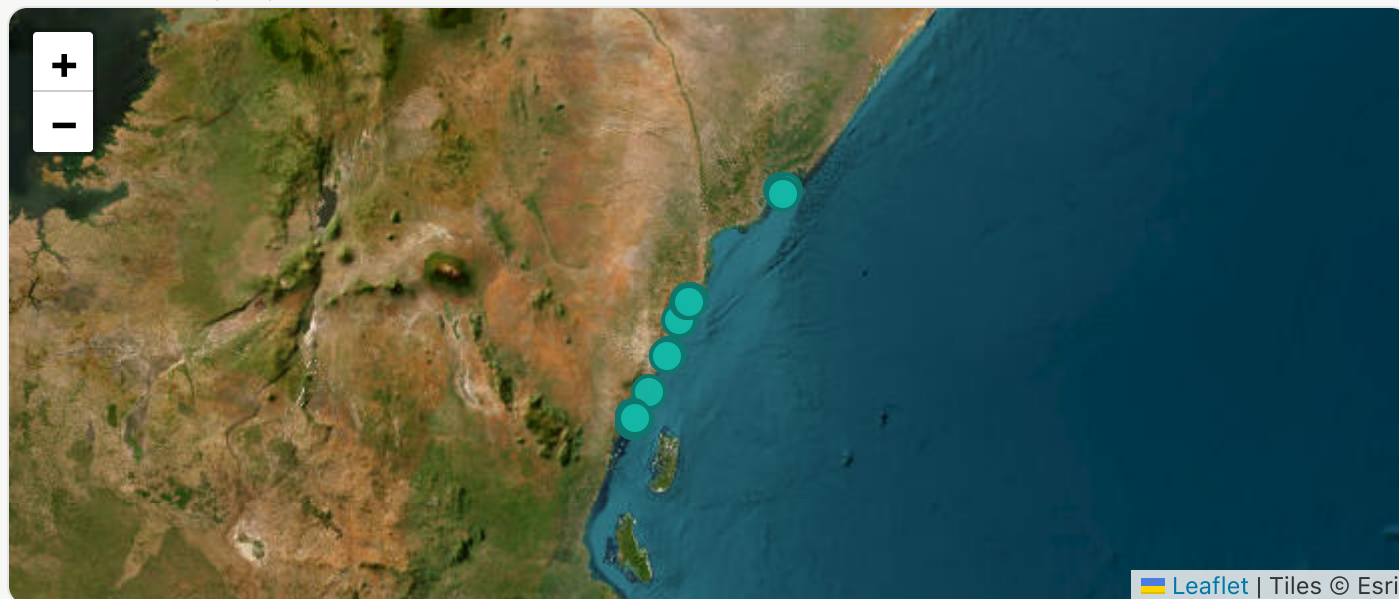
Kenya's shallow fringing reef flats, terraces, bommie fields, and restoration nurseries were surveyed in March–April 2024, during the Western Indian Ocean [mass bleaching](#). Bleached tissue ranged from 45.4% to 95.4% of hard coral, and no coral growth form was reliably spared.

Heat stress



Daily SST (line) and weekly maximum Degree Heating Weeks (bars), Jan 2023–Sep 2026, [NOAA Coral Reef Watch](#) 5-km Kenya virtual station. Dashed line: bleaching threshold (maximum monthly mean $28.8^{\circ}\text{C} + 1^{\circ}\text{C}$). 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: 4 years since 1985 reached 8 or more $^{\circ}\text{C}$ -weeks at [NOAA's](#) Kenya, Tanzania stations. [Download the annual DHW data \(CSV\)](#).



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

Read this summary in:

English

Kiswahili

Regional setting

Kenya's reefs are mostly fringing reefs, the predominant type along mainland East Africa ([Spalding et al. 2001](#)). South of Malindi, a narrow coastal plain is backed by raised Pleistocene reef platforms standing above today's intertidal platform, and the continental shelf extends only about 5 km offshore; north of Malindi it widens to about 60 km. Fringing reefs are best developed in the south. Farther north, loose sediment and fresh water from the Athi-Galana-Sabaki and Tana rivers hold back reef growth, although fringing reefs occur around the Lamu islands and along a chain of about 50 calcareous barrier islands near Kiunga. Diversity also tends to be higher in the south, and Kenya's recorded coral fauna runs to about 55 genera and as many as 200 species. Before 1998, live coral typically covered about 30% of hard substrate, interspersed with [seagrass](#) and algal beds. In 1998, 50–90% of corals appeared to bleach and many died, and [soft corals](#) fared even worse. Kenya's first marine parks, at Malindi and [Watamu](#), date from 1968, followed by Kisite and Mpunguti in 1978, Mombasa in 1986, and the Diani reserve in 1993, and protection has brought more fish, greater diversity, and higher live coral cover. [Spalding et al. \(2001\)](#) estimate about 630 km² of coral reef for Kenya, and [Souter et al. \(2021\)](#) put the whole Western Indian Ocean at about 15,180 km², nearly 6% of the world total.

Recovery in East Africa after 1998 was significant but patchy, and better on well-managed reefs, according to [Wilkinson's \(2006\)](#) summary of the 2004 status report. It named the growing coastal population, with land-based pollution and rising fishing pressure, as the largest threat, and listed Kenya with Tanzania and the Great Barrier Reef as the places with the highest recent densities of [crown-of-thorns starfish](#). [Souter et al. \(2021\)](#) identify 1998 and 2016 as the two region-wide bleaching events in the Western Indian Ocean, with smaller episodes in 2005, 2007, and 2010 that interacted with fishing and local stressors. After the 2016 event, citizen-science surveys found that one site in five had lost more than half of its corals. Other published studies cited in that report point to 1998 mortality of 45–70%, after which cover never climbed back to its earlier level.

Overview

The 21 Kenya pins come from Anderson's survey of 11 March to 3 April 2024, during the Western Indian Ocean mass bleaching event. They run from Mombasa Marine Park south through Diani and the Shimoni-Wasini channel to Kisite-Mpunguti, and north through [Kilifi](#) and Watamu to Pate Island in the Lamu archipelago. All are shallow, from 0.5 m at Lower Mpunguti site 2 to 15 m at North Canyon: fringing reef flats, hardground terraces, bommie fields, and four restoration sites (the REEFolution nursery at Shimoni and three nurseries on Pate). The reef-building community changes along the coast. Foliose and laminar plates of [Turbinaria](#), [Montipora](#), and [Echinopora](#) type dominate at Sandy Patch and Diani, massive [Porites](#) bommies at the Mombasa Marine Park snorkel site, tabulate [Acropora](#) at Dolphin Point, and knobby [Galaxea](#) carpets cover Coral Garden and Kisite site 4.

Published hard coral cover at the 20 scored sites ranged from 12.8% at Chipopo, a restoration site, to 55.0% at Coral Garden in Kisite, which is wall-to-wall coral in clear blue water. The share of hard coral tissue bleached ranged from 45.4% at Sandy Patch and 46.6% at [Brain Coral](#), both in Mombasa, to 95.3% at North Canyon and 95.4% at Ocean Trust Nursery. Six of the nine Kilifi, Watamu, and Pate sites exceeded 80%. Bofa carries the unit's only Coral Health Index, 2.25, just below the 2.5 average.

No single growth form was consistently spared. At Outer Kisite the branching [Acropora](#) thickets took the damage while massive [Porites](#) hillsides and plate terraces held pigment. At Bofa, Round Reef, and Uyombo the massive and brain corals were among the most completely bleached, and [Turbinaria](#) plates were the survivors at Bofa, Kilifi Bay, and Lower Mpunguti site 1. The [Galaxea](#) carpet held its color at Coral Garden but went white as a snowfield at Kisite site 4. Pink, mauve, violet, and chartreuse stress coloration recurred at Uyombo, North Canyon, and Kilifi Bay. Restoration stock was mixed, with pigmented and white fragments side by side on the same structures.

Crown-of-thorns predation was concentrated at Bofa, where at least nine individuals were found on already-bleached coral, with single or paired sightings at three other sites. Turtles, a trumpetfish aggregation, and a Spanish dancer on the Shimoni night dive stand out among the fauna.

Highlights

- Coral Garden (Kisite) had the highest cover of the 20 scored sites, 55.0%, with 58.9% of tissue bleached.



photo: Kenya - Coral Garden (Kisite National Park)

- Bleaching ranged from 45.4% of tissue at Sandy Patch to 95.4% at Ocean Trust Nursery.
- Bofa recorded at least nine crown-of-thorns starfish, repeatedly on already-bleached coral.



photo: Kenya - Bofa (Kilifi)

- Which growth forms held pigment differed from site to site; no group was reliably spared.
- Four restoration sites document mixed outcomes for nursery and outplanted stock.
- Round Reef (Watamu): a 15-quadrat transect caught fully pigmented Acropora beside bone-white colonies of the same growth form.

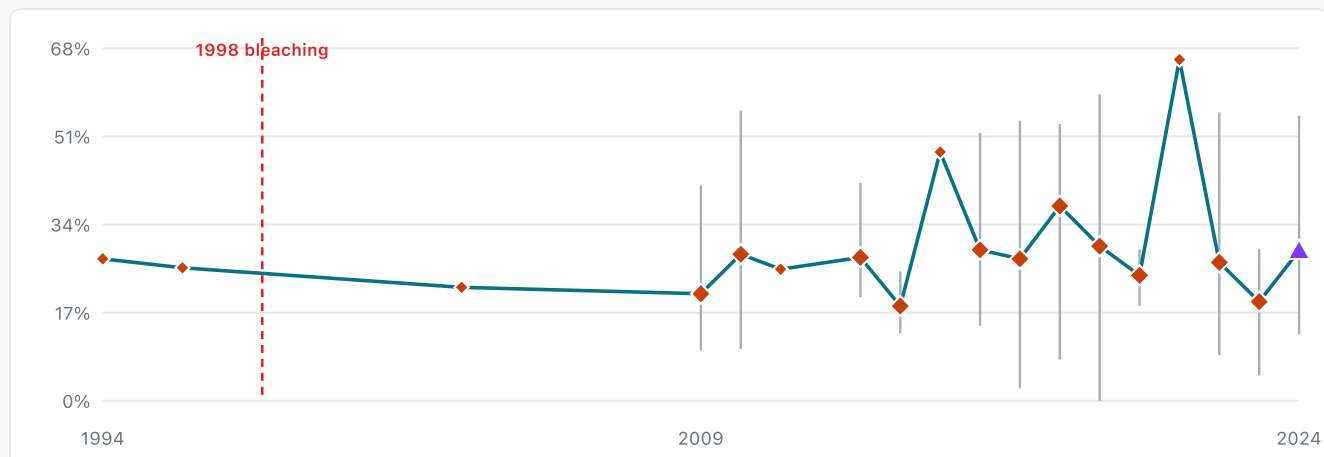


photo: Kenya - Round Reef (Watamu)

► Notable observations (21)

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 (1994, 1996, 2003, 2011, 2015, 2021). Marker shape: ● his own dives, ◆ other organizations' surveys, ▲ a mix of both, that year.



► Sites in this region (21)

% coral cover by method

Pooled across 8 dive sites

Method	Mean % coral cover	Std. dev. between dive sites	n dive sites	Note
Manual point count (author)	25.1%	±14	8	frame-weighted 28.8% over 1,004 frames
manual_like_for_like	22.6%	±11	8	frame-weighted 20.2% over 50 frames
CoralNet automated point classifier	19.9%	±17	8	frame-weighted 19.2% over 50 frames; 8 of these dive sites are the SAME MEASUREMENT as the reference and are excluded from the ranking
CoralSCOP (SAM-based mask-sum), unedited photos	26.4%	±12	8	frame-weighted 24.4% over 50 frames
Claude (Anthropic), blind point count	20.4%	±11	8	frame-weighted 17.0% over 50 frames
In-house DINOv3 point classifier	11.8%	±6.3	8	frame-weighted 11.0% over 50 frames

The mean is an UNWEIGHTED mean of the dive site values — each dive site counts once, whatever its photo count — which is the convention of the published tables and of every other figure on this page. The frame-weighted alternative is given per method in the Note column; where the two differ, the difference is a photo-count imbalance, not a coral-cover finding.

By dive site

Dive site	Manual point count	Manual, same frames	CoralNet	CoralSCOP (unedited)	Claude	DINOv3
Coral Garden	55.0% n=178	45.0% n=2	50.0% [△] n=2	39.3% n=2	40.0% n=2	20.0% n=2
Chipopo	12.8% n=40	26.7% n=2	31.7% [△] n=2	22.5% n=2	30.0% n=2	6.7% n=2
Ocean Trust Nursery	28.9% n=62	26.7% n=2	28.3% [△] n=2	11.8% n=2	26.7% n=2	1.7% n=2
Uyombo (UYQ quadrats)	24.8% n=375	21.7% n=24	23.5% [△] n=24	29.1% n=24	17.5% n=24	12.6% n=24
Lower Mpunguti-site 1	18.1% n=36	20.0% n=1	0.0% [△] n=1	16.8% n=1	16.7% n=1	13.3% n=1

Round Reef (RRQ quadrats)	17.8% n=175	14.4% n=16	8.8% [△] n=16	15.7% n=16	11.9% n=16	8.3% n=16
Pilot Nursery	14.0% n=21	13.3% n=2	16.7% [△] n=2	28.8% n=2	10.0% n=2	11.7% n=2
Sandy Point	29.3% n=117	13.3% n=1	0.0% [△] n=1	47.2% n=1	10.0% n=1	20.0% n=1

n under each value is the number of photographs that method scored at that dive site. [△] marks a cell that is not an independent check.

Reference: point-count on the photographs (a human scoring the same pixels the models see). Denominator: coral points / (30 – WATER – FISH); `Unk` is IN the denominator (Mayfield 2025 convention). Source: published verbatim ([Mayfield 2025, Environments 12:276](#), Appendix A) [△] The published manual column and the four computer vision (CV) columns are on DIFFERENT FRAME SETS: the manual covers the site's full photo set (21–375 frames), the CV arms ran only on the 50-frame blind batch, which supplies 1–24 frames per site. The like-for-like row is the recomputed manual, not the published one. [△] The CV columns are on the OLD all-30 denominator while the published manual is on the settled rule; on these frames that understates cover by ~3.0 pp. The 50-frame batch is 6.3 pp poorer in cover than the survey average, so the CV columns are subset-distorted as well as denominator-shifted. Round Reef and Uyombo roll up 15 and 16 quadrat codes respectively.

Nearby external survey stations

82 independent survey records within 5 km of a site in this region (deduplicated across sites).

► Show all 82 records

All images from [Coral Reef Diagnostics](#). Data are from [Coral Reef Diagnostics](#).



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References

- Souter D, et al. (eds) (2021) *Status of Coral Reefs of the World: 2020*. International Coral Reef Initiative / [Global Coral Reef Monitoring Network](#). [\[PDF\]](#)
- Spalding MD, et al. (2001) *World Atlas of Coral Reefs*. University of California Press, Berkeley. [\[PDF\]](#)
- Wilkinson C (2006) Status of coral reefs of the world: summary of threats and remedial action. In: Côté IM, Reynolds JD (eds) *Coral Reef Conservation*. Cambridge University Press, Cambridge. [\[PDF\]](#)
- Mayfield AB (2025). A Citizen Science Approach for Documenting Mass Coral Bleaching in the Western Indian Ocean. *Environments* 12:276. [PDF](#)
- Mangubhai S, Harrison P, Obura D (2007). Patterns of coral larval settlement on lagoon reefs in the Mombasa Marine National Park and Reserve, Kenya. *Marine Ecology Progress Series* 348:149-159. [PDF](#)

- McClanahan TR, Kamukuru AT, Muthiga NA, Yebio MG, Obura D (1996). Effect of Sea Urchin Reductions on Algae, Coral, and Fish Populations. *Conservation Biology* 10:136-154. [DOI](#)