

Project Seychelles

Mineral accretion – assisted coral restoration research

 Fregate Island - 4°35'1"S 55°56'46"E

Base Info

Project type: Coral reef restoration research

Partner: [Fregate Island](#)

Funding: [Blancpain Ocean Commitment](#)



Budget
50'000 USD



Size / area
400m²



Start Date
April 2021



Duration
15 months

Background

Coral reefs are nearly 400 times richer in species diversity than any other ocean habitat. There is still no policy framework in the Seychelles to conserve coral reefs on a national level. Therefore, it is necessary to develop solutions to delay the effects of ocean acidification and rising sea surface temperatures through the restoration of degraded reef ecosystems. To mitigate the impact of the pressures, an innovative active coral restoration technique, Mineral Accretion Technology (MAT), uses low voltage electricity to support the survival and growth of corals through the electrolysis of seawater.

Objective & Outcomes

- To build a coral nursery with 40 structures
- To attach and monitor over 640 coral fragments
- To support coral fragments growth and survival
- To optimize the Mineral Accretion Technology
- To increase fish populations in a degraded rubble field
- To gather knowledge on settlement preferences
- To observe advantages of nursery cleaning



Implementation

Approach

This coral restoration experiment will be initiated by attaching 640 coral fragments from four species on 40 steel metal reef structures, powered by MAT. This project aims to find the most suitable and energy-efficient approach for coral restoration. The study investigates the capacity of MAT to support coral growth, health and survival when applied at different times throughout the day. Specifically, the effects of MAT are observed with electricity running during 24 hours, compared to 12 hours during the day or 12 hours during the night. The effect of cleaning structures is also assessed, as well as settlement preferences of gametes of bailed out polyps to set up the baseline indications for future large-scale restoration projects around Fregate Island and elsewhere.

Milestones

Months 1-2: Implementation of the coral nursery powered by MAT

Months 2-13: Monthly assessment of the growth, health and survival through in situ measurements and photographs

Months 2-13: Statistical analysis & report writing

Months 13-15: Publication & poster at ICRS

Deliverables

- Optimization of MAT
- Establishment of guidelines for future large scale restoration projects
- Transformation of study site into a coral nursery

