Fiji - Totoya

Island summary of 10 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. Part of the Fiji - Moala Group (Moala / Totoya / Matuku) regional summary.

0 — 5

Coral Health Index: TBD



Photo: Anderson Mayfield/Coral Reef Diagnostics — Fiji - Totoya (FJTO02)

COUNTRY

Fiji

SITES

10

each linked below

HARD CORAL COVER (ISLAND MEAN)

32% ± 10% (std. dev.)

n = 9 of 10 sites. range 12–46%

WATER TEMP. DURING SURVEYS (ISLAND MEAN)

27.2°C

n = 9 of 10 sites; surveyed Jun 2013; all are station CTD-cast midpoints, not dive readings

CORAL HEALTH INDEX (ISLAND MEAN)

not yet scored

n = 0 of 10 sites

MOST RECENT WATER TEMPERATURE RECORD

25.8°C

26 Oct 2026 · Fiji

MOST RECENT HEAT STRESS RECORD

0.0°C-weeks

26 Oct 2026 · No heat stress

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

8.9°C-weeks

2021–2025 · Fiji

HIGHEST ANNUAL HEAT STRESS

16.7°C-weeks

in 2026 (to date, 26 Oct) · Fiji

SEVERE HEAT-STRESS YEARS

11

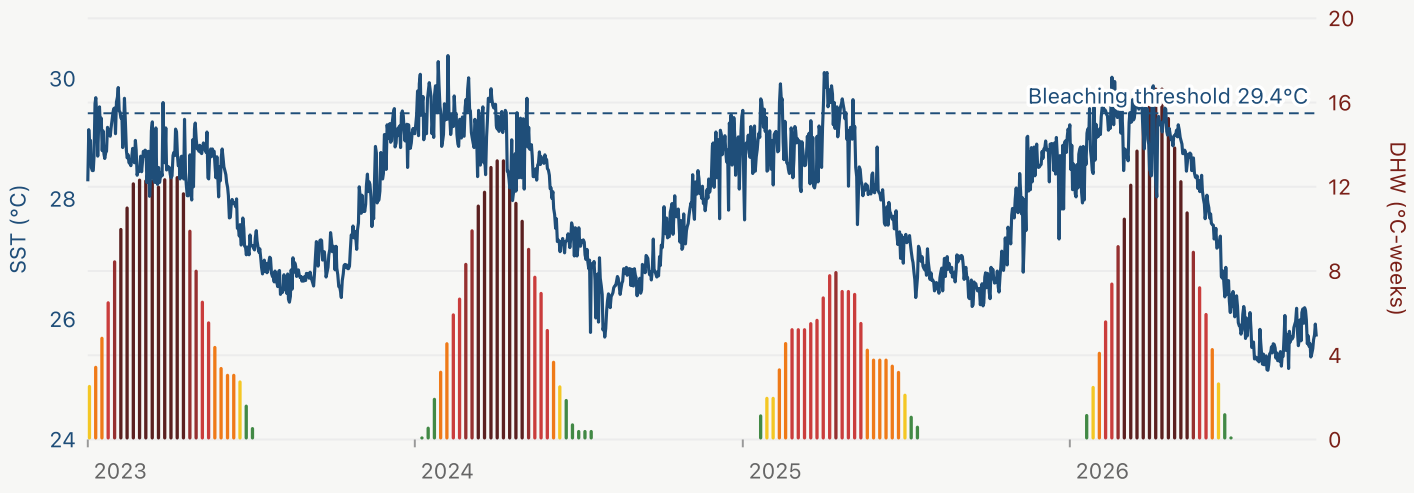
1985–2025 · 6 in the last 10 years

Heat-stress figures: NOAA Coral Reef Watch — Fiji 5-km virtual station. Each pill links its source record and carries the values behind it.

ISLAND SUMMARY

Totoya's fore reefs, the first Fiji stops in June 2013, alternate between coralline-crusted terraces and dense, diverse coral patches, with cover from 12% to 46% and a crest of large tables and staghorn at FJTO05.

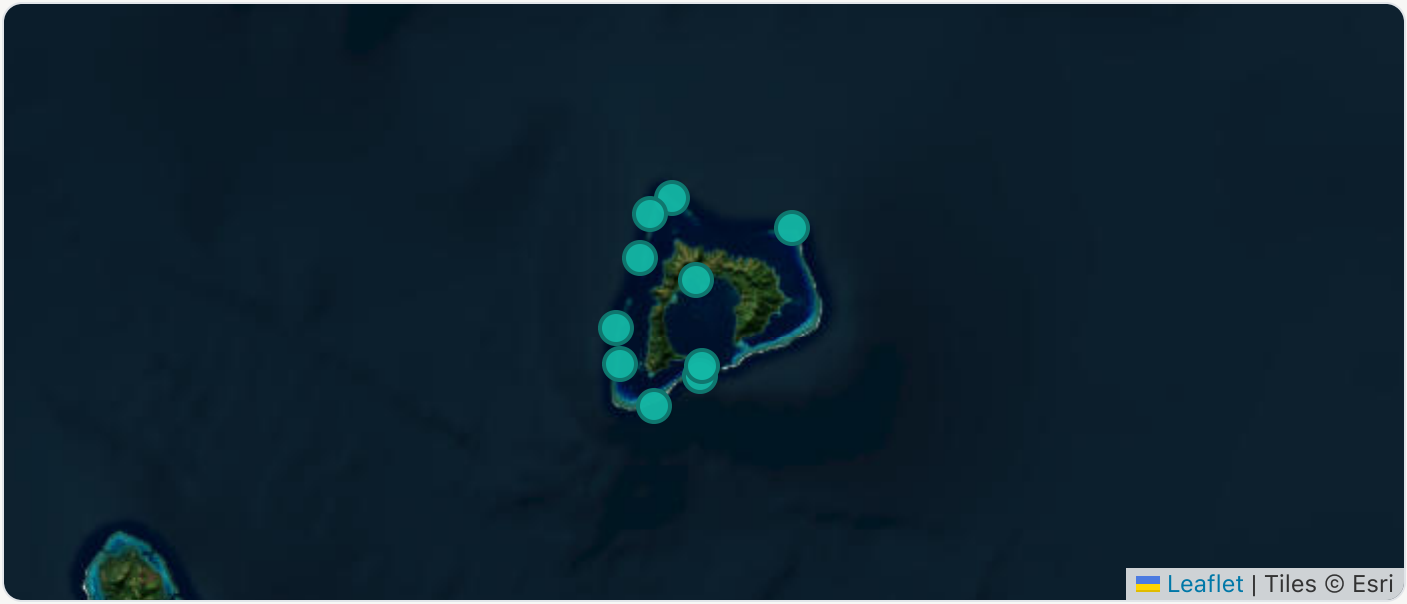
Heat stress



sea surface temperature (SST) (left axis) DHW under 2 DHW 2–3 DHW 3–5 DHW 5–8
DHW 8–10 DHW over 10 (🔥 above 12)

Daily SST (line) and weekly maximum Degree Heating Weeks (bars), Jan 2023–Oct 2026, NOAA Coral Reef Watch 5-km Fiji virtual station. Dashed line: bleaching threshold (maximum monthly mean 28.4°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: 11 years from 1985 through 2025 reached 8 or more °C-weeks at NOAA's Fiji station. Download the annual DHW data (CSV).



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

Overview

Totoya is a horseshoe-shaped volcanic island in the Moala Group of Lau Province, its drowned caldera forming a near-enclosed lagoon. Nine Global Reef Expedition stations were surveyed there between 3 and 5 June 2013, the first Fiji stops of the expedition, plus an island-level marker for Totoya. Maximum depths dived ran from 14.6 m at FJTO06 to 29.6 m at FJTO09. Survey notes describe spur-and-groove ridges with sediment-filled grooves, small *Acropora* and *Pocillopora* in the shallows, large *Acropora* tables around 20-22 m, and large *Diploastrea* near 30 m.

Coral cover ranged from 12% on a steep slope at FJTO06, where algae (74%) sheets the old framework, to 46% on the FJTO05 crest of large tables and continuous staghorn stands. Totoya alternates between dense, very diverse patches (FJTO02, which Anderson noted for its high diversity) and broad terraces of coralline-crusted pavement with scattered colonies. FJTO08 is a flat, low-relief terrace, FJTO07 is a slope continuously covered in table, branching, and massive corals, and FJTO09 combines steep spurs and walls with a large overhung cave passage. At

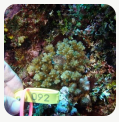
FJTO01, tagged sampling colonies share the bottom with an instrument plate of temperature and light loggers cable-tied to the reef.

No Totoya station carries a Coral Health Index. Island-level physiological screening (Mayfield et al. 2017, PLoS ONE) flagged 2 of the 9 corals with an outlier score: the one from FJTO05 and the one from FJTO07. One small colony at the edge of an FJTO04 frame shows possible bleaching (one frame), and Anderson's sampling sheet records the one colony sampled at FJTO03 as pale; no station's photographs show disease lesions or crown-of-thorns feeding scars. Sightings include a whitetip reef shark and a giant clam at FJTO04, a reef shark, a giant clam and a large sea cucumber at FJTO09, and a school of yellow-striped snapper over the FJTO05 staghorn.

Highlights

- 46% cover on a crest of large tables and continuous staghorn, crossed by a school of yellow-striped snapper (FJTO05). 
- Steep spurs, walls, and a large overhung cave passage, with a giant clam set into branching *Acropora* (FJTO09). 
- Dense, very diverse patches of interlocking branching, table, and encrusting corals (FJTO02). 
- A whitetip reef shark over the reef, and a giant clam with its mantle open (FJTO04). 
- Cover from 12% on an algae-sheeted slope (FJTO06) to 46% (FJTO05). 
- Tagged-colony physiology sampling beside an instrument plate of temperature and light loggers (FJTO01). 

Notable observations

- Fiji - Totoya (FJTO08): No disease lesions or crown-of-thorns feeding scars in the eleven frames; white patches on the branch tips of one Pocillopora colony (which Anderson identified as P. damicornis) are over-exposure, not tissue loss. 

- Fiji - Totoya (FJTO02): No bleaching front, disease lesion, or crown-of-thorns feeding scar in any of the 15 frames. 
- Fiji - Totoya (FJTO07): Physiological stress outliers: the one coral colony from this site with an outlier score was flagged (Mayfield et al. 2017, PLoS ONE), as was the one from FJTO05; island-level screening flagged 2 of the 9 corals with an outlier score. 

Sites in this region

- Fiji - Lau Islands: Totoya
- Fiji - Totoya (FJTO01) — 28% coral cover
- Fiji - Totoya (FJTO02) — 36% coral cover
- Fiji - Totoya (FJTO03) — 33% coral cover
- Fiji - Totoya (FJTO04) — 25% coral cover
- Fiji - Totoya (FJTO05) — 46% coral cover
- Fiji - Totoya (FJTO06) — 12% coral cover
- Fiji - Totoya (FJTO07) — 42% coral cover
- Fiji - Totoya (FJTO08) — 36% coral cover
- Fiji - Totoya (FJTO09) — 29% coral cover

% coral cover by method

Pooled across 2 dive sites

Method	Mean % coral cover	Std. dev. between dive sites	n dive sites	Note
CoralSCOP (SAM-based mask-sum), edited photos	29%	±6.4	2	2 of these 2 values rest on 10–19 photographs (*)
Claude (Anthropic), blind point count	22%	±5.1	2	2 of these 2 values rest on 10–19 photographs (*)
In-water diver transect (line/point intercept)	33%	±5.2	2	—

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. Each value is the one printed on that dive site's own page; a page that prints no value for a method (fewer than 10 photographs) is left out of that method's mean.

This table pools only the 2 dive sites in this unit that have a method comparison; the table for all 10 dive sites is on the Fiji - Lau page.

Deviation from the reference

Over the dive sites where an independent reference exists, Claude (Anthropic), blind point count has a mean absolute deviation of 10.5 pp from it across 2 dive sites. Not in this ranking: CoralSCOP (edited), which measures coral area rather than points. A mean absolute deviation is not an accuracy score: a model with a consistent offset is correctable, while one with the same deviation scattered in both directions is not.

By dive site

Dive site	CoralSCOP (edited)	Claude	Diver transect
FJTO02	34%* n=12	26%* n=12	36%
FJTO09	25%* n=13	18%* n=13	29%

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. * marks a value resting on only 10–19 photographs, which is less certain.

Reference: Living Oceans Foundation (LOF) Global Reef Expedition in-water transects (mean of all the station's transects, Living Oceans Foundation per-transect benthic data). Denominator: line/point intercept along the transect; not a photo-point denominator. Source: LOF Global Reef Expedition 2013, per-transect benthic data ('GRE data-full benthic'): the mean of all of each station's transects For all 10 dive sites in the comparison: The transect is THE coral-cover value at every site; the Claude photo estimate is a methods comparison only, never averaged with the transect and never a headline. Site-level only: the photos come from the survey dives, not from the transect points. Few usable habitat photos exist for Fiji: only 10 sites have 10 or more, and 9 of them have fewer than 20 (low-n), so these are not confident site estimates. Accuracy, Claude vs transect, 10 sites: mean difference -5.4 pp (95% CI -12.7 to +1.9), mean absolute difference 10.3 pp, r 0.35. Claude reads lower than the transect at most sites and does not track it from site to site. This is a methods comparison, not a ranking.

Nearby external survey stations

9 independent survey records within 5 km of a site in this region (each record counted once; 8 lines, and a line that pools several records says how many).

- WCS Fiji via MERMAID — TY01 (2011): 36% hard coral cover, 0.18 km from Fiji - Totoya (FJTO06)
- WCS Fiji via MERMAID — TY02 (2011): 53% hard coral cover, 0.32 km from Fiji - Totoya (FJTO06)
- WCS Fiji via MERMAID — TY04 (2011): 58% hard coral cover, 0.05 km from Fiji - Totoya (FJTO07)
- WCS Fiji via MERMAID — TY06 (2011): 46% hard coral cover, 0.68 km from Fiji - Totoya (FJTO06)
- WCS Fiji via MERMAID — TY08 (2011): 53% hard coral cover, 1.26 km from Fiji - Totoya (FJTO06)
- WCS Fiji via MERMAID — TY10 (2011): 53% hard coral cover, 1.27 km from Fiji - Totoya (FJTO07)

- WCS Fiji via MERMAID — TY13 (2011): 64% hard coral cover, 1.24 km from Fiji - Totoya (FJTO06)
- WCS Fiji via MERMAID — TY15 (2011): 43% hard coral cover, mean of 2 surveys, 0.99 km from Fiji - Totoya (FJTO06) (2 records)

All images from Coral Reef Diagnostics. Data are from the Khaled bin Sultan Living Oceans Foundation Global Reef Expedition, Coral Reef Diagnostics, and WCS Fiji.


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References

- Global Reef Expedition: Lau Province, Fiji. Field Report (Khaled bin Sultan Living Oceans Foundation), survey notes 2013
- Mayfield AB, Chen CS, Dempsey AC (2017). Identifying corals displaying aberrant behavior in Fiji's Lau Archipelago. PLOS ONE 12:e0177267. PDF