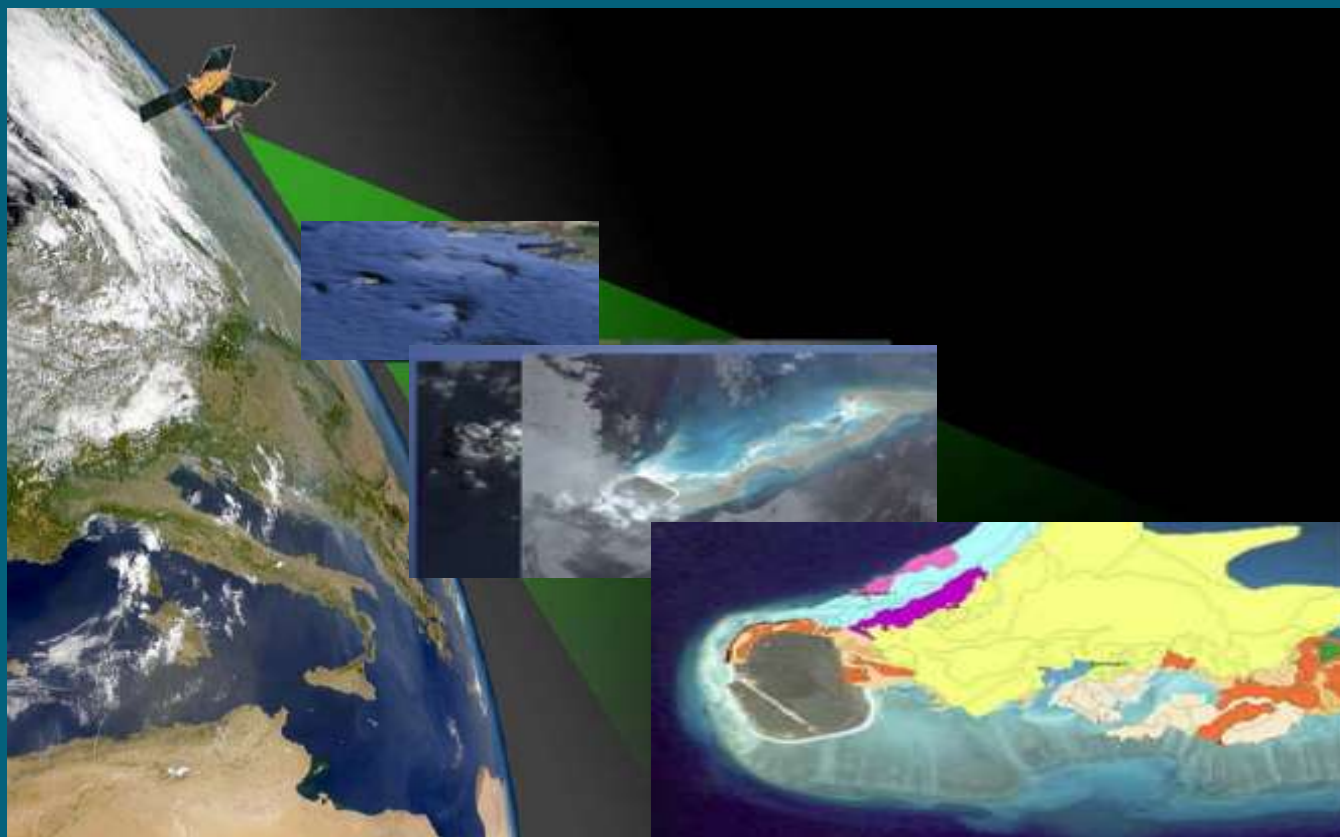


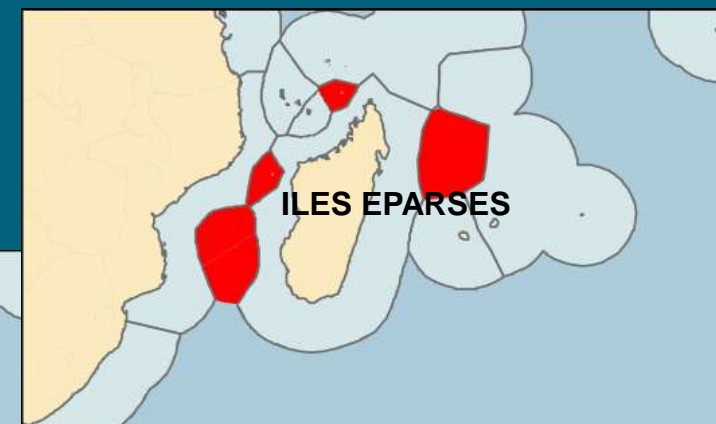
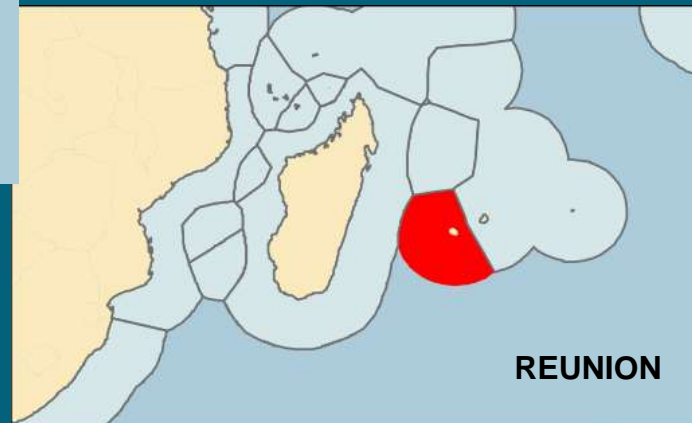
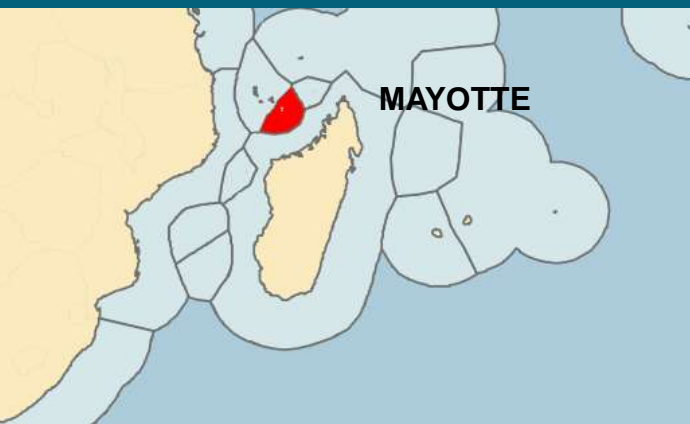
French Indian Ocean Territories (FIOT) coral reefs

A general overview



FIOT coral reefs : an heterogeneous situation

Island	Land area (km ²)	EEZ Area (km ²)	Population	Population Density (hab/km ²)	Growth rate	Annual median standard living (euros)
1. Reunion	2504	322 600	781 962 (2006)	312	1,5%	11 040
2. Mayotte	376	74 000	186 500 (2008)	496	3,2%	2 417
3. Iles éparées	43	661 300	0	-	-	-



territory	Fish	Coral	Molluscs	Seagrass
1. Mayotte (+ Zélée)	765 (2009)	app. 200	>1000 (estimate)	12 (7 genus)
2. Iles éparées + Geyser	305 to 568 per island		?	5 genus
3. Reunion	965 (2009)	170 (2010)	1 348 (2010)	1 (1 genus)

FIOT coral reefs : an heterogeneous situation but a unique richness for France and EU

From young fringing reefs to “old” coralline islets, an important diversity of landscapes, habitats & species.

A wide distribution in the Western Indian Ocean region, with so great concern for regional conservation issues of marine life facing the Climate Change challenge.



GEYSER BANK



EUROPA



REUNION



MAYOTTE



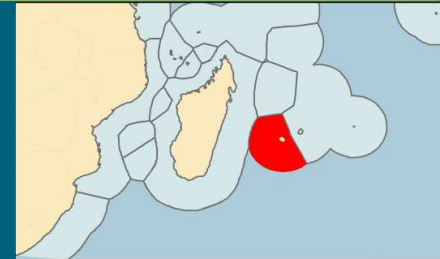
JUAN DE NOVA

FIOT coral reefs : an heterogeneous situation

REUNION

Coral reefs of this volcanic (so “young”) island are located exclusively on the West coast, where dense population lives.

Réunion is a french departement and a EU ultraperipheral region.



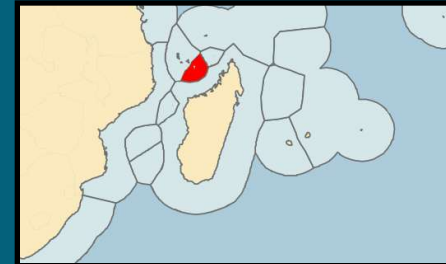
territory	Reef Area (km2)	Reef classes
1. Reunion	12	4
2. Mayotte (Zelée + Geyser)	364	35
3. Iles éparses	169	20

FIOT coral reefs : an heterogeneous situation

MAYOTTE

0 5 10 Km

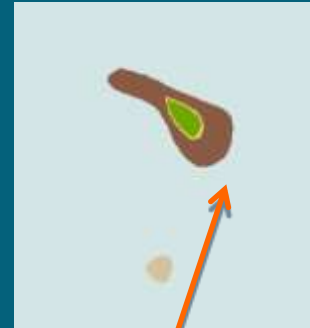
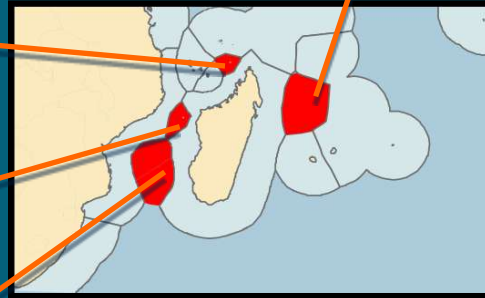
Datum : WGS 1984
projection : UTM Zone 38S



Coral reefs in Mayotte lagoon are well developed and offshore systems have been associated in the same management unit: Zélée bank.

territory	Reef Area (km2)	Reef classes
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2. Mayotte (Zelée + Geyser)	364	35
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ILES EPARSES (SCATTERED ISLANDS)



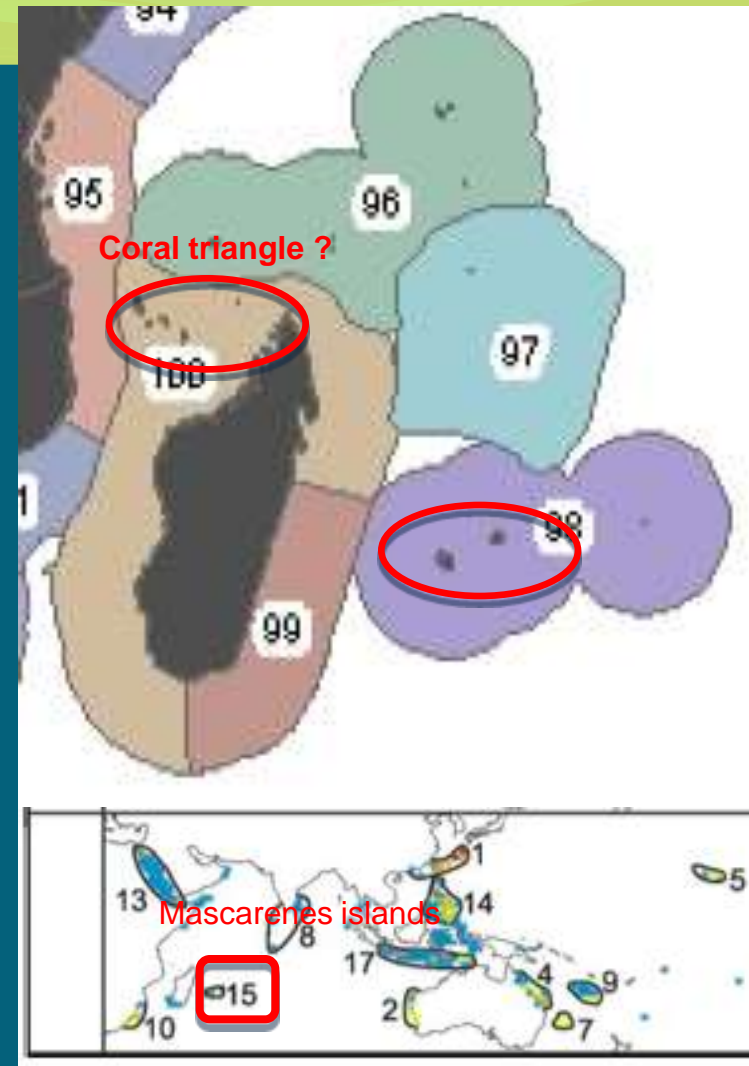
They are administrated by TAAF (Terres Australes et Antarctiques Françaises)

territory	Reef Area (km2)	Reef classes
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FIOT coral reefs are important for biodiversity and connectivity processes.

The region, including FIOT is recognised as a key area for marine & coastal conservation purposes:

- 3 Marine Ecoregions: 97, 98 & 100 (TNC, WWF)
- One hotspot for marine biodiversity (Callum et al, 2002)
- Habitat & species richness, connectivity (not completed to date)

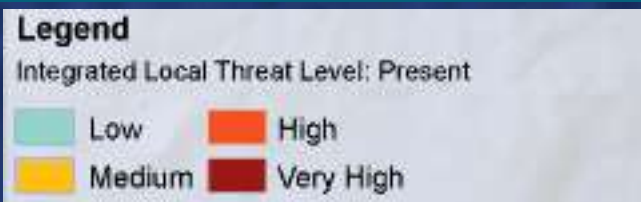


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FIOT coral reefs are under chronic and acute stress factors: actual situation.

Present local threats (Reef at Risk, WRI, 2011):

1. Coastal development,
2. Watershed based pollution,
3. Marine based pollution,
4. Overfishing and destructive fishing



FLOT coral reefs are under chronic and acute stress factors: future situation.

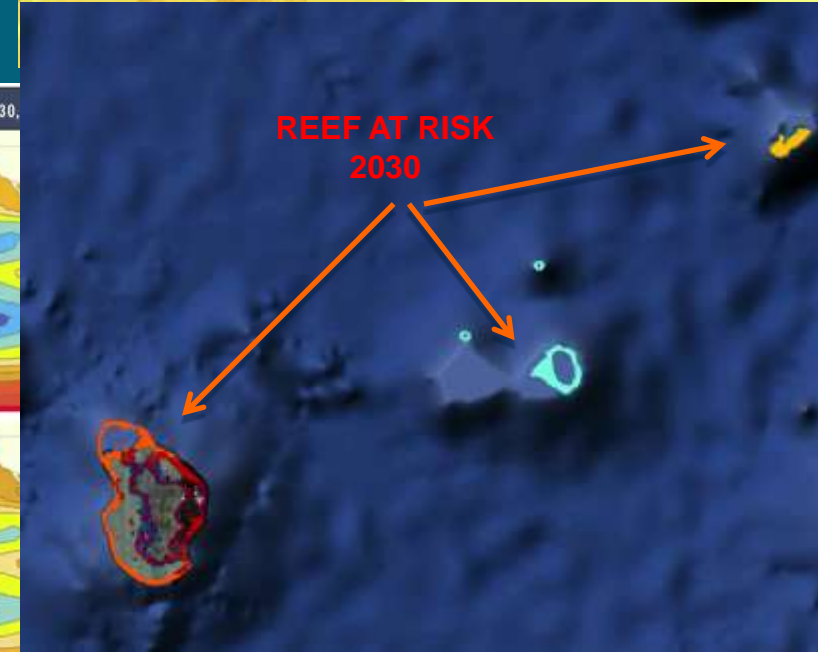
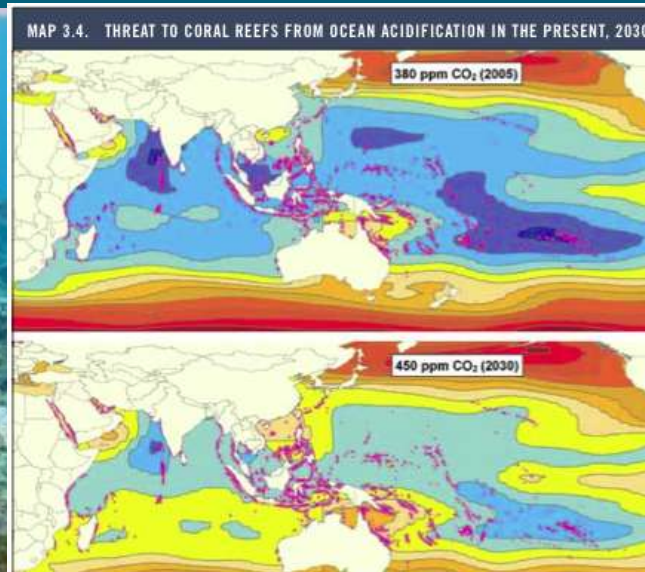
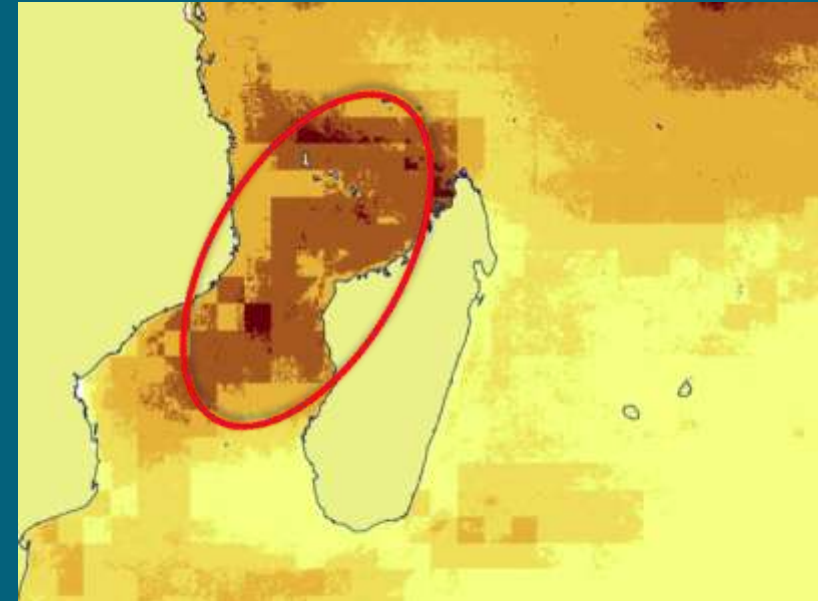
Future threats of great concern, with relation to Climate Change action plans:

1. Bleaching coral reef susceptibility.

Réunion is less concerned than Mozambic channel locations. Despite strong events observed too.

2. Ocean acidification.

In 2030, Réunion should be less affected by global change than other FLOT.



Management & Conservation issues.

Constructive initiatives addressed under French umbrellas and key targets to mitigate anthropogenic and natural pressures on coral reefs:

1. Health monitoring

1. GCRMN including Reef Check (node 3 under COI)
2. Unique data entry system interoperability (CoReMo3)
3. Relevant indicators for (i) reporting in the EU framework for coastal waters quality (2015 deadline), (ii) Climate Change, ...

2. Conservation planning

- MPA designation (ecoregional analysis)
- MPA operational management
- RAMPOI (IO MPA network) contribution
- Biodiversity assessments (habitats & species)

3. Marine Strategy (SMM)

- implemented in France and so in Réunion, Mayotte, Iles Eparses

Management & Conservation issues:

1. Health monitoring

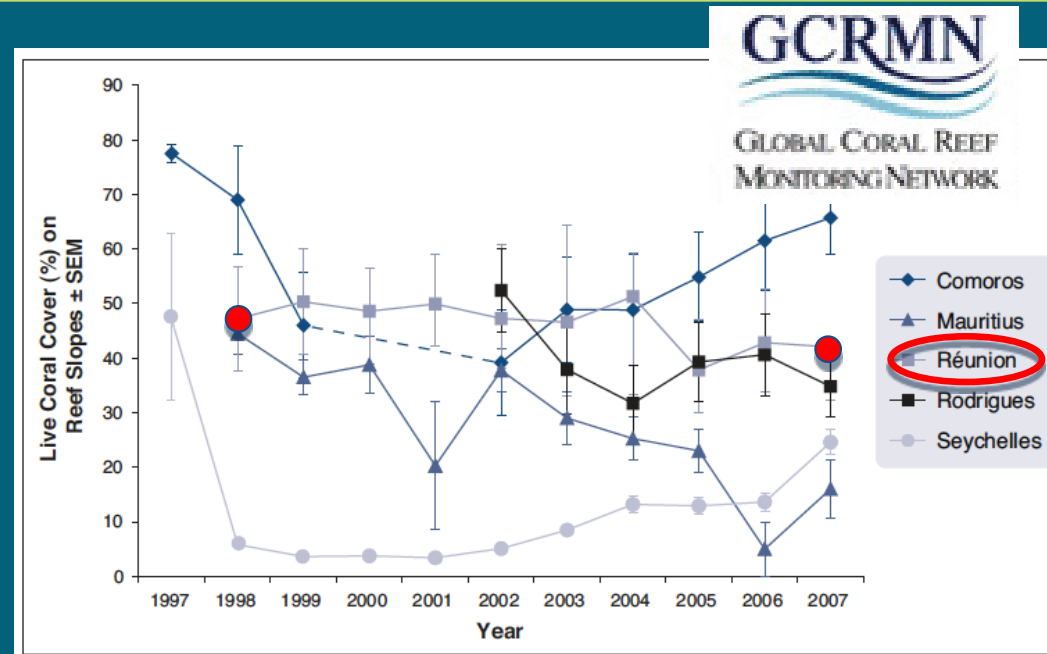
Coral reef monitoring is conducted in all FIOT, but non all as part of the GCRMN node 3:

Mayotte et Iles Eparses are not included.

A network of stations exist:

- 43 “Expert” stations, implemented by scientists, MPA managers
- 29 “Non-scientific” stations, implemented by local stakeholders (divers, surfers, ...), a community-based arm of the GCRMN

All monitoring data are stored in CoReMo3, an interoperable unique data entry system.



Management & Conservation issues.

2. Conservation planning

→ MPA implementation

Mayotte :
3 MPAs, 11 % of reefal system.
“Parc Naturel Marin”, including EEZ, implemented
in 2010

Iles Eparses:
Project of “Reserve Naturelle” (Europa Island) and
“Parc Naturel Marin” adjacent to Mayotte
(Glorieuses island). Some regulations already in
action.

Reunion :
Reserve Naturelle Marine (RNMR)
implemented
in 2007, 90% of Réunion reefs concerned



Management & Conservation issues.

3. Marine strategies



(French ICRI) action plans + local research/management projects are implemented by national/local institutional bodies (regional councils, DEAL, ...) scientific institutions (University of la Réunion, IRD, IFREMER, ...) and executive agencies (AAMP, ...)

IFRECOR target fields as part of action plans :

1. Observatories & Monitoring (Health status, Climate Change)
2. Biodiversity
3. Mapping (GIS, database)
4. Marine Protected Areas
5. Socio-economic services
6. Sensitization
7. Governance

Additional significant initiatives are supported by institutions (Région, Départements) and EU, focusing on Research, Education, ...

Conclusions & Perspectives.

Under the framework of initiatives such as IFRECOR, “[Livre Bleu Océan Indien](#)”, regional/local initiatives are implemented to arrest the erosion of coral reefs.

Sustainable EU “Marine strategy” & “Water strategy”, applied for french territories, allow action plans as a widespread recognition is that action is urgent to:

- Ensure ecological and socio-economical services provided by coral reefs in the region, incl. rehabilitation of damaged areas;
- Create conditions for efficient partnerships (monitoring, capacity building, applied & fundamental research) in a taskforce/network;
- Set up a regional network of MPAs to ensure connectivity processes to face the CC consequences for coming decades.



Conclusions & Perspectives.

Think global, Act local !!

INTERNATIONAL

ICRI, GCRMN, ICRAN

STRATEGIE "MILIEU MARIN"
DIRECTIVE CADRE "EAU"

STRATEGIE "MILIEU
MARIN"
DIRECTIVE CADRE
"EAU"



NATIONAL

NAIROBI CONVENTION
CRTF

INDIAN OCEAN
COMMISSION

LOCAL

LOCAL IFRECOR
COMMITTEE

N-CRTF

LOCAL
INSTITUTIONS

MARINE PARK

EDUCATION
NGOs

SCIENTISTS

RESEAU
REGIONAL
RECIF

REGIONAL

Thanks for your attention !

Mayotte, 8 years after El Nino 1988 !!

A full-page underwater photograph showing a scuba diver in the upper left quadrant, swimming horizontally over a vast, healthy coral reef. The reef is composed of numerous large, flat, table-like coral structures (Acropora) that cover the seabed from the bottom left towards the right. The water is a deep, clear blue, and the overall scene conveys a sense of a thriving marine ecosystem.