# RAROTONGA ALGAE REPORT
JANUARY to JUNE 2025

SUMMARY

Macroalgae (seaweeds) are common in the lagoon of Rarotonga. When macroalgae grow in abundance, this may be known as an algal bloom. Algal blooms can occur for several reasons, including as a response to land-based runoff of nutrients (nitrates, phosphates) or an increase in temperature. For example, macroalgae blooms in Rarotonga have been observed mostly in the summer months when the lagoon waters are warmer. The Ministry of Marine Resources surveys coastal macroalgae abundance (% cover of the substrate) every two months at eight sites around Rarotonga. These data will now be included in the water quality monitoring report. The purpose of this survey is to monitor macroalgae levels and to observe changes over time. For further information please contact the Inshore and Aquaculture team at MMR on rar@mmr.gov.ck.

ALGAE SURVEY DATE: 24 JAN 2025

MMR conducts coastal algae surveys at 8 sites every two months. Values represent the average percent cover of the substrate (± standard error) based on ten 1m² quadrats.
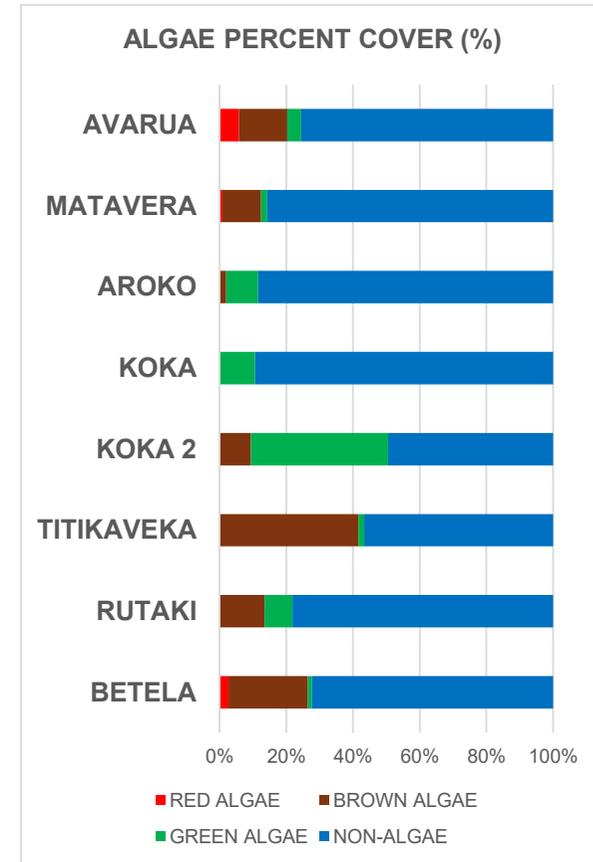
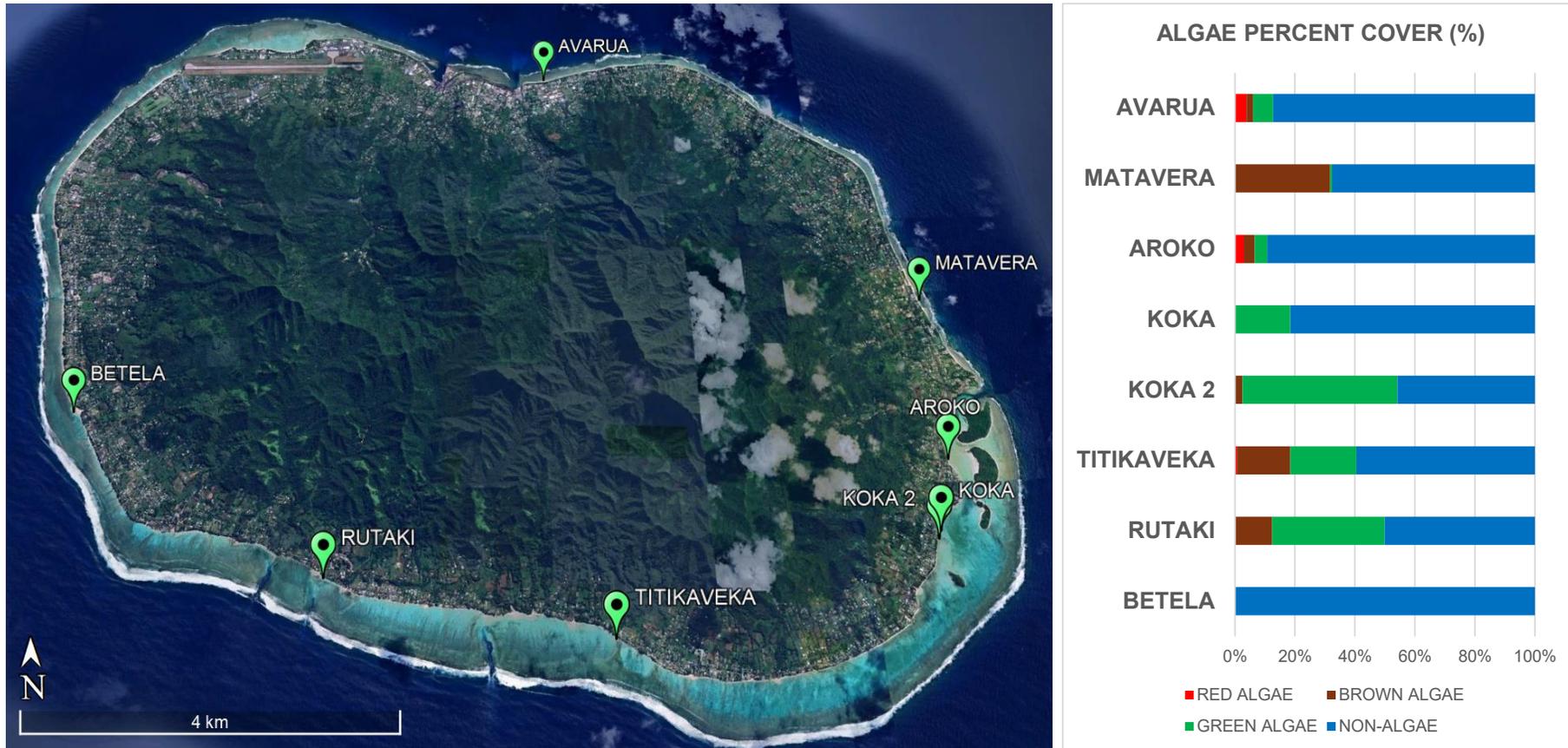| Average percent cover ± standard error	Avarua	Matavera	Aroko	Koka	Koka 2	Titikaveka	Rutaki	Betela
Total algae cover (%)	41.3 ± 5.7	33.6 ± 6.5	12.1 ± 1.9	10.7 ± 4.1	52.3 ± 6.3	50.1 ± 8.2	73.9 ± 2.7	30.1 ± 3.6
Red algae (%)	4.5 ± 1.2	0.7 ± 0.4	0	0	0	0	0	2.6 ± 1.6
Brown algae (%)	11.3 ± 2.8	9.0 ± 3.8	2.0 ± 0.8	0	9.1 ± 1.9	36.7 ± 6.4	4.5 ± 0.7	23.0 ± 1.6
Green algae (%)	3.2 ± 1.0	1.4 ± 0.6	9.6 ± 1.7	10.7 ± 4.1	39.7 ± 3.3	1.6 ± 1.0	2.8 ± 1.0	1.2 ± 1.1
Count of fauna (cucumbers, urchins, etc.)	97	86	1	0	2	1	2	7

ALGAE SURVEY DATE: 12 MAR 2025

MMR conducts coastal algae surveys at 8 sites every two months. Values represent the average percent cover of the substrate (± standard error) based on ten 1m² quadrats.

ALGAE PERCENT COVER (%)

Legend: ■ RED ALGAE ■ BROWN ALGAE ■ GREEN ALGAE ■ NON-ALGAE
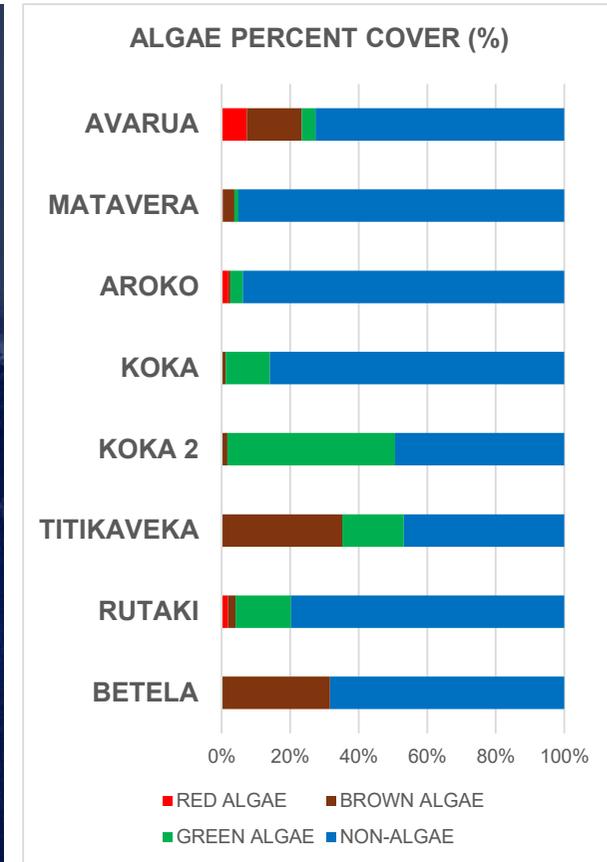
Average percent cover ± standard error	Avarua	Matavera	Aroko	Koka	Koka 2	Titikaveka	Rutaki	Betela
Total algae cover (%)	37.0 ± 5.6	18.3 ± 2.9	14.7 ± 3.4	25.0 ± 5.8	61.8 ± 6.9	57.9 ± 4.3	36.7 ± 6.0	35.4 ± 4.3
Red algae (%)	6.4 ± 1.5	0.3 ± 1.3	1.8 ± 1.0	0	0	0	0.5 ± 0.5	0
Brown algae (%)	13.9 ± 4.9	2.9 ± 1.1	0.5 ± 0.5	1.0 ± 0.5	1.3 ± 0.6	31.6 ± 4.5	0.7 ± 0.3	29.9 ± 3.4
Green algae (%)	3.5 ± 1.6	1.0 ± 0.6	3.3 ± 1.1	11.3 ± 3.8	37.9 ± 3.0	16.2 ± 3.0	12.9 ± 4.0	0
Count of fauna (cucumbers, urchins, etc.)	65	51	2	7	7	2	0	4

ALGAE SURVEY DATE: 24 JUN 2025

MMR conducts coastal algae surveys at 8 sites every two months. Values represent the average percent cover of the substrate (± standard error) based on ten 1m² quadrats.

ALGAE PERCENT COVER (%)

Average percent cover ± standard error	Avarua	Matavera	Aroko	Koka	Koka 2	Titikaveka	Rutaki	Betela
Total algae cover (%)	13.0 ± 4.9	37.4 ± 6.3	10.9 ± 3.1	26.1 ± 8.9	54.5 ± 5.0	40.5 ± 5.1	49.9 ± 6.0	0
Red algae (%)	3.9 ± 2.4	0	3.0 ± 1.1	0	0	0.7 ± 0.4	0.2 ± 0.2	0
Brown algae (%)	2.2 ± 1.0	29.4 ± 4.7	3.6 ± 1.5	0	2.5 ± 1.0	17.7 ± 4.0	12.2 ± 2.2	0
Green algae (%)	6.6 ± 2.6	0.6 ± 0.2	4.2 ± 0.8	16.7 ± 5.4	51.3 ± 3.3	22.0 ± 1.8	37.5 ± 4.9	0
Count of fauna (cucumbers, urchins, etc.)	83	24	3	4	17	16	1	0