

# 2023 ACTIVITY REPORT



**coral**  
GUARDIAN

## OUR MISSION

We protect and restore coral ecosystems by involving local communities and raising public awareness.

# IN BRIEF

## 11 YEARS

working with local communities to protect coral reefs

## 5 PROGRAMS

of coral reef restoration supported since the beginning

## 70,678 CORALS

restored since the beginning on our two programmes

## 8,978 PEOPLE

reached locally in Indonesia and Spain

More than

## 11 MILLION

people reached worldwide since the beginning



# OUR IMPACT IN 2023



**11,265 corals**  
transplanted  
in **Indonesia**



**154 corals**  
transplanted in  
**Spain**, and **over**  
**200 corals** **cared**  
**for every month**



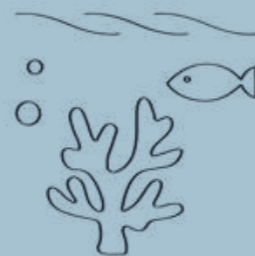
**1.2 has** of  
**marine**  
**protected area**  
in **Indonesia**  
since 2019



**831 kg**  
**of waste**  
**cleaned up**  
in Spain



**165 people**  
**involved** in the  
project in **Spain**



**169 children**  
**involved** in coral  
reef protection  
classes



**1 call for**  
**projects**  
**applications** for  
the Blue Center



**1 Scientific**  
**Advisory**  
**Board** set up

# EDITO

2023 has been a transformative year for Coral Guardian! At the start of the year, I had the honor of taking over leadership from our co-founder, Martin Colognoli, whose remarkable work has shaped this organisation over the past decade.

I would like to pay tribute to Martin for his compassionate vision, deep commitment to coral protection, and exceptional leadership. His contributions have enabled Coral Guardian to become a key player in the global preservation and restoration of coral reefs. His work is both touching and inspiring, and I am committed to continuing this legacy with the same kindness, passion, and determination.

2023 has been a pivotal year of growth for Coral Guardian! We launched our first call for projects to select a new coral restoration program in a previously unexplored geographical area. This initiative reflects our ongoing commitment to expanding

our reach and addressing the growing challenges facing coral reefs and the communities that rely on them.

This progress would not have been possible without the enthusiasm, professionalism, and dedication of our teams in France and in the field. Their unwavering commitment and expertise are the vital force of our organisation, enabling us to fulfill our mission effectively and impactfully. A heartfelt thank you to our team, the on-ground organisations, and all our volunteers who support us daily!

As part of our scientific commitment, we established a Scientific Advisory Board composed of renowned experts in coral reef restoration. This council plays a crucial role in selecting restoration methodologies and field monitoring practices, ensuring that our actions are based on the best available practices. We are deeply grateful for their trust and involvement.

I am confident that Coral Guardian will continue to be a leader in coral reef preservation by working closely with local communities and the international community dedicated to protecting these vital ecosystems. Our work is more important than ever in a world where marine ecosystems face unprecedented pressures.

**Together, we can make a significant difference and ensure a sustainable future for coral reefs and the communities that depend on them. Thank you for your support, and I invite you all to join us in this vital mission and continue supporting Coral Guardian in its efforts to protect our oceans.**



**Coco Tamlyn**  
*Director*

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# PARTICIPATORY MARINE CONSERVATION

Coral Guardian's main mission is to protect coral ecosystems by giving everyone the means to take action.

To achieve this mission, we are developing tools and different types of support to enable as many people as possible to find out about and take action to protect and restore endangered coral ecosystems. We welcome anyone who wants to get involved and become a coral guardian. Individual awareness becomes collective action.

Our nonprofit works through three pillars of action:

- restoring and protecting coral in the field;
- raising awareness and involving local and international players;
- monitoring and scientific research.

We are working with grassroots initiatives in Indonesia and Spain, and will be supporting another grassroots initiative in 2024 in a new geographical area. In terms of raising awareness, we are active in France and internationally.

DISCOVER OUR HIGHLIGHTS OF 2023!

## BLUE CENTER

The Blue Center is a support programme dedicated to any project leader within a local organisation wishing to develop a coral reef restoration project around the world. The aim is to provide support and the keys to any local player who needs help to take action on the ground and respond to the degradation of coral ecosystems.

We provide each project we support with theoretical and practical training, as well as regular monitoring, enabling them to rapidly develop their skills and respond as effectively as possible to every need for the development of their project.

Our partners at the Blue Center:

- are grassroots nonprofits;
- involve local communities at every stage of their project;
- are motivated to develop a coral reef restoration project for the benefit of the communities that depend on these ecosystems.

“ We’re very proud to be supporting the development of our partner field projects, but also to be opening up new horizons to change the scale of the Blue Center’s impact.

– Florina Jacob, Field and Scientific Project Manager Coral Guardian

**2019**

programme launch

**8**

local nonprofits supported since the start

**2020**

first programme supported in the Mediterranean

**3** countries and **2** French departments

**1**

training manual available for project leaders

**1**

call for projects in 2023 for a new geographical area



## PARTICIPATORY MARINE CONSERVATION

# PROGRAMME IN INDONESIA, IN THE FLORES SEA



FROM THE BEGINNING

8

full-time employees in the local team

69,787

corals transplanted

3

times greater fish density on the restored reef at Hatamin

1.2

hectares of marine protected area

7

times more fish caught (kg) around the Hatamin MPA in 2019 than in 2016, helping to support local livelihoods

4

training exchanges with various restoration stakeholders in Indonesia

750

villagers from the fishing village of Seraya Besar made aware of and/or involved in the project

## PROJECT OVERVIEW

- 🌟 2015, launch of the project
- 🌟 Pulau **Hatamin**, in the Flores Sea, Indonesia
- 🌟 In collaboration with local organisation **Yayasan WES**
- 🌟 Issue: the destruction of coral by **dynamite fishing**





2015



2023



## 2023 IN SUMMARY

More than

**11,200** corals transplanted

**1**

eco-volunteer programme launched

**1**

new biological monitoring methodology implemented

**3**

new awareness-raising tools for local children

**169**

children took part in regular English lessons and awareness-raising activities on the importance of coral reefs

**3**

training courses for the local team on several subjects (coral restoration, coral identification and audiovisual) in partnership with 2 external organisations



## Restoration actions

By 2023, more than 11,200 corals had been transplanted to the Hatamin Marine Protected Area (MPA) in Indonesia. Every month, the local team carries out coral transplantation work, but how? As a reminder, the substrate in the area was dominated by coral rubble (small pieces of dead coral), preventing the corals from colonising and the reef from recovering naturally.

The corals therefore needed a stable substrate to allow them to grow and provide habitat and shelter for marine biodiversity. The coral cuttings from healthy colonies were therefore installed on structures similar to metal tables with grids, using metal wires. This method, adapted to the local context and resources, provides a stable substrate for coral development, stabilises the rubble substrate, and also provides shelter for marine biodiversity, which anchors itself to the structures or uses them as shelter.

Protecting the restoration area is one of the pillars of the project to ensure its viability. Within our 1.2 hectare MPA around Hatamin, fishing and boating activities are restricted. However, visits by tourists and the local community are permitted in the case of responsible tourism practices.



## Raising awareness

In 2023, strengthening local awareness within the programme was a priority in order to reach the youngest children as well as local adults.

English lessons and awareness-raising on the importance of coral reefs continued in partnership with the 3 schools in the town of Labuan Bajo and the village of Seraya Besar. 169 children benefited from the programme every month. 3 new tools were developed, in collaboration between the local team and the team in France. 2 interactive games for children and 1 transplant guide for children were created.

These tools were tested by the WES team and a group of 10 children from the village of Seraya Besar, with very positive feedback! Following this pilot initiative, the team is organising further visits by children to Hatamin to play and transplant corals.

At the same time, an awareness-raising evening was organised for adults in the village of Seraya Besar. At this event, local manager Jonas presented the results of the fisheries monitoring carried out by the project since 2016 to the village chief and 68 residents of Seraya Besar, including children, women and fishermen. This was an opportunity to discuss their perception of the project, as well as to confirm their support for the protection of the Hatamin MPA and in favour of the programme being carried out.

We take this opportunity to thank Aurélie Brulle, a volunteer in scientific mediation and communication, for her valuable assistance in the development of various projects this year!

## The eco-volunteering programme

It's making a comeback! After a 3-year break, the eco-volunteering programme is back on Hatamin Island in partnership with the French travel agency Mahalo. This one-week programme is open to coral reef enthusiasts who want to learn about the local context on Hatamin Island from the WES team. What's planned? Coral transplantation, biological monitoring, exchanges with the fishermen of Seraya Besar, awareness-raising activities and more.

More information on the Mahalo partner website:  
[www.mahalovoyage.com/coraux-a-komodo/](http://www.mahalovoyage.com/coraux-a-komodo/)

## Meeting between the Coral Guardian France team and WES

The Coral Guardian France team had the great opportunity this year to spend a month in the field. This was a vital opportunity to talk to the local team and the community in the village of Seraya Besar, as well as to see the Marine Protected Area and the restored reef for themselves. This mission was full of discussions and superb dives, and was particularly productive for the whole team!

During this mission we were able to work with the local team on the strategy for 2024 by carrying out a SWOT analysis and a retrospective of past years. But also by gathering everyone's desires and ideas for the future.



We also organised a number of training sessions for the team. Internally, with training on the biology and identification of the types of coral present locally, and externally, with the visit of the Coral Triangle Center (CTC) nonprofit, which trained the team in Reef Stars techniques and coral restoration in general. Finally, several members of the team were able to take a photo and video training course thanks to the W2P Production agency. The team was delighted to be able to improve its skills thanks to all this learning and sharing!

We also took part in a number of communication initiatives, including the recording of content and the production of interviews that will be broadcast during 2024. We also had a visit from the France 2 television channel for the filming of a mini report (6 minutes) to be broadcast at the end of 2023 as part of the programme 'Les superpouvoirs de l'océan'.

The French and Indonesian teams bid a fond farewell to each other, and are highly motivated for the events to come! Together, we are pursuing our shared goal of restoring and protecting the coral reefs in the area for the benefit of the neighbouring local communities.



“ I’m particularly grateful that the French team visited the children at the school in the village of Seraya Besar to talk to them in English. For me, it was extraordinary! I hope we can all meet again in Indonesia!

– Abdur, Coral Guardian



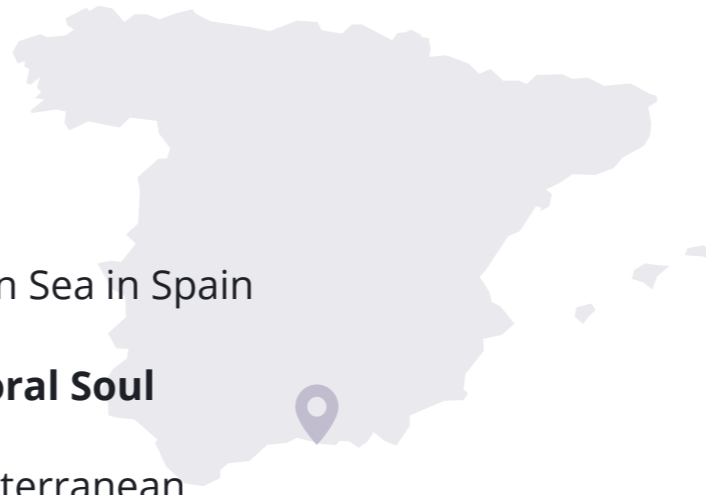
PARTICIPATORY MARINE CONSERVATION

# DEEP CORE PROJECT IN SPAIN, IN THE MEDITERRANEAN SEA



## PROJECT OVERVIEW

- 🌀 **2020**, launch of the project
- 🌀 In **Punta de la Mona**, in the Mediterranean Sea in Spain
- 🌀 In collaboration with the local nonprofit **Coral Soul**
- 🌀 Issue: **high levels of pollution** in the Mediterranean



## FROM THE BEGINNING

1

local employee working full-time on the project

325

people involved in the project (divers, boat captains, researchers, students)

891

corals restored

1,980

kilograms of waste recovered from the coastline and seabed

8,278

people reached locally

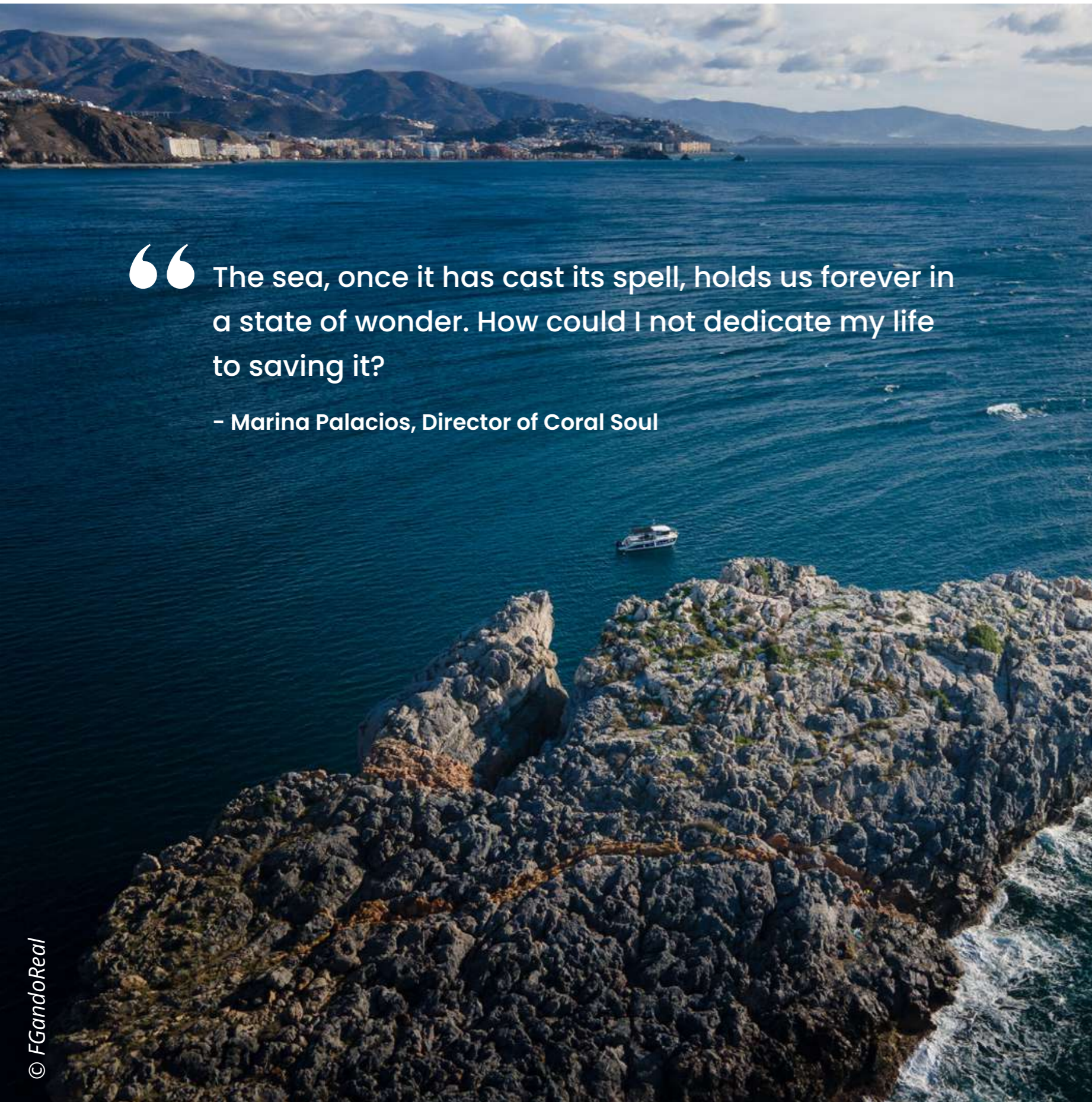
3

nurseries set up at depths of between 30 and 36 metres to recover staghorn corals (*Dendrophyllia ramea*)

3

universities involved in research into cold-water corals and the pollutants present there





“ The sea, once it has cast its spell, holds us forever in a state of wonder. How could I not dedicate my life to saving it?

– Marina Palacios, Director of Coral Soul

## 2023 IN SUMMARY

**831**

kilograms of rubbish were recovered from the coastline and seabed at depths of up to 46 metres

**154**

corals were repopulated this year

**5,626**

local people made aware of the need to protect Mediterranean corals

**1**

short film about the project

**91%**

of the seabed in the target zone completely cleaned

**90%**

coral survival rate

*(on average, after 2 years of recovery and transplantation)*

## Actions to restore the coralligenous beds

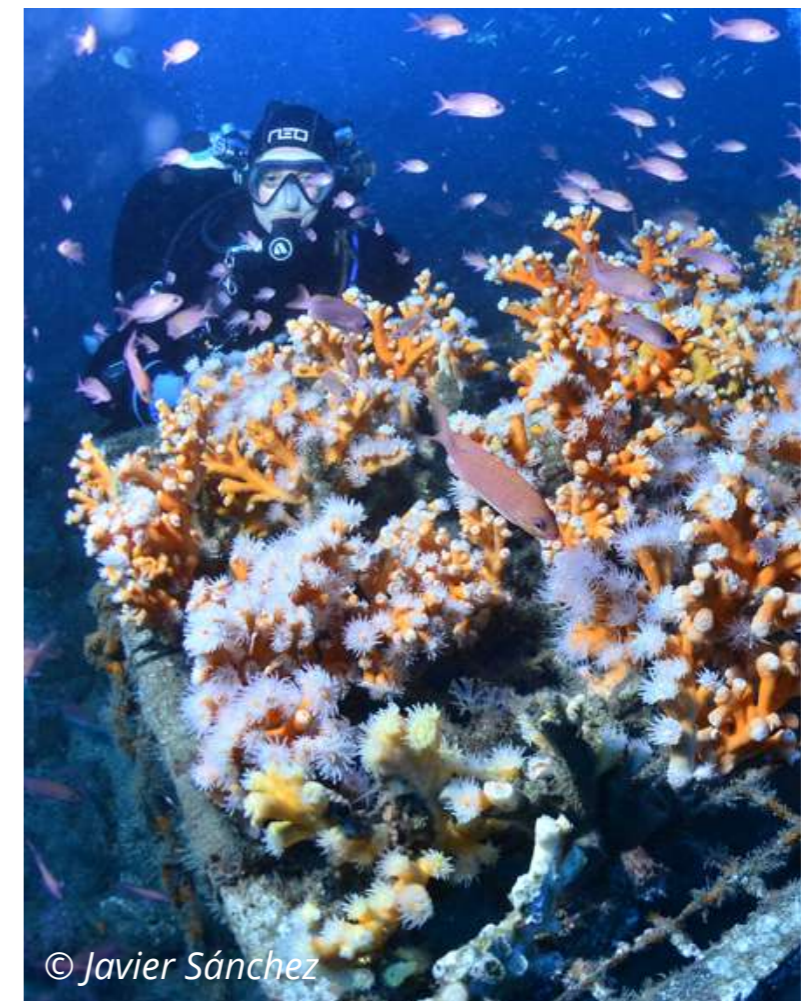
The Deep CORE project is making rapid progress in the Punta de la Mona Special Area of Conservation on the Mediterranean coast of southern Spain. In this 121-hectare protected area, the team led by Marina Palacios has been working to restore the coralligenous seabed at depths of between 30 and 47 metres since 2020. As a reminder, the population of staghorn coral (*Dendrophyllia ramea*), a species endemic to the Mediterranean and the Atlantic, is threatened here by pollution from fishing (abandoned fishing gear) and free anchoring. The biodiversity of the area, as well as the benefits that this ecosystem brings to neighbouring communities (tourism, fisheries), will therefore be threatened if nothing is done.

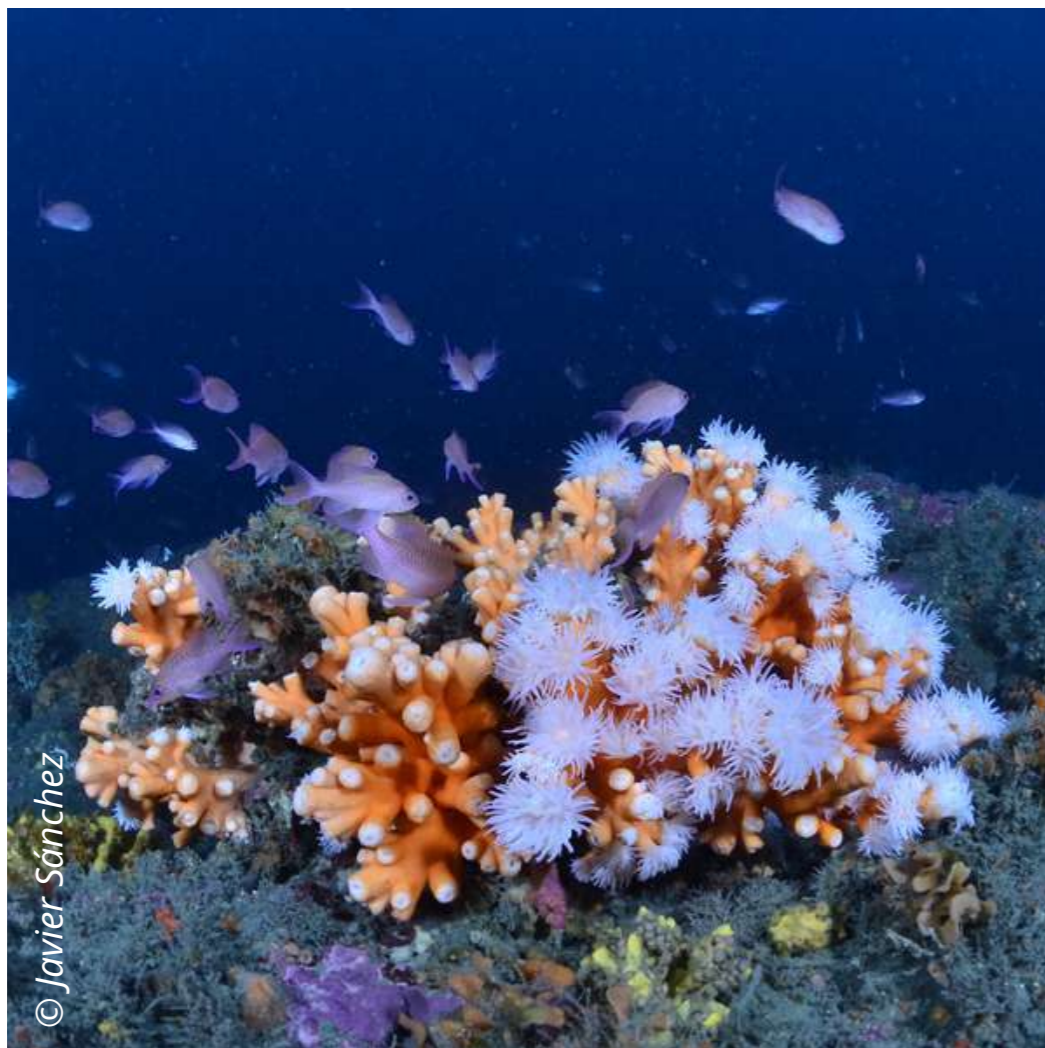
In 2023, the local team made progress in the recovery of the coral ecosystem with 11 actions to clean up the seabed and coastal areas, removing 813 kg of rubbish. We're delighted to have cleaned 91% of the target area this year! The initial area will be completely cleaned by 2024 and the team plans to extend these actions to new areas.

The 3 nurseries, located at depths of between 30 and 36 metres, take in corals detached from the seabed and in need of care. Every month, the project's divers care for around 200 corals in the nurseries to speed up their recovery. By 2023, we will have restored 154 healthy corals to the natural environment.

This figure may seem small, but 3 years after the project, we are reaching deeper areas, and the corals are more damaged than in shallower areas. They therefore need more time to recover in the nurseries before being transplanted to increase their chances of survival. This pre-transplant care ensures the success of the actions: we have a 90% survival rate after 2 years! Well done to the local team!

At the same time, advocacy initiatives are being put in place to raise local and regional government awareness of the importance of strengthening effective protection of the Punta de la Mona area and preventing further degradation of the ecosystem.





## Awareness-raising initiatives

In 2023, 22 awareness-raising campaigns were organised locally for different audiences. The audiences include children and young students from local schools, local and regional government institutions, divers, the general public and professional fishermen from Andalusia.

The Deep CORE project team has developed a wide range of tools to raise awareness of the importance of Mediterranean corals and actions to tackle their degradation. The programme included 360° videos and virtual reality headsets, interactive presentations on diving as a marine conservation tool, manual restocking games for children, presentations with several levels of technical content, and photographic exhibitions.

“ You just have to get to know the ocean to start loving it. Stop and smell it, open your eyes and see all the benefits it has to offer. As Sylvia Earle says, without blue, there is no green.

– Marina Palacios Minambres, Director of the Deep CORE project





PARTICIPATORY MARINE CONSERVATION

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# PROSPECTS FOR THE BLUE CENTER

In 2023, we wanted to increase our impact around the world and support more coral restoration initiatives involving local communities.

We therefore launched a call for projects, open to all non-profit organisations wishing to develop a coral restoration project and receive 3 years' support from the Coral Guardian team. The support includes technical, communication, project management and financial aspects.

We received 32 high-quality applications. A huge thank you to all the organisations that submitted their applications, it's encouraging to see so many teams committed to our coral reefs! Following a tough selection process, a new field project partnership will be launched in 2024.

We haven't forgotten all the initiatives that have come forward to learn, develop their networks and grow their projects, and we're getting ready to offer you solutions tailored to your needs in 2024...

We'll keep it a surprise for now!



# RAISE AWARENESS

## CORAIL exhibition

Since the end of 2019, we have been promoting a photographic exhibition called CORAIL. In partnership with our co-founder and photographer Martin Colognoli, it aims to highlight the harmony between humans and nature. It immerses the viewer in the project we are carrying out in collaboration with the fishing village of Seraya Besar in Indonesia.

In 2023, the exhibition raised awareness among a large number of people: at the Lyon aquarium, the Nausicaá national marine centre, the Nantes Natural History Museum, the “Now” coworking space in Lyon and the Sophia Antipolis media library. Many visitors came to learn about the local solutions we are proposing to the urgent need to protect our precious coral ecosystems.



“ It was a pleasure to host the CORAIL exhibition 1 year ago. This exhibition strengthened our partnership with Coral Guardian and naturally found its place in our Artists’ Corridor for 3 months. As corals are one of our biologists’ specialties, Martin Colognoli’s magnificent photos echoed the work they are doing to preserve and regenerate them. Our visitors were also able to discover in more concrete terms the importance of coral reefs for local populations and their involvement in saving them, which is fully in line with the Aquarium de Lyon’s role of raising awareness and providing information.

– Murielle Meynard, Sales and Events Manager Aquarium de Lyon



## Awareness-raising kit

Our awareness-raising kit is an entirely free tool, open to anyone wishing to raise public awareness of our cause. It consists of a presentation with a coral quiz, a video, postcards, a pre-written presentation speech, and an information sheet on coral biology and our actions!

In 2023 we modified this kit by incorporating maps from the Copernicus Marine Service, adding more scientific and precise details to our content. We also revised some of the presentation texts on coral ecosystems. Everyone can use the kit to spread the message in their own way and to the audience they want.

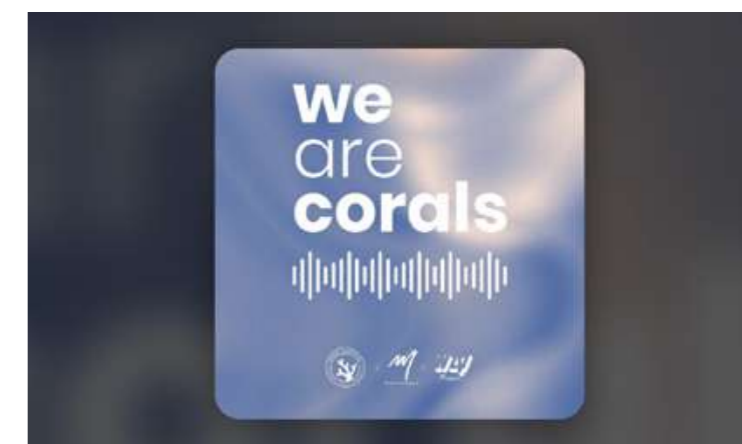
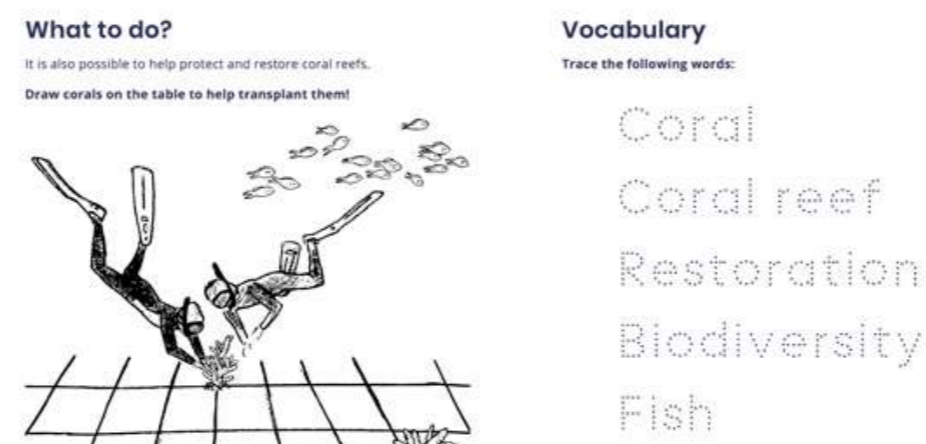
**By 2023, the kit had been used by more than thirty people across France and abroad, including in Canada, Spain, the United States and Senegal.**

## Colouring book

In 2023, we continued to use our first colouring book, developed last year. The theme of the colouring book was tropical corals, and it was designed to raise awareness among children living in the vicinity of the Marine Protected Area that we are restoring in Indonesia. Our local teacher Imaculada Hane was able to use it to educate 169 school children in the town of Labuan Bajo and the fishing village of Seraya Besar.

This format is very popular with children, so in 2023 we decided to create a new colouring book, this time on cold-water corals, such as those found in the Mediterranean. It will be fun and educational, with a series of different activities. For the illustrations, we partnered with the Condé school in Lyon. Their pupils spent 2 weeks learning about our nonprofit and corals, with a view to developing the graphics for the colouring pages. We then selected the creations that best matched our desires and needs for the booklet.

**The colouring book will be distributed from 2024 onwards.**




## Podcast

In 2023, we launched a podcast: We Are Corals, in collaboration with our co-founder Martin Colognoli and the digital production agency W2P. Episodes were posted throughout the year on various listening platforms. We Are Corals is an awareness-raising project combining podcasting and photography. Its main objective? Involve ambassadors by giving them a voice, and in so doing raise public awareness of the essential nature of the marine world.

The guests on the podcast came from a variety of backgrounds: underwater sport, sailing, scientific research, photography, protection of natural environments, etc. We met Guillaume Néry, Greg Lecoeur, Denis Allemand, Pierre Frolla, Aldine Amiel and Eric Röttinger.

**This podcast is still available on all listening platforms!**



Coral Guardian's commissioned work on the colouring book enabled the students to work like image professionals. By establishing precise specifications [...], the students were able to create illustrations under real professional conditions, with a useful and charitable purpose. [...] It's a great introduction to the profession.

**- Émilie Garcia - Teacher at the Ecole de Condé**



# SCIENCE



Science drives our coral restoration and protection work in the field, both biologically and socially. The local nonprofits we support are guided by our team in France in the development of protocols to best monitor the progress of restoration programmes in terms of the techniques used, the health of corals, but also the local social impact of the projects. All according to their specific interests and needs.

DISCOVER OUR  
DISCOVER OUR SCIENTIFIC  
PROJECTS!  
PROJECTS!



## SCIENCE

# IN FRANCE

### Launch of the Scientific Advisory Board

In 2023, we inaugurated our own Scientific Advisory Board for the first time since the creation of our nonprofit.

A team of volunteer scientists, made up of 5 researchers and experts in several fields related to coral ecosystem research and conservation, has joined Coral Guardian as an advisory board to help us develop our scientific and field strategy. Disciplines include coral conservation, coral ecophysiology, coral biology, scientific diving and social research.

The general objective is to audit and advise our team of employees on their strategy and their development based on the scientific expertise of the members, thus aiming for the proper development of our projects and actions with scientific rigor. We are very proud to be supported by this team of experts in their fields.

A huge thank you to the members for their time, for all the very interesting and constructive discussions, and for their kindness!



Aldine Amiel



Martin Colognoli



Olivier Detournay



Florina Jacob



Philippe Lenfant



Stéphanie  
Reynaud-Berthier

### Science articles for all: REEF blog

8 science articles in English and French were published in 2023 on our REEF blog. These articles, addressed to those curious or passionate about coral reefs, translate scientific articles for the general public, in order to make them more accessible for non-experts. In 2023, social topics were more present on the REEF blog, such as Indonesian communities' understanding of scientific figures or the role of women in marine sciences. However, coral ecology, management of local threats in coral contexts, and other biological topics also had their place.

A huge thank you to all our volunteers who helped create these articles for our readers: Aurélie Brulle, Dr. Leïla Ezzat, Vincent Diringer, Laura Bastide, Eloïse Thomine and Julien Paulet. We also thank the researchers who proofread the articles before publication, to ensure their quality and alignment with the original content.

### Partnership with Copernicus Marine Service

We are proud to have launched a partnership with Copernicus Marine Service in 2023 to create awareness tools including the role of satellite data in the protection and monitoring of marine ecosystems, in a context of climate change. This collaboration was manifested through the writing of simplified science articles on our REEF blog, informative posts on our various social networks and the adaptation of our awareness kit, highlighting tools and products offered by Copernicus Marine Service.

# IN INDONESIA

## Biological monitoring: fish and seabed

In 2023 our team carried out annual biological monitoring around Hatamin Island to describe the fish community and seabed present. Results from previous years had already shown an increase in fish abundance and diversity at Hatamin over time: 30 times more fish and 4 times more species on the restored reef in 2019, compared with 2016 (see 2019 activity report for more details).

This year, we refined the methodology to include new parameters in the analysis and two new control reef sites.

We compared our coral restoration area with 2 control areas with similar environmental conditions, in terms of exposure to waves and wind. Our sites were:

- **Restored reef (Hatamin Island):** Restored reef protected from fishing and boating by a line of buoys. Before 2016, the reef was destroyed by dynamite fishing.
- **Destroyed reef (Seraya Besar):** a reef with a history of destructive fishing (dynamite) open to free boat navigation, small-scale fishing, anchoring, and close

to the village of Seraya Besar. There is no protection or restoration in place.

- **Healthy reef (Seraya Kecil) :** a healthy reef, open to tourist activities (snorkelling, diving), but not protected or restored. Close to a hotel zone.

A video transect methodology adapted from that proposed by Reef Check (2011) has enabled us to understand the state of the restored reef at Hatamin in 2023, compared with the control reefs (for more details on the methodology, please contact us).





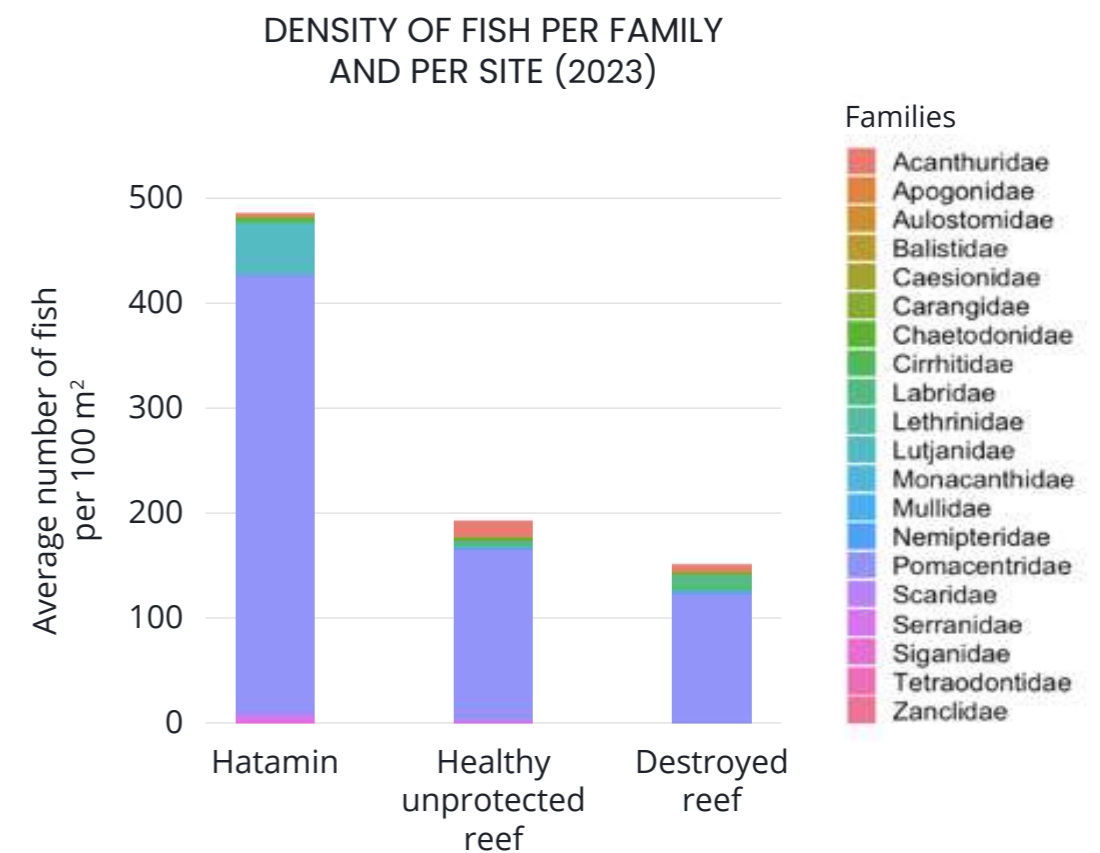
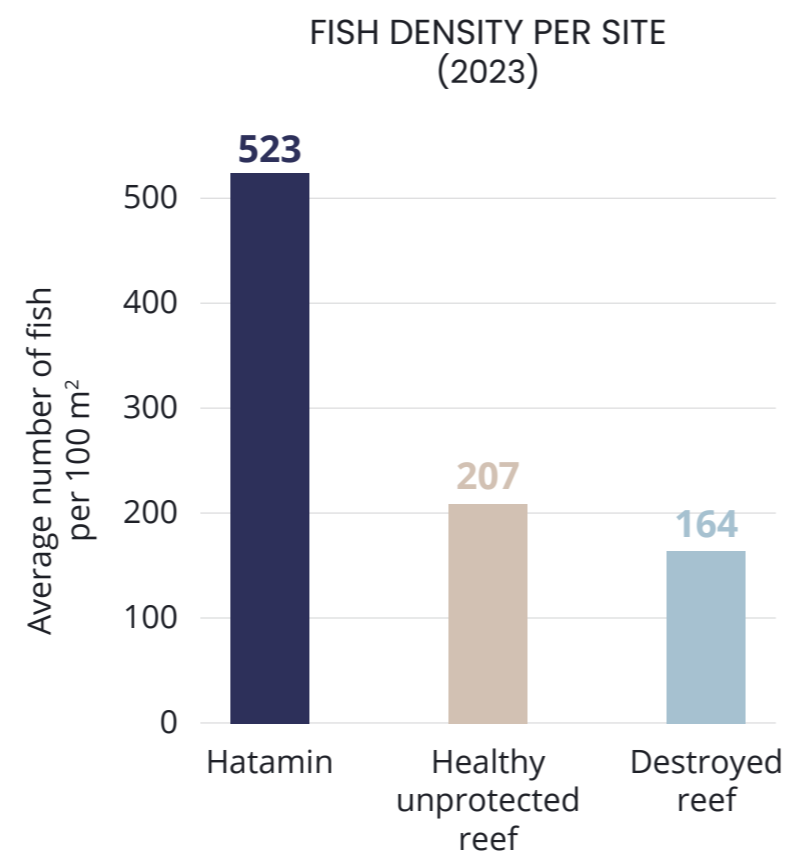
Data analysis showed that in 2023 the density of fish in Hatamin was much greater compared to the control reefs (Fig 1a): 3 times more fish per 100 m<sup>2</sup> on average in Hatamin (523 individuals), compared to the reef destroyed (164 individuals). The unprotected healthy reef has a lower density of fish (207 individuals) compared to our restored reef. In terms of the identity of the fish present, the damselfish family (*Pomacentridae*), sedentary fish strongly associated with coral areas, was the most densely found in Hatamin. The presence of small fish in Hatamin demonstrates the habitat availability within the restored reef.

These observations correspond to results found on restored reefs in Thailand by Hein et al (2020), where the abundance of small fish was greater within restored reefs, compared to reefs without restoration.

Individuals of species caught by local communities were found only at Hatamin (*Lutjanus spp*, *Lutjanidae* : *Epinephelus spp.*, *Serranidae*) (Fig 1b), and not on control reefs, suggesting that the restored reef may act as a refuge area for marine species facing fisheries and other human activities.

**Figure 1a.**  
Comparison of average fish density (number of individuals per 100 m<sup>2</sup>).

**Figure 1b.**  
Comparison of the average density of fish per family in 2023 at 3 sites (East Nusa Tenggara, Indonesia): Hatamin (restored reef), the healthy reef without protection and the destroyed reef.



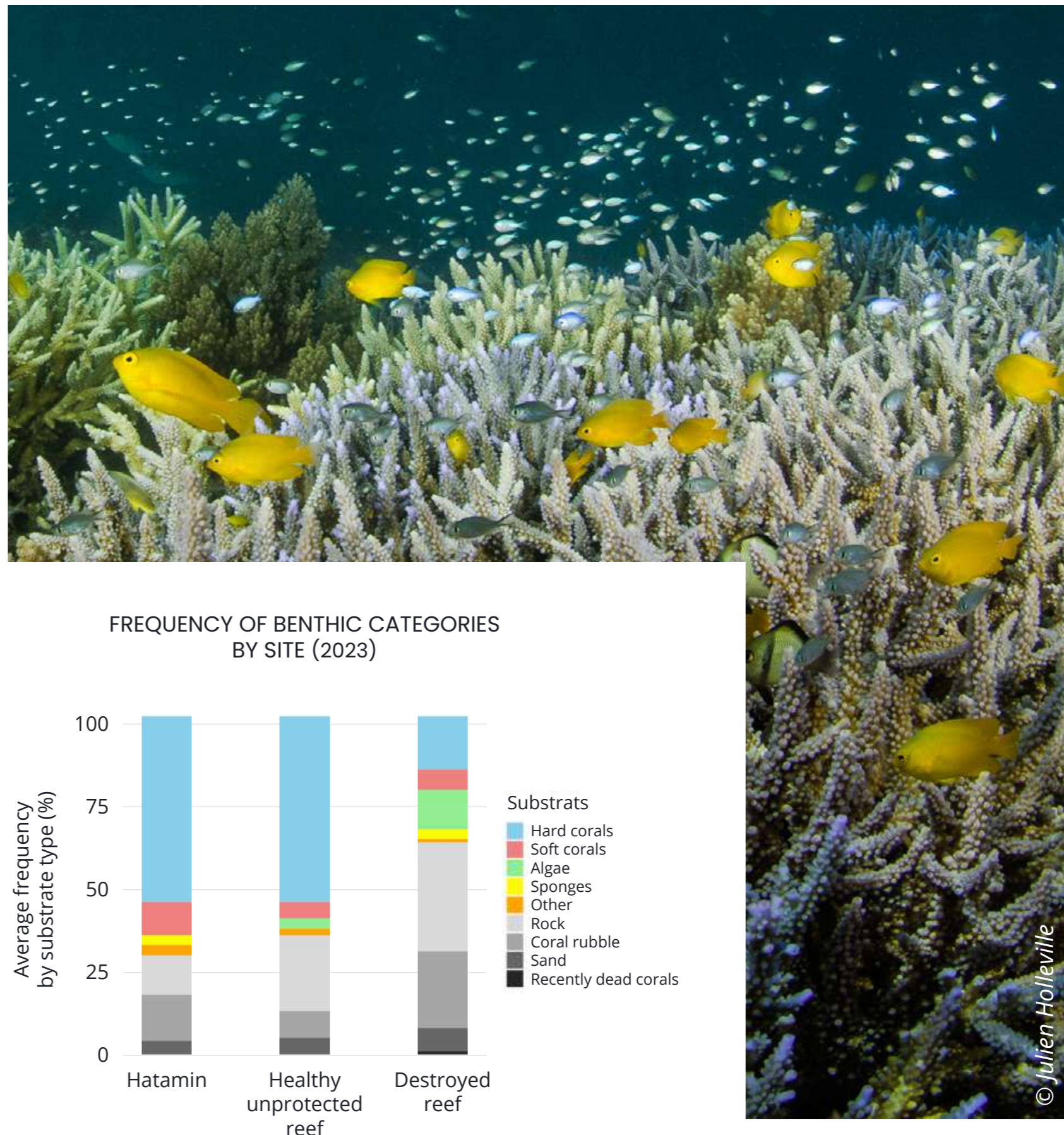
Compared to the seabed, the average cover of hard corals was equal between the restored reef and the healthy reef (56% of the substrate), indicating a good condition of the reef compared to the Southeast Asian region (average of 36.8% according to the 2021 global report on the state of coral reefs, Souter et al 2021). This value was significantly higher compared to the destroyed reef (15% of the substrate) (Fig 2).

The presence of algae on the healthy reef (2.5% of the substrate) and on the destroyed reef (11% of the substrate) is probably associated with nearby human habitation in both areas, as well as runoff from the land. Hatamin Island is inhabited only by the local WES team in order to continue activities to protect the area, thus potentially limiting the supply of nutrients to marine waters and the development of algae.

Concerning the dead substrate, the coral rubble present in Hatamin (13%) and on the destroyed reef (23%), is more important than on the healthy reef (8%). They provide evidence of the mechanical destruction of dynamite fishing in the area in the past, similar to other areas in Indonesia (Fox *et al*, 2000).

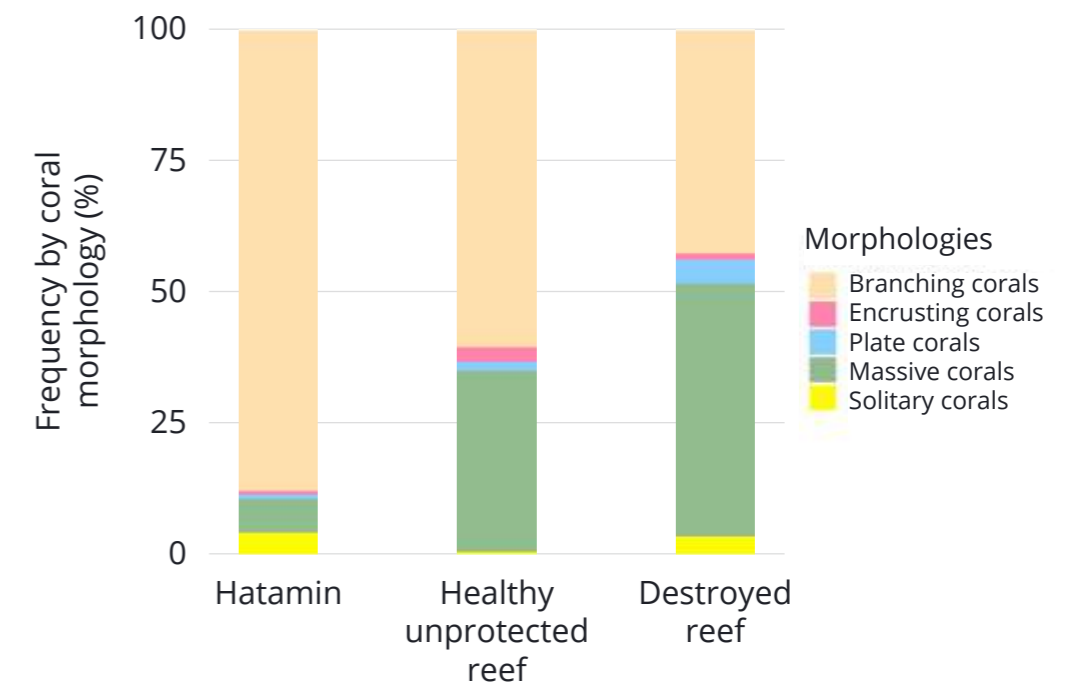
**Figure 2.**

Comparison of the composition of the seabed in 2023 at 3 sites (East Nusa Tenggara, Indonesia) by average frequency and by type of substrate: Hatamin (restored reef), the healthy reef without protection and the destroyed reef. N= 100 points per site.





DISTRIBUTION OF CORAL COVER BY MORPHOLOGY BY SITE (2023)



**Figure 3.** Comparison of frequency by coral morphology in 2023 on 3 sites (East Nusa Tenggara, Indonesia): Hatamin (restored reef), the healthy reef without protection and the destroyed reef. (N Hatamin: 56 points; N healthy reef: 56 points; N destroyed reef: 15 points).

A description of the types of corals present per site was also carried out, in terms of morphologies and genera present (results not displayed here).

On the restored reef, a dominance of branching corals was recorded (88% of the coral cover), significantly greater than in the control reefs (healthy reef: 60%, destroyed reef: 43%).

On the other hand, massive corals were significantly more frequent on control reefs compared to Hatamin (Hatamin 7%, destroyed reef 48%, healthy reef 35%, Fig 3).

This can be explained by the restoration techniques implemented in Hatamin, where branching corals, such as *Acropora spp.*, *Porites spp.*, and *Seriatopora spp.*, were widely used for cuttings and repopulation.

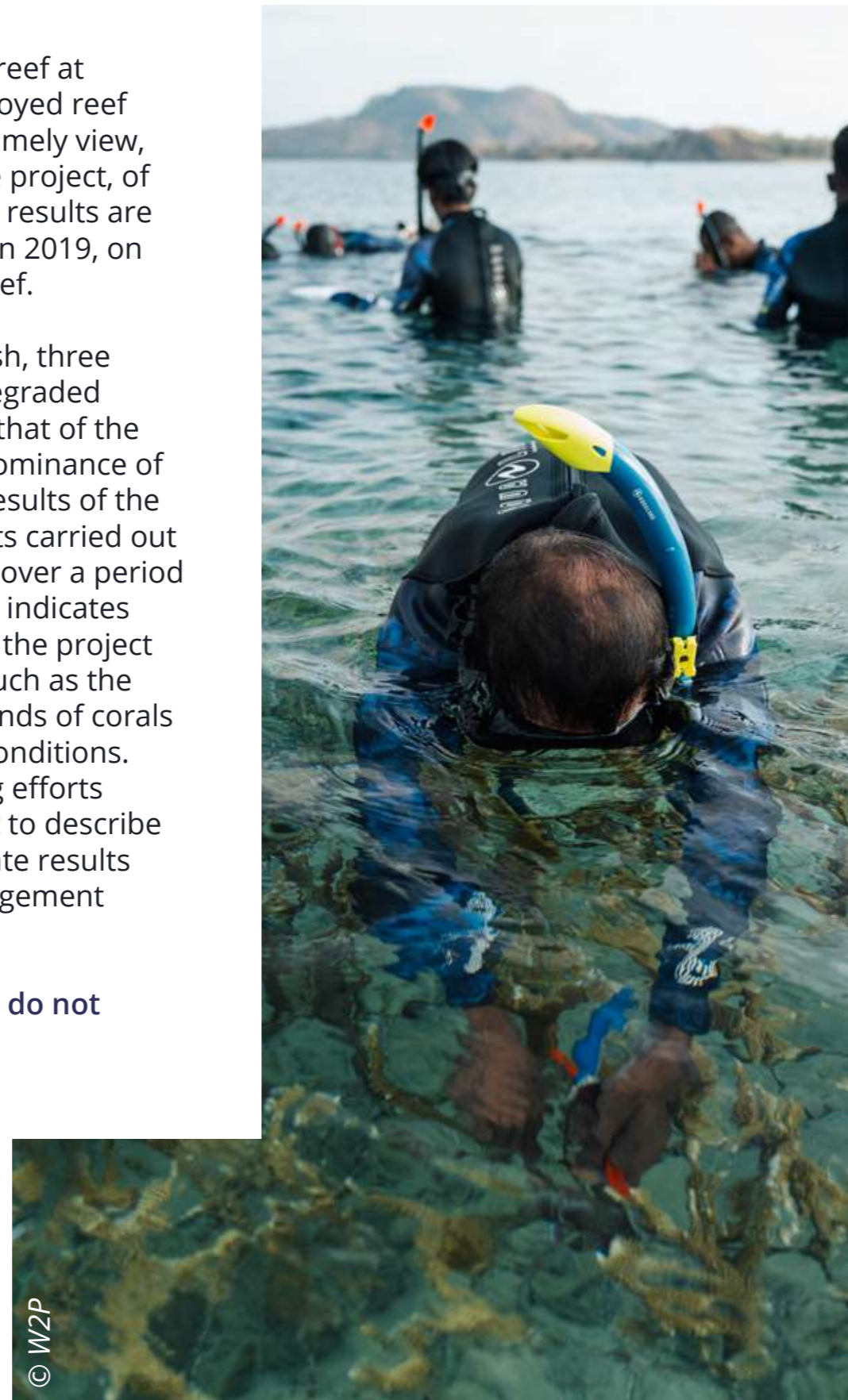
This preference is explained by the abundance of suitable fragments available at the start of the project, their rapid growth, as well as their ability to provide habitat for small reef fishes between their branches. Massive corals, for their part, may be more resistant to stresses such as heat or pollution (Loya *et al.* 2001; van Woesik *et al.* 2011). Since control reefs are likely to be more exposed to boat traffic, runoff, tourism and fishing, it is likely that this type of coral is better adapted to these conditions than branching corals.

The dominance of *Acropora spp.* in Hatamin limits genetic diversity. In 2024, efforts to diversify coral genera used for restoration are planned to increase the resilience of the restored reef.

This description of the restored reef at Hatamin, compared to the destroyed reef and the healthy reef, gave us a timely view, seven years after the start of the project, of the biological community. These results are complementary to those found in 2019, on the evolution over time of the reef.

In Hatamin, the abundance of fish, three times greater than that of the degraded reef, a coral cover equivalent to that of the healthy reef, as well as the predominance of branching corals, testify to the results of the restoration and protection efforts carried out by the communities on the area over a period of seven years. The analysis also indicates avenues for the development of the project from a technical point of view, such as the importance of diversifying the kinds of corals used, taking into account local conditions. Continuing biological monitoring efforts over time is an important aspect to describe the state of the reef, communicate results to stakeholders and guide management decisions.

**For more details on the results, do not hesitate to contact us!**



#### ***Bibliography cited:***

- Facon, M., Pinault, M., Obura, D., Pioch, S., Pothin, K., Bigot, L., Garnier, R., Quod, J.P. (2016) A comparative study of the accuracy and effectiveness of Line and Point Intercept Transect methods for coral reef monitoring in the southwestern Indian Ocean islands. *Ecological Indicators*, 2016, 60, <https://doi.org/10.1016/j.ecolind.2015.09.005>
- Fox, H., Pet, J., Dahuri, R., Caldwell, R. (2000). Coral reef restoration after blast fishing in Indonesia. 2. 23-27.
- Hein, M.Y., Beeden, R., Birtles, R.A., Chase, T.J., Couture, F., Haskin, E., Marshall, N., Ripple, K., Terry, L., Willis, B.L., Willis, R. and Gardiner, N.M. (2020), Effects of coral restoration on fish communities: snapshots of long-term, multiregional responses and implications for practice. *Restor Ecol*, 28: 1158-1171. <https://doi.org/10.1111/rec.13177>
- Loya, Y., Sakai, K., Yamazato, K., Nakano, Y., Sambali, H., Van Woesik, R. (2001). Coral bleaching: The winners and the losers. *Ecology Letters*. 4. 122-131. [10.1046/j.1461-0248.2001.00203.x](https://doi.org/10.1046/j.1461-0248.2001.00203.x).
- Reef Check (2011) MANUEL D'ÉTUDE REEF CHECK Le guide des suivis Reef Check des récifs coralliens. Traduction du manuel d'étude officiel (édition 2006) des procédures de réalisation du suivi Reef Check. Ressource en ligne : [https://www.reefcheck.fr/wp-content/pdf/2011\\_manuelReef-Check2006\\_version%20Francaise.pdf](https://www.reefcheck.fr/wp-content/pdf/2011_manuelReef-Check2006_version%20Francaise.pdf)
- Souter, D., Planes, S., Wicquart, J., Logan, M., Obura, D., Staub, F. (eds) (2021). Status of coral reefs of the world: 2020 report. Global Coral Reef Monitoring Network (GCRMN) and International Coral Reef Initiative (ICRI). DOI: 10.59387/WOTJ9184
- Van Woesik, R., Sakai, K., Ganase A., Loya, Y. (2011) Revisiting the winners and the losers a decade after coral bleaching. *Mar Ecol Prog Ser* 434:67-76

## SCIENCE

# IN SPAIN

### Coral survival

Monitoring the survival and growth of restored corals in Spain is part of the routine of the local Coral Soul team. These surveys provide important information regarding the effectiveness of our restoration methods, as well as the biology of the coral species *Dendrophyllia ramea*. Information is recorded on restoration areas, counting the number of detached or dead corals as losses.

In 2023, we are delighted to have had a coral survival rate of 90% over the space of 2 years! This demonstrates the effectiveness of the nursery care and repopulation method on the natural substrate.

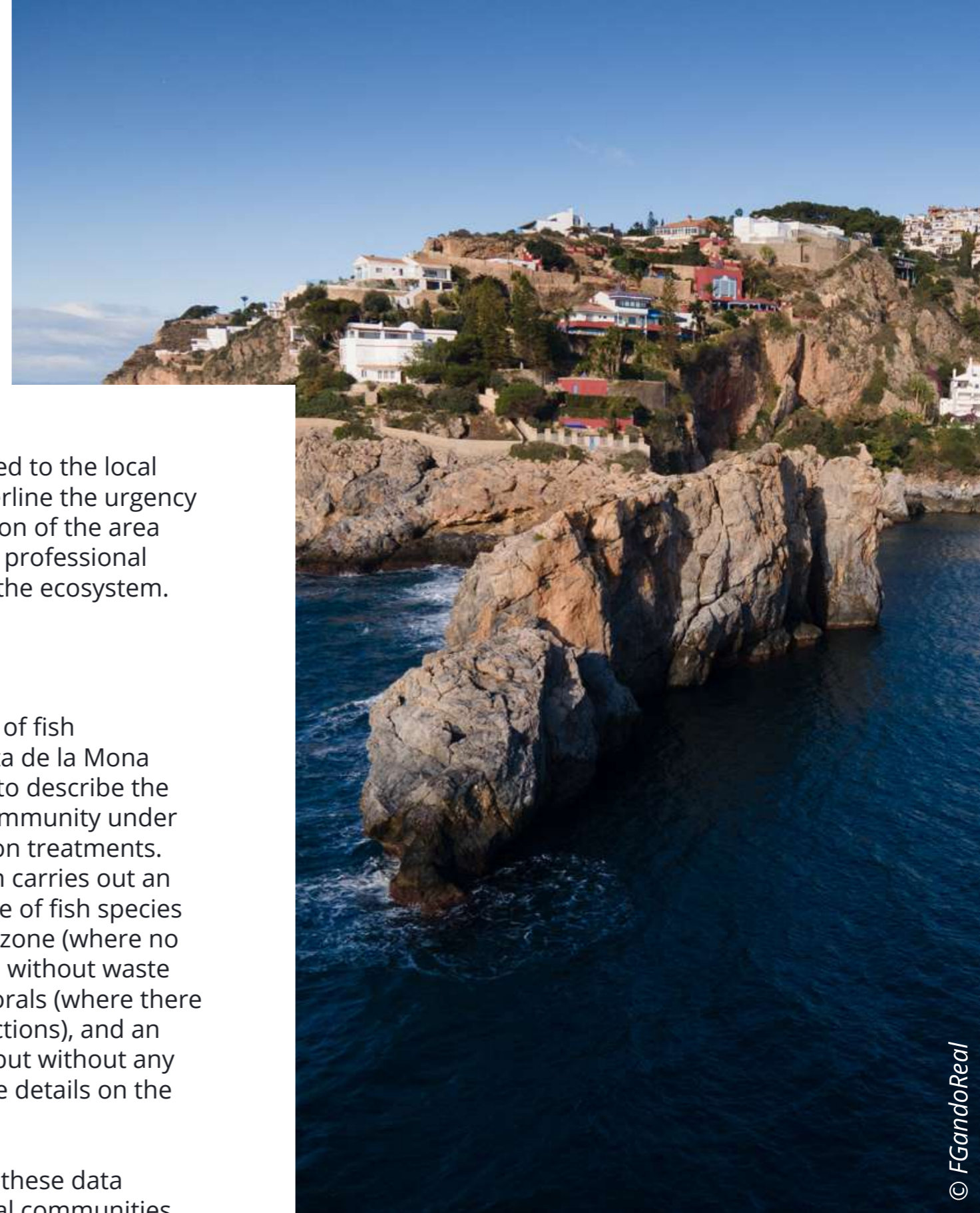
The 10% loss can be attributed to various factors. On the one hand, a small part of the corals repopulated in shallow areas at the start of the project are more exposed to thermal stress, as well as to the visit of recreational divers who can cause damage and detach the corals with their fins. Also, the sporadic presence of fishing lines in the area can get tangled around the corals and detach them.

These results will be presented to the local government in order to underline the urgency of strengthening the protection of the area and limiting recreational and professional fishing to reduce damage to the ecosystem.

### The fish community

In 2023 we completed a year of fish monitoring in 3 areas in Punta de la Mona with the local team, in order to describe the evolution of the biological community under different ecological restoration treatments. Once a month, the local team carries out an observation of the abundance of fish species present in a polluted control zone (where no action is carried out), an area without waste and with a repopulation of corals (where there are carried out restoration actions), and an area cleaned of all pollution but without any repopulation action (for more details on the methodology, contact us).

The results of the analysis of these data show a difference in biological communities between areas. We observed a three times higher fish density in the restored areas



© FGandoReal



**Figure 4.**  
Composition of the fish community in 3 areas of Punta de la Mona with different restoration treatments: cleaned area, cleaned area with coral repopulation and polluted control area.

compared to the control area (Fig 4; no. fish) in waste-free and repopulated zone: 607 individuals on average; no. fish in zone without repopulating: 599 individuals on average; no. fish in the control zone: 212 individuals on average). These results suggest a correlation between coral restoration efforts and the provision of good habitat for marine species.

In terms of identity of the fish present, the dominant species on all sites is the barber (*Anthias anthias*), a small sedentary carnivore, associated with coral cover (MNHN & OFB, 2024). Its presence is important in all sites, but the abundance is greater in cleaned areas and with coral

transplantation, probably due to the shelter available between the branches of candlestick corals.

The presence of sea bream (*Diplodus spp.*), carnivores of interest to local fisheries, in the cleaned and restored area was also recorded, suggesting a habitat for the target species of the fisheries. Protecting habitats for these species can contribute to neighboring fisheries through a spillover effect.

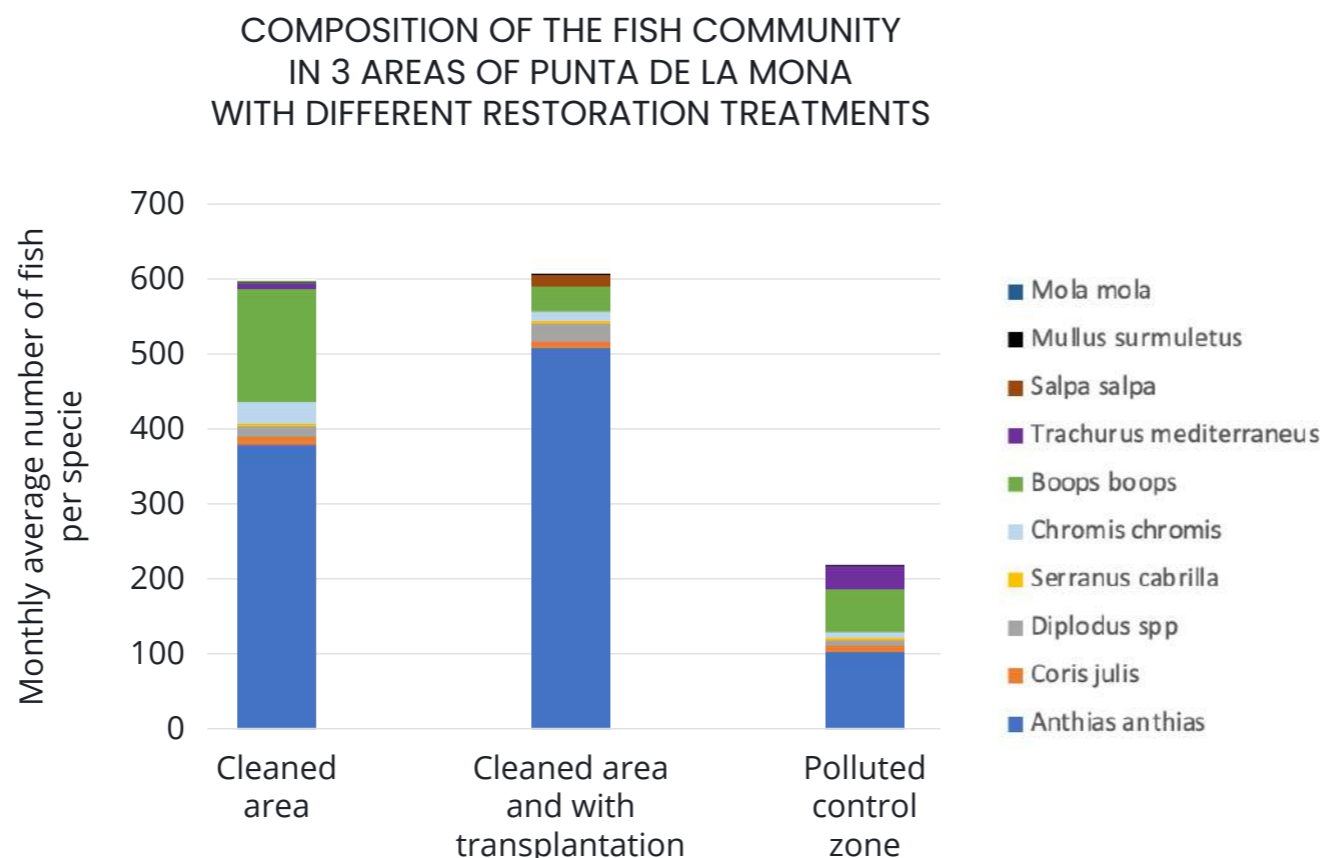
Finally, the data showed the presence of groupers (*Epinephelus marginatus*) and moles (*Mola mola*) in the restored areas, indicator species of habitat quality, being large carnivores for the first and planktivores for the second (Froissart *et al.*, 2022).

Despite the similarity in number of species between sites, the differences in fish abundance and presence of keystone species between sites, demonstrated by these results, reveal a more abundant and diverse fish community on the restored areas, compared to areas that still had pollution choking the seabed.

#### **Bibliography cited:**

Froissart P., Pean M., Andre F. (2022) *Mola mola* (Linnaeus, 1758), DORIS <https://doris.ffessm.fr/ref/specie/344>

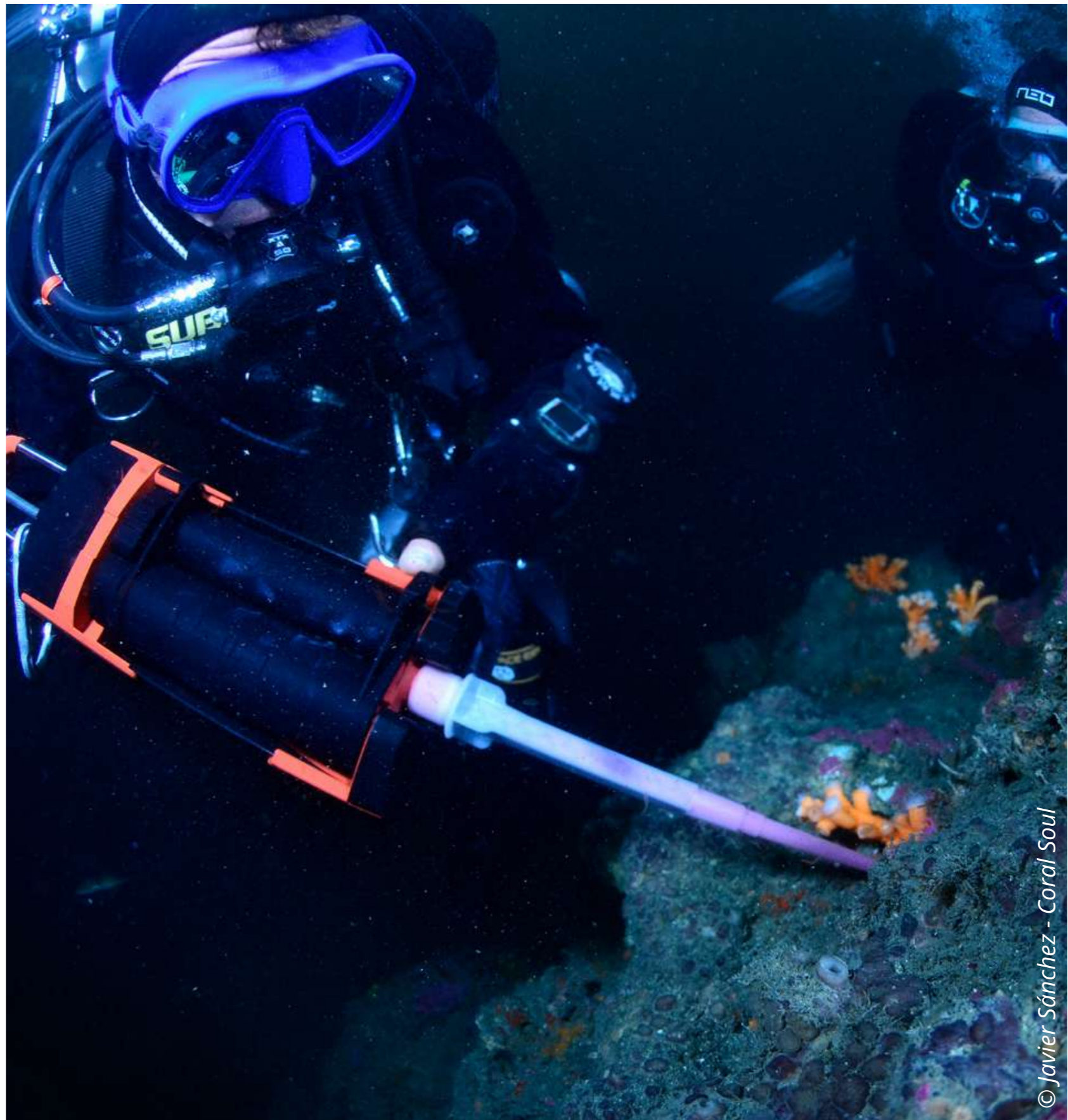
MNHN & OFB [Ed]. 2003-2024. Fiche de *Anthias anthias* (Linnaeus, 1758). Inventaire national du patrimoine naturel (INPN). Site web : [https://inpn.mnhn.fr/espece/cd\\_nom/69280](https://inpn.mnhn.fr/espece/cd_nom/69280) - Le 11 mars 2024



## Testing with new restoration methods

We work hand in hand with the Coral Soul team to evolve coral restoration methods adapted to the Mediterranean context. Following this approach, in 2023 we entered into a partnership with the Hilti company to test transplantation with a resin and an application gun, offered by the company. Potential advantages include the rapid application of the resin and the low preparation time, compared to conventional resin.

We were particularly interested in testing the toxicity of the resin towards corals as well as the effectiveness of the anchoring. The forecast results one year after the first tests indicate that the corals do not show mortality or loss of living tissue in contact with the resin. Also, anchoring coral colonies to the substrate was effective, with an average of 99% of colonies repopulated with the resin which did not show signs of detachment or mortality (average of 4 months after transplantation). Long-term observations are still necessary to confirm the effectiveness of the method.



# EVENTS

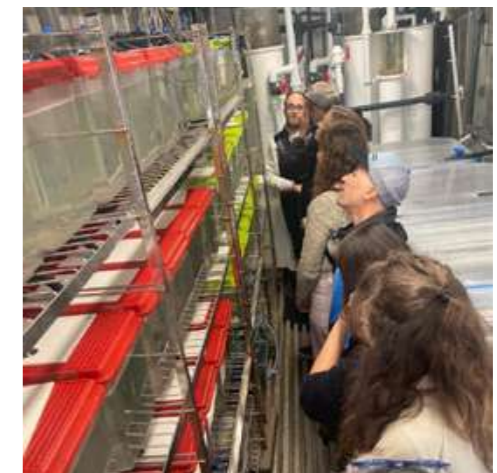
In 2023, we had the chance to participate in several events.

Among them, part of the team was able to host a round table during **Monaco Ocean Week** in March on the theme of global marine conservation through the protection of ecosystems and the empowerment of local communities.

The entire France team participated in an **Ocean Fresco** and a **Climate Fresco workshop**, an opportunity to enrich their knowledge.

We were also able to meet several of our partners, including **Aqualung**. But also **H2O At Home** during a presentation to their advisors and members of the company.

Finally, we were lucky enough to be selected to participate in the **Rencontres pour la Planète**, an event organized by the collective 1% Pour la Planète. This allowed us to meet the committed member companies of the network and present them with a project in which to get involved.





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# PARTNERS

– THEY SUPPORTED US

Like any organisation, Coral Guardian does not grow alone.

# A BIG THANK YOU

to our ecosystem of financial, operational and institutional partners. Your continued commitment and trust encourage us to continue developing our projects.

Committed professionals, scientific experts, IT, scientific or creative volunteers, entrepreneurs and artists. Your support gives us the energy we need to take our vision as far as possible. We thank you warmly.



albertine



J E M



# PRESS AND MEDIA



## Mr Mondialisation

Article "50% du corail a disparu : la science l'avait prédit en 1998", mars 2023.



## SEAtizens

Article « Adoptez un corail pour restaurer la biodiversité marine ! », mars 2023.



## Regreener

Coral transplants in Spain.



## France télévision

TV SHOW "Les Supers Pouvoirs de l'Océan", November 2023.

FIND ALL PUBLICATIONS ON  
OUR ACTIONS IN 2023 AT

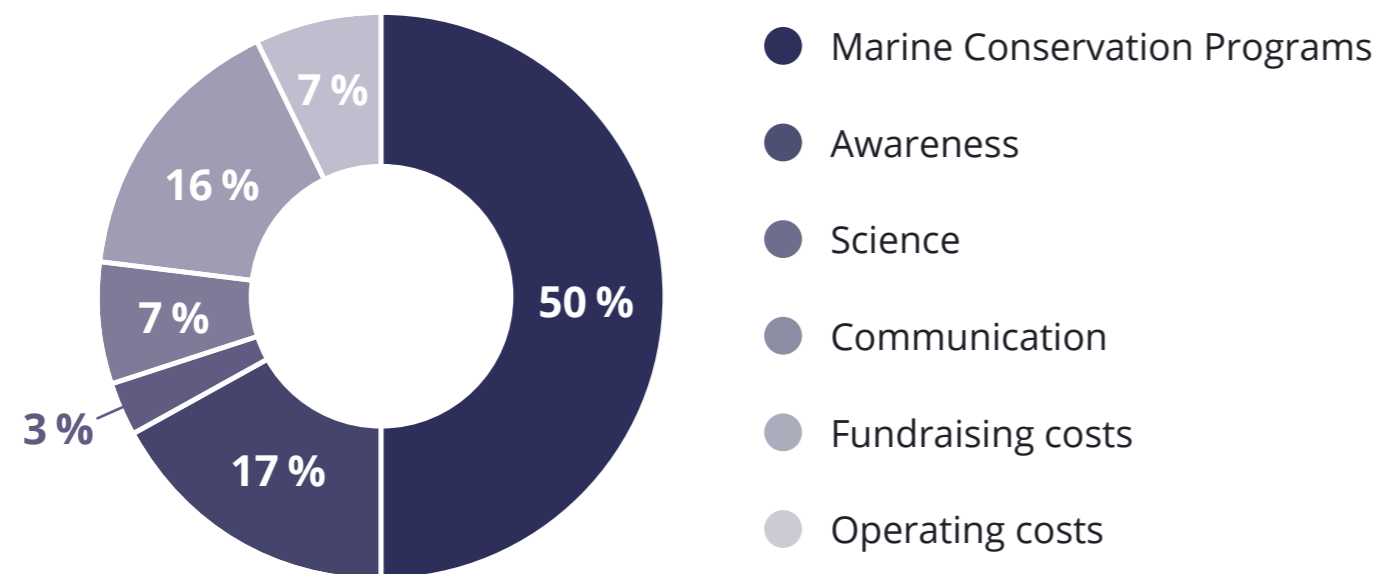
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EN/PRESS-ROOM](http://WWW.CORALGUARDIAN.ORG/EN/PRESS-ROOM)**



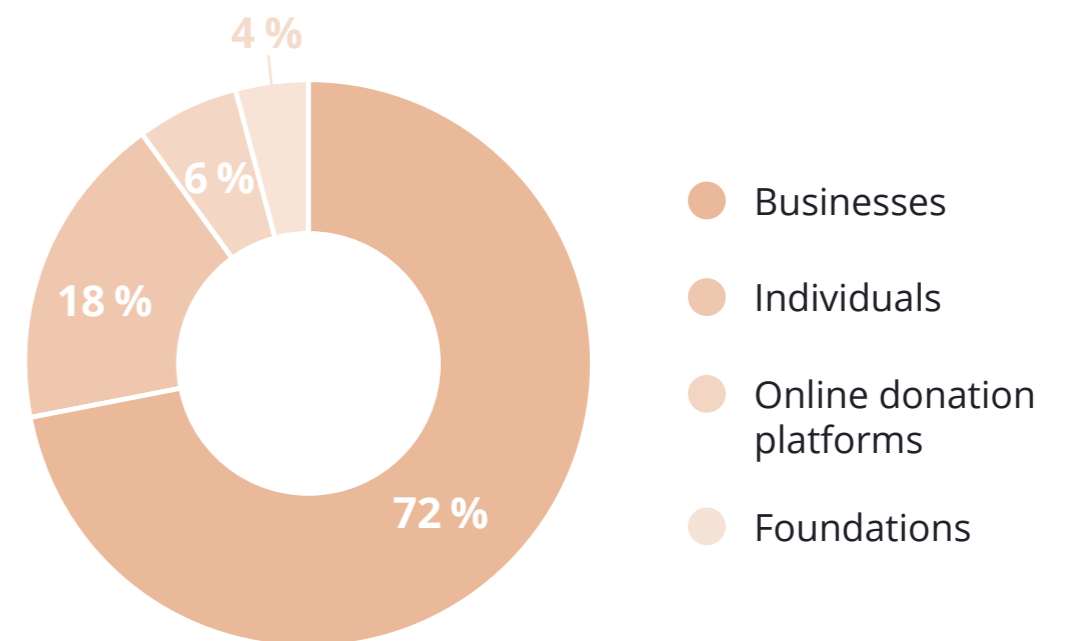
# FINANCIAL STATEMENT

## - FISCAL RESPONSIBILITY

DISTRIBUTION OF COSTS



ORIGINS OF DONATIONS



## FINANCIAL PRODUCTS

	2023	2022
Other interests and similar products	-	-
<b>TOTAL FINANCIAL INCOME (A)</b>	-	-

## FINANCIAL EXPENSES

	2023	2022
Negative exchange rate differences	-	-
<b>TOTAL FINANCIAL EXPENSE (B)</b>	-	-
<b>FINANCIAL RESULT (A) - (B)</b>	-	-

## OPERATING INCOME

	2023	2022
Resources from public generosity	606,444.00	440,309.00
Other income	-	244.00
<b>TOTAL OPERATING INCOME (C)</b>	<b>606,444.00</b>	<b>440,553.00</b>

## OPERATING CHARGES

	2023	2022
Other purchases and external charges	208,745.00	172,748.00
Taxes, levies and similar payments	-	645.00
Wages, salaries and social security charges	172,683.00	197,922.00
Dedicated fund carryovers	99,719.00	-
Depreciation on fixed assets - depreciation charges	1,468.00	1,583.00
<b>TOTAL OPERATING EXPENSES (D)</b>	<b>482,615.00</b>	<b>372,898.00</b>

<b>OPERATING RESULT (C) - (D)</b>	<b>123,829.00</b>	<b>67,655.00</b>
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ALL THESE ACTIONS  
WOULD NOT HAVE SEEN THE  
DAY WITHOUT OUR TEAMS

IN FRANCE, INDONESIA AND SPAIN

# FRANCE

employees ○ and volunteers ○



**COCO TAMLYN**  
DIRECTOR



**FLORINA JACOB**  
FIELD AND SCIENTIFIC  
PROJECT MANAGER



**NEYDA RADOUANE**  
PARTNERSHIPS  
MANAGER



**OCÉANE CONJARD**  
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**DR. OLIVIER DETOURNAY**  
PRESIDENT



**CAROLINE BOURGEOIS**  
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**JULIEN HOLLEVILLE**  
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BOARD MEMBER



**BRUNO BRETON**  
MEMBER OF THE BOARD  
OF DIRECTORS



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DR. AQUATIC ECOLOGIST,  
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**VLADIMIR OSPINA**  
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ILLUSTRATOR



**ANNE-SOPHIE MOURAUD**  
SUPPORT IN  
COMMUNICATIONS



**LAURIE-ANNE DELANNOY**  
TRANSLATOR



**YANN FARINES**  
IT EXPERT



**LAURA BASTIDE**  
MEDIATION AND  
SCIENTIFIC COM



**JULIEN BROCHARD**  
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**VINCENT DIRINGER**  
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ANALYST



**AURÉLIE LELONG-BRULLE**  
MEDIATION AND  
SCIENTIFIC COM



**MAXIME BERAUD**  
BIOLOGICAL DATA  
ANALYST

# INDONESIA

employees



**JONASH CASTILO  
MURDINI**  
LOCAL MANAGER



**SUHARDIN RONI**  
CAPTAIN



**ABDULLAH WEO**  
CORAL GUARDIAN



**MURDIANTO**  
CORAL GUARDIAN



**ABDUR RAHMAN  
MALWELAN**  
CORAL GUARDIAN



**SAHRIL**  
CORAL GUARDIAN



**IMMACULADA HANE**  
ENGLISH TEACHER



**VALENTINA LIMEK  
TUKAN**  
ECOTOURISM MANAGER

# SPAIN

employees ○ and volunteers ○



**MARINA PALACIOS  
MIÑAMBRES**

DIRECTOR OF THE DEEP  
CORE PROJECT AND THE  
CORAL SOUL NONPROFIT



**ZAIDA PARRA**  
PROJECT  
COORDINATOR



**NACHO MARTÍN**  
PRESIDENT OF  
THE CORAL SOUL  
NONPROFIT



**RAFAEL CAMACHO**  
SECRETARY OF THE  
NONPROFIT, TECHNICAL  
DIVER, VOLUNTEER  
PHOTOGRAPHER AND  
VIDEOGRAPHER, CEO  
BUCEONATURA



**SALVADOR BLANCO**  
VOLUNTEER TECHNICAL  
DIVER, CORAL  
TRANSPLANTER,  
BUCEONATURA MEMBER



**JAVIER SANCHEZ**  
VOLUNTEER UNDERWATER  
PHOTOGRAPHER,  
PDF DIFFERENT SCUBA  
SCHOOL



**JOSÉ MACÍAS**  
DIGITAL  
COORDINATOR

“

With Coral Guardian,  
we form an exceptional  
team! This experience  
not only allowed us  
to achieve our goals,  
but also gave us the  
opportunity to grow  
and strengthen as a  
partnership in an authentic  
and organic way. Together,  
we demonstrate the power  
of collaboration and the  
passion to protect our  
oceans!

– Zaida Parra



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