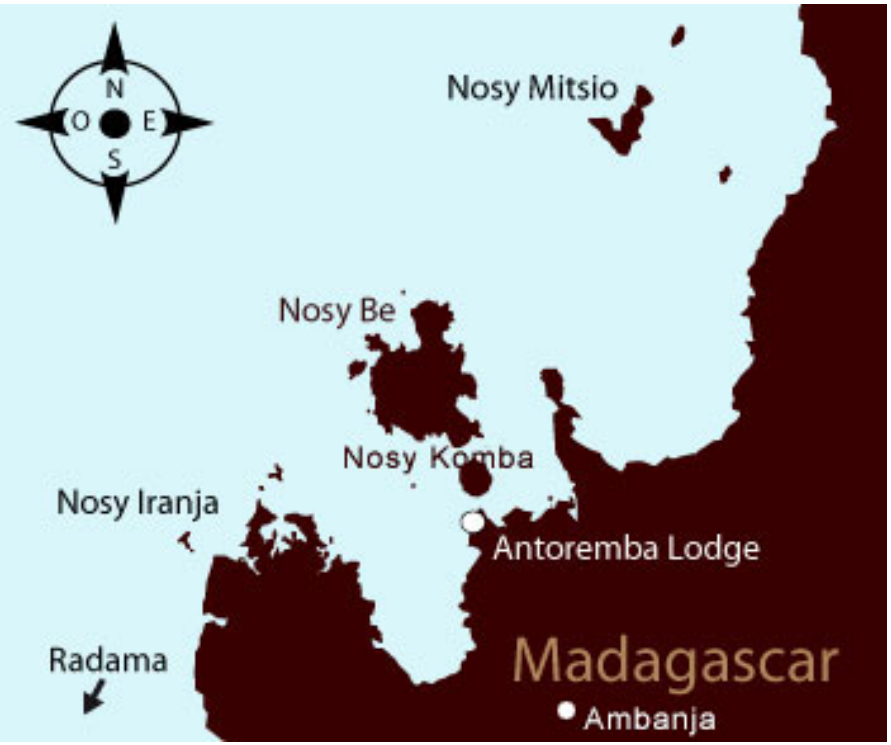
Coral community structure around Mitsio archipelagos, northwest Madagascar

Jules Pierro TSIMBAZAFIHERY, 2022
Marine biologist

Context and study area

The Mitsio archipelago's coral reefs are amongst Madagascar's healthiest and biologically diverse. However, climate change induced stressors such as the 1998 and 2016 El Nino events and fishery pressures have caused high mortality in scleractinian coral communities.



A study was conducted in November 2020 to assess the current structures of coral community, more specifically, the spatial variability in generic richness, composition, density, and colony size-frequency distribution of scleractinian coral community in the reefs of Mitsio archipelagos.

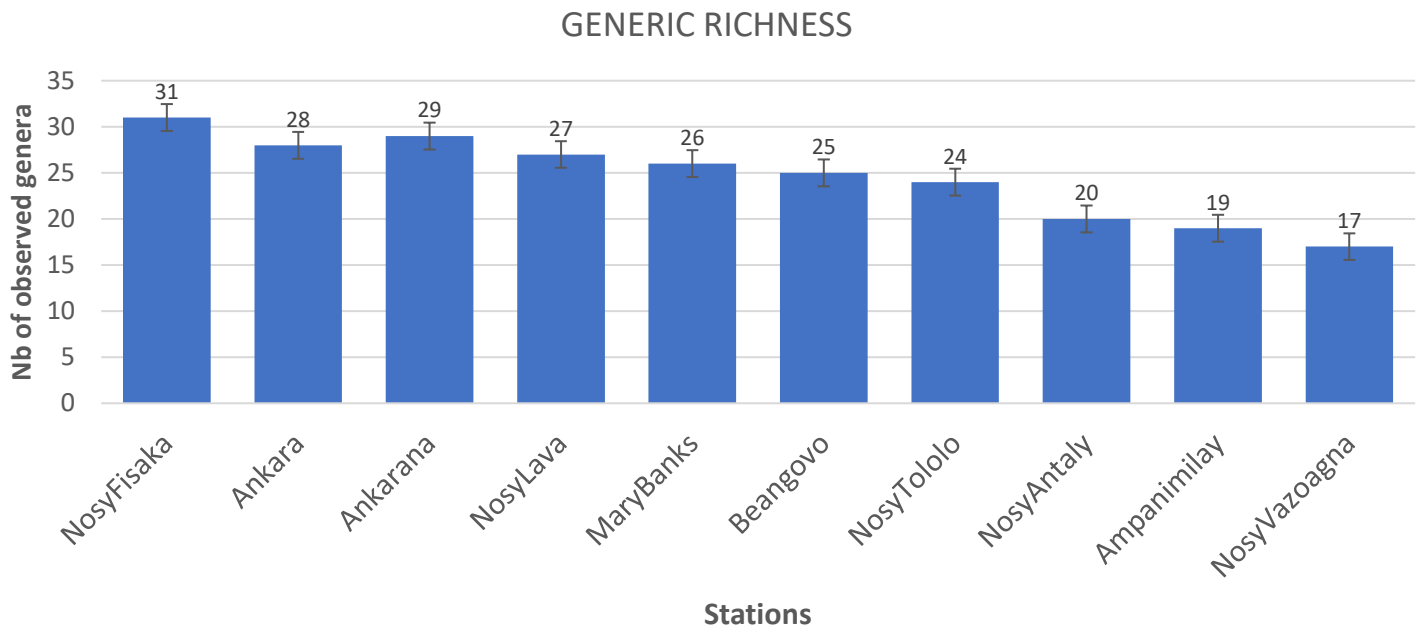
Methodology

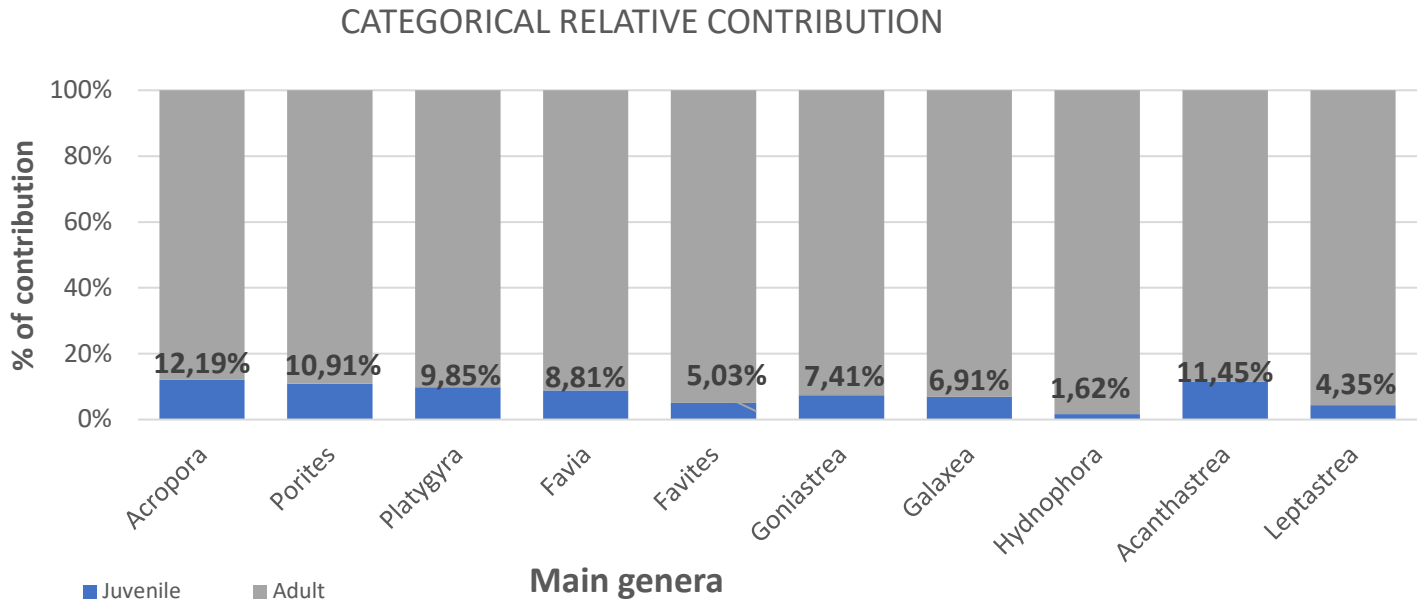
- Data collection was conducted by underwater diving (depth: 7 to 12m)
- 10 stations (3 transect of 10m of length*1m of width) per station laid paralelly with the shore

DATA COLLECTED PER TRANSECT			
Genera identification	**Total number of genera**	**Colonies size class**	**Categories class**
Coral genera identification method (visual)	Acounting of total genera in 10m square	> 5 cm	Adult
		< 5cm	Juvenile

STUDY OF ASSEMBLAGE STRUCTURE			
Spatial variation of generic richness	**Density of colonies (adult or juveniles)**	**Juvenile and adult contribution in coral assemblage**	**Distribution of size class**
Number of genera observed per station	Number of colony observed by meter square	Proportion by categorie of colonie by genera per station or site	Identification of the most presented class of size

Results


GENERIC RICHNESS
Nb of observed genera
35
30
25
20
15
10
5
0
31
28
29
27
26
25
24
20
19
17
NosyFisaka
Ankara
Ankarana
NosyLava
MaryBanks
Beangovo
NosyTololo
NosyAntaly
Ampanimilay
NosyVazoagna
Stations


CATEGORICAL RELATIVE CONTRIBUTION
% of contribution
100%
80%
60%
40%
20%
0%
12,19%
10,91%
9,85%
8,81%
5,03%
7,41%
6,91%
1,62%
11,45%
4,35%
Acropora
Porites
Platygyra
Favia
Favites
Goniastrea
Galaxea
Hydnophora
Acanthastrea
Leptastrea
Main genera
Juvenile
Adult