



# MER

## Newsletter

February 2026

## 2. EDITOR |

# The Editor Column

It is a real pleasure and an honor for me to contribute to this issue of the MER Newsletter.

For more than thirty years, I have had the privilege of accompanying generations of students driven by a deep love for the oceans within the Master's program in Oceanography at my university. More than ten years ago, MER students joined ULiège, bringing with them an inspiring wave of novelty and challenges: courses taught in English, a rich diversity of academic backgrounds, origins, and cultures, along with clothing styles, jewelry, and food traditions from all over the world. A truly vibrant and colorful human mosaic. And of course, you also had to make friends with Belgium, its sometimes harsh and humid climate, and its unavoidable traditions: french fries and beer.

Spending a week with you at STARESO, immersed in this wonderful diversity, made one thing very clear to me: beyond all our differences, respect, curiosity, laughter, passion, and kindness are universal values that you all share.

Every year, I welcome new students with excitement, and every year I say goodbye to graduates with great pride, mixed with a small ache in my heart. I am always deeply moved when I meet one of you again at a conference or in the corridors of a Belgian or international university, greeted by a cheerful "Hi Professor". And it is especially rewarding when some of you have the opportunity to continue the adventure at ULiège for four more years by starting a PhD.

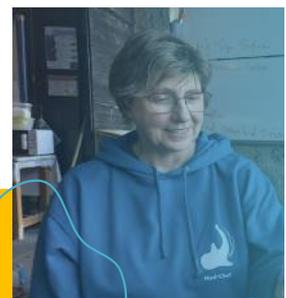
Dear students-past, present, recent graduates, and future oceanographers-please continue to be the amazing, passionate, and caring people that you are, toward yourselves, toward others, and toward the sea. The world truly needs you, now more than ever.

I also want to warmly acknowledge the incredible team behind this program: the professors, assistants, administrative and technical staff at ULiège, at the Universidad del País Vasco / Euskal Herriko Unibertsitatea, the Universidade dos Açores, the University of Bordeaux, at the University of Southampton and at STARESO. A big family, united by shared values, by the joy of working together, of learning from one another, of innovating for you-our students-and, of course, by celebrating the human and scientific collaborations that make the MER program so special.

**It is therefore with great warmth that I wish you an enjoyable read, a beautiful year ahead, and my very best wishes for the coming year.**

**Sylvie Gobert**  
**Professor at**  
**the University of Liège**

Liège, 27th January, 2026



### 3. SUMMARY

## Index

### 4. News about the master and agenda

MER QR for WhatsApp <a href="#">Belén González-Gaya</a> .....	4
Inter-University Exchange Project Europe-Japan MEXT program <a href="#">Harkaitz Eguiraun Martinez</a> .....	5
Insights from EMODnet and Digital Ocean Forum 2025 <a href="#">Lilly Butcher</a> .....	6
Announcement MER OPEN CALL <a href="#">Ionan Marigomez</a> .....	7
MER summit <a href="#">Ionan Marigomez</a> .....	8-9

### 5. Marine Stories

A look into Greenland's plastic count: tiny plastics, big journey (from master student) <a href="#">Svetlana D'Costa</a> .....	10-12
Why sediments matter? (from a PhD student) <a href="#">Prabodha Lakrani</a> .....	13-16
Vegetarian lifestyle of corals explains why reefs thrive in nutrient-poor water (from a researcher) <a href="#">Cecilia D'Angelo &amp; Jörg Wiedenmann</a> .....	17-19

### 6. Interviews

<a href="#">Marta Pascual</a> .....	20-21
-------------------------------------	-------

### 7. Press release and opinion letters

Dramatic Goodbyes and Unexpected Hellos: A MER Community Story <a href="#">Lilly Butcher</a> .....	22-23
A Path Set by a Master's Thesis: Diving Into Coral Research in the Mediterranean <a href="#">Nagore Quintano</a> .....	24-26

### 8. Where am I now?

<a href="#">Paula Fragueiro Sabaini</a> .....	27
---	----

## MER QR for WhatsApp

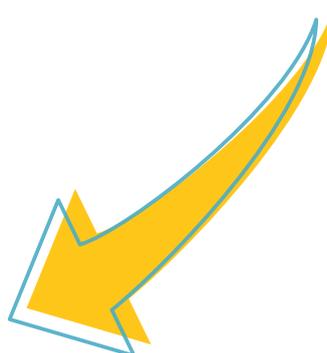
Willing you get your MER alumni community directly in your phone?

### Jump into the MER-WhatsApp group!

No teachers or supervisors there, promised, just a safe space to share memories, ideas and plans with your peers.



Join and find out!



## Inter-University Exchange Project Europe-Japan MEXT program

March, February, August 2025, Hiroshima University

PiE-UPV/EHU is deeply involved in the development of the **Inter-University Exchange Project Europe-Japan MEXT** program and several students from the MER master program and academic staff attended the activities organized therein.



Assoc. Prof. Dr. Harkaitz Eguiraun participated as an academic representative of the PiE-UPV/EHU in the kick-off meeting of the program **“Training program for Next Generation Leaders in AI in Maritime Economic Security and Sustainability”** funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan and hosted by the Hiroshima University in Hiroshima Japan from 10th – 11th of March 2025. Additionally, he attended as a guest lecturer the summer course entitled **“AI Applications in Maritime and Ocean Studies”** hosted by the Hiroshima University in Hiroshima Japan from 20th – 26th of August 2025.

Regarding students participation, in a first phase, **8 students** successfully accomplished the online seminar entitled **“Ocean and maritime governance and scientific innovation for the safe and secure oceans”** organized by the Hiroshima University on the 27th of February 2025. In a second phase, **2 students**, Ms. Skye Schmidt and Mr. Menuka Bhatiya, successfully attended the summer course where Dr. Eguiraun was lecturing, in August 2025. During the summer course, among other activities, students and academic staff visited the Kure City Town Hall and were received by the mayor of the city Mr. Yoshiake Shinhara.



## Insights from EMODnet and Digital Ocean Forum 2025

In late November 2025, Brussels hosted two important events: the EMODnet Open Conference 2025 (25–26 November) and the Digital Ocean Forum 2025 (27–28 November)



### EMODnet Open Conference 2025

The EMODnet conference emphasized expanding partnerships with non-traditional data providers, such as citizen science and industry, to fill data gaps in coastal, Arctic, and Mediterranean regions. The focus was on scaling data sharing, standardizing FAIR data principles, and supporting EU policies like the Marine Strategy Framework Directive (MSFD) and Maritime Spatial Planning (MSP). EMODnet's Vision 2035 aims to make Europe a global leader in marine knowledge by fostering interoperability, capacity-building, and community engagement.

### Digital Ocean Forum 2025

The Digital Ocean Forum introduced the **European Digital Twin Ocean (EDITO)**, a platform that builds on EMODnet's infrastructure to integrate AI, Copernicus satellite data, and in situ observations. EDITO enables researchers to onboard datasets, models and applications, fostering collaborative knowledge-building. By leveraging high-performance computing (HPC) and cloud technologies, EDITO allows users to run advanced simulations and “*what-if*” scenarios directly on the platform, saving time and resources. Ensuring that models and applications are scientifically validated, well-documented, and reproducible will be critical. The platform's success will depend on maintaining



### Opportunities

- **EDITO Hackathons (2026)**: A chance to develop and integrate digital tools and applications (next: April 2026).
- **€2 million in open calls (2025–2026)**: Grants to support the onboarding of new datasets, models, and applications (next: January 2026).
- **Information Session**: EDITO Call #1 for Financial Support to 3rd Parties (Applications), January 29, 2026 @ 11:00 am - 12:30 pm
- **EDITO Forum**: (launch: January 2026) to share experiences and gain visibility.
- **DIITO 2026 Community Events**: to network and showcase your project.
- **EDITO Newsletter**: for updates on calls and events.

# Announcement MER OPEN CALL

The on-line application system is open for  
2026-2028 applicants since January 21st,  
2026, at the MER

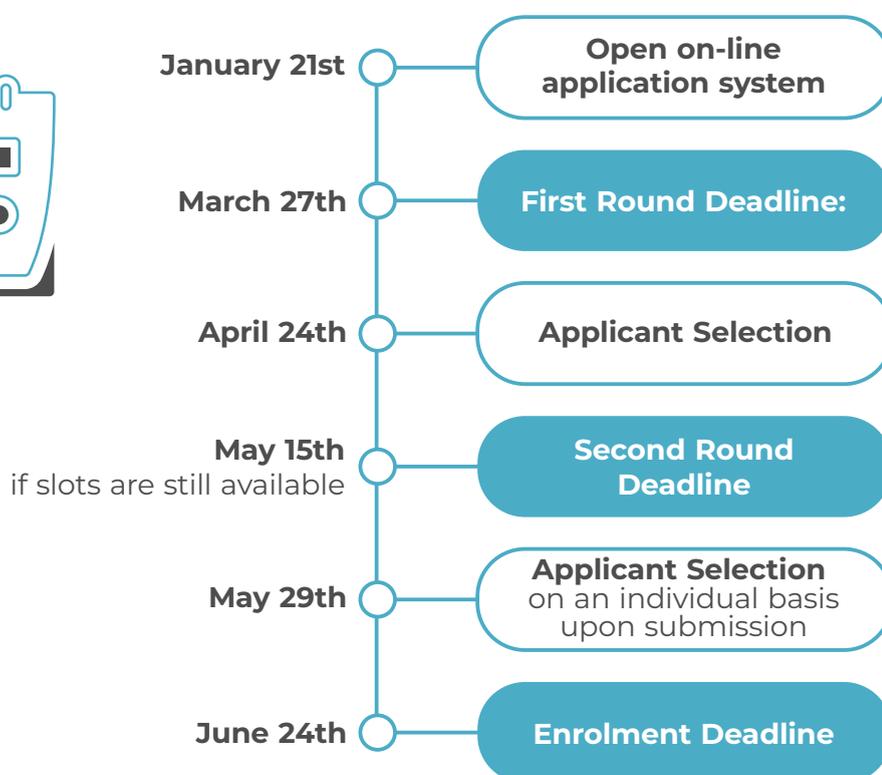
Consortium website [merconsortium.eu](http://merconsortium.eu).



**IMPORTANT NOTICE!!!! OPEN ONLY FOR SELF-FUNDED STUDENTS**

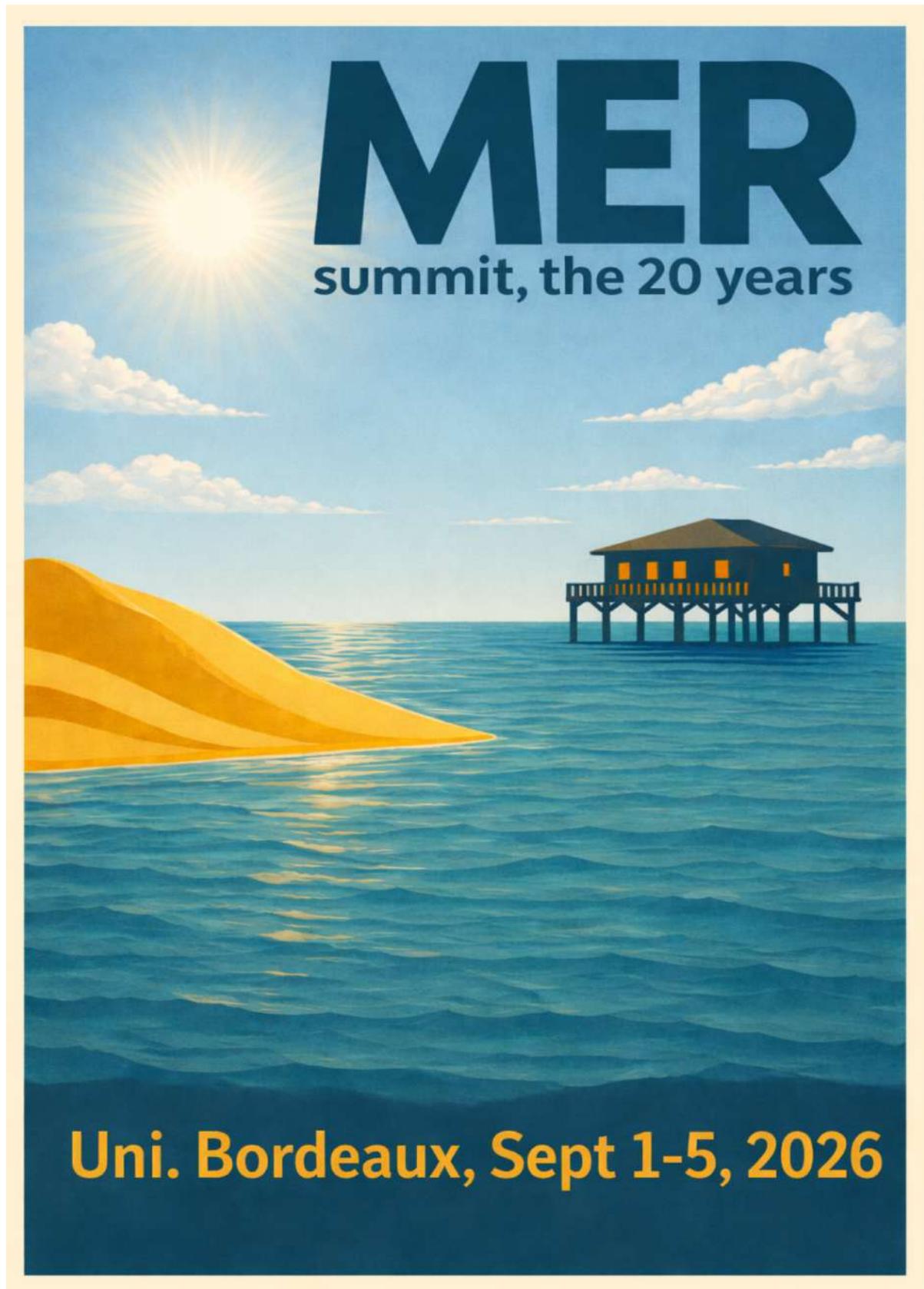
**EMJM STUDENT SCHOLARSHIPS ARE NOT AVAILABLE for this  
Call 2025 (2026-2028 Intake)**

Still, don't miss the opportunity to distribute the news around as (as you all know!) being part of the MER community is a once in a lifetime experience!!



check for full info here ([link the attached document](#)) and in the [merconsortium.eu](http://merconsortium.eu) website

## MER summit, the 20 years



## MER Summit

### Registration

#### Sessions, social activities & grants

**Register by March 30th** to the following link:  
<https://summit2026.merconsortium.eu>

If you have any questions about sessions, logistics or social activities, please contact:  
[mersummit2026@diff.u-bordeaux.fr](mailto:mersummit2026@diff.u-bordeaux.fr)

If you have any questions about registration or grants, please contact:  
[pie.mersummit@ehu.eu](mailto:pie.mersummit@ehu.eu)

#### Science or community sessions, workshops, or round table

Organise **your own session** by submitting your proposal by March 15th via the registration website.

If you have any questions please contact: [mersummit2026@diff.u-bordeaux.fr](mailto:mersummit2026@diff.u-bordeaux.fr)

### Photo competition

#### Do not forget the competition!

Submit **your best photo** by June 30th to:  
[mersummit2026@diff.u-bordeaux.fr](mailto:mersummit2026@diff.u-bordeaux.fr)

## MER Summit

### PRELIMINARY PROGRAMME

#### September 1

**19:00-21:00** - Icebreaker  
*Université de Bordeaux - Campus Victoire*

#### September 2

**9:00-12:00** - Registration  
**14:00-15:00** - Opening Session  
**15:00-18:30** - Science & community sessions  
**18:45-20:00** - Photo competition  
*Université de Bordeaux - Domaine du Haut-Carré*

#### September 3

**9:00-19:00** - Science and community sessions  
*Université de Bordeaux - Domaine du Haut-Carré*

#### September 4

**9:00-19:00** - Science and community sessions  
*Université de Bordeaux - Domaine du Haut-Carré*  
**20:00-22:00** - Summit dinner  
*Garonne River*

#### September 5

**10:00-14:00** - Workshops & Lunch  
*Darwin Ecosystème*  
**14:00-17:00** - Vineyard visit and wine tasting

# A look into Greenland's plastic count: tiny plastics, big journey

Svetlana D'Costa (MER cohort 2023-2025)

## What are we talking about?

Being durable, adaptable, and ubiquitous across every industrial and domestic sector, plastics have become defining materials of the Anthropocene. Unable to biodegrade at a meaningful rate, plastic debris now reaches even the most remote environments. Recent estimates suggest that between 62,000 and 105,000 tons of plastic enter the Arctic Ocean each year (Kanhai et al., 2018; Miettinen, 2020), raising urgent concerns about their long-term ecological consequences. Of particular concern are microplastics (MPs,  $\leq 5$  mm) and especially microfibers (MFs), which are thin, elongated filaments shed predominantly from synthetic and natural textiles via laundering, fishing gear and have become the dominant forms detected in polar environments (De Falco et al., 2022; Suaria et al., 2020). Once deposited in snow, ice, and seawater, they can enter marine food webs through plankton ingestion, bioaccumulate, and biomagnify up trophic levels (Alfaro-Núñez et al., 2021; Cole et al., 2011). Their chemical stability and fibrous morphology make them persistent and biologically interactive, capable of adsorbing heavy metals and organic pollutants (Wright et al., 2013).

## Why is it important?

Evidently, exposure to MPs and microfibers has been linked to physiological impairments, inflammation, and neurotoxicity in marine organisms, and to potential health risks in humans through seafood consumption, now estimated at 39,000–52,000 particles per person per year (Cox et al., 2019; Prata et al., 2020; Carbery et al., 2018). Given the accelerating and inevitable impacts of climate change on Arctic ice dynamics, understanding and mitigating the sources and fate of MPs is increasingly urgent.

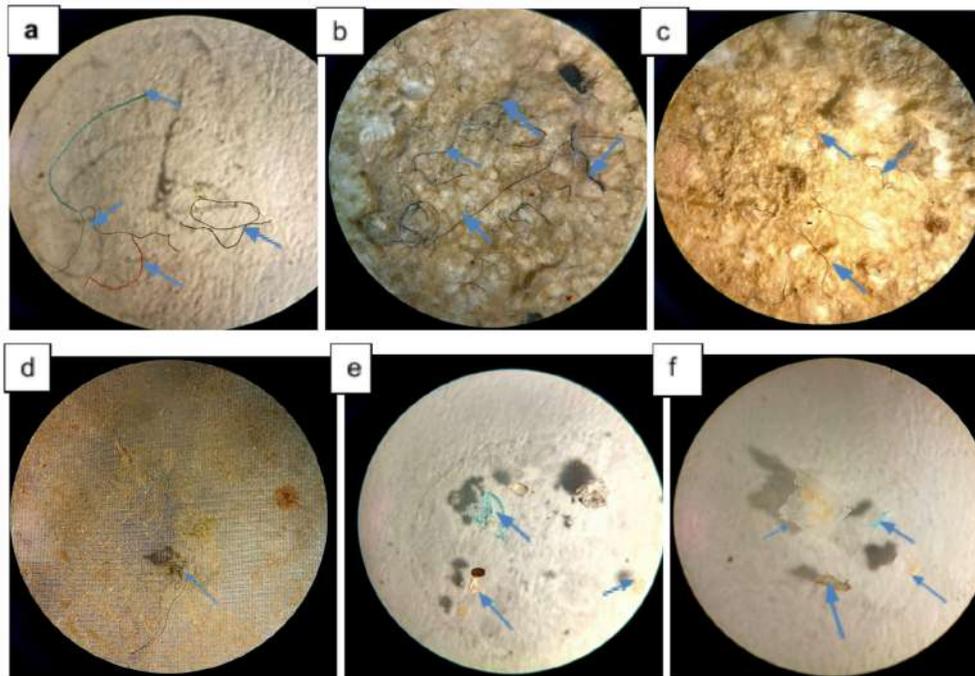
## Our perspective

The hypothesis is mainly based on each matrix, where point sources are bound to differ based on their proximity to local (wastewater effluents, tourism, fishing gear) or long-range transport (ocean currents, atmospheric deposition) of MPs in an exceptional natural and local environment of Southwest Greenland. The study plans to close this gap by means of extensive quantitative experimental analysis and comparison of MPs extracted from samples collected in different environmental compartments. These findings serve as a reference point for further monitoring programs and comparative studies across the Arctic, along with supporting environmental policy and management in Greenland.

## How did we achieve this?

Southwest Greenland hosts the country's most densely populated and ecologically active region, characterized by complex fjord geomorphology, productive marine ecosystems, and rapidly retreating glaciers. During the ATKA Expedition (2019), thirteen plankton samples were collected across 12 fjords and one oceanographic station (GR4). Surface seawater was sampled via vacuum filtration through 55 mm stainless-steel filters (30  $\mu\text{m}$  mesh). Beach sediments were obtained from seven coastal sites (six replicates per site) and sealed in aluminium containers. Suspected anthropogenic particles ( $>100$   $\mu\text{m}$ ) were quantified under a stereomicroscope following Markley et al. (2024). Fibers and fragments were classified by color and morphology and were polymer-identified using a LUMOS  $\mu\text{FTIR}$  microscope.

## 5. MARINE STORIES from a Master student



**Figure 1:** Images of microplastics captured under visualization with a stereomicroscope. (a,b,c) are fibers present in plankton samples; (d) An aggregate of black fibers; (e,f) Fragments of blue and transparent color.

### So... how much plastic is there?

Quite a lot, and it depends on where you look:

- Plankton samples (>200  $\mu\text{m}$ ) contained between 0.015 and 0.298 microfibers per cubic meter, with a median of 0.134 fibers  $\text{m}^{-3}$ .
- Seawater samples (>30  $\mu\text{m}$ ) told a very different story, with concentrations **4–5 orders of magnitude higher**, reaching a median of 225 fibers  $\text{m}^{-3}$ .
- Beach sediments had the highest concentrations of all, especially at sites close to human activity. One site (AKU) reached a staggering **24,700** particles  $\text{m}^{-3}$ .

Fragments were rare in the water but more common in sand, suggesting localized shoreline fragmentation associated with anthropogenic activity. The difference in plankton and seawater was mainly due to the difference in mesh sizes, where finer fibers passed through the larger pore size and vice-versa.

### Glacier types make a difference too!

In plankton samples, there is a significant difference in particle concentrations, showing MT samples much higher with a median concentration of 0.156 particles  $\text{m}^{-3}$  compared to LT which has a median concentration of 0.088 particles  $\text{m}^{-3}$ . This can be explained by the subglacial discharge in MT regions, which results in upwelling of nutrient rich deep waters enhancing phytoplankton productivity. Plankton grazing these enriched zones, likely accumulate MPs in their tissues and biofilms.

### What kind of plastics did we find?

Across all samples, Polyester (PET) dominated with the highest concentration in fibers 44.7% and 12.4% in plankton and seawater, respectively, and 7.7% in sand samples. The other common polymers were PE, PP, PVC, PA and a few others which were uncommon, and grouped as 'other synthetic'. As for the beach sites, sand samples contained the most diverse polymer profile, with contributions from both synthetic and semi-synthetic polymers. Denser polymers such as Polyamide (PA) (6.7%) and Polytetrafluoroethylene (PTFE) (3.3%) were recovered indicating probable fragmentation of the macroplastics on the shore. Moreover, aggregates of synthetic fibers with a count of about 3 aggregates in plankton and 5 in seawater samples were found.

### The big picture

Overall, microplastics found throughout this study were dominated by fibers in all three matrices, which corresponds with the observation that microplastic abundance increases with decreasing size (Lindeque et al., 2020). Their respective sources are comparatively different but could mainly derive from the Arctic Mediterranean circulation originating from Eurasian riverine inputs for the long-range transport and wastewater sewage discharges from domestic textile fabric washing and industrial fisheries for local anthropogenic activity. Since Nuuk does not have a wastewater treatment plant (WWTP), all fibers are directly released into the fjord, clarifying the cause of site GR4 having highest concentration.

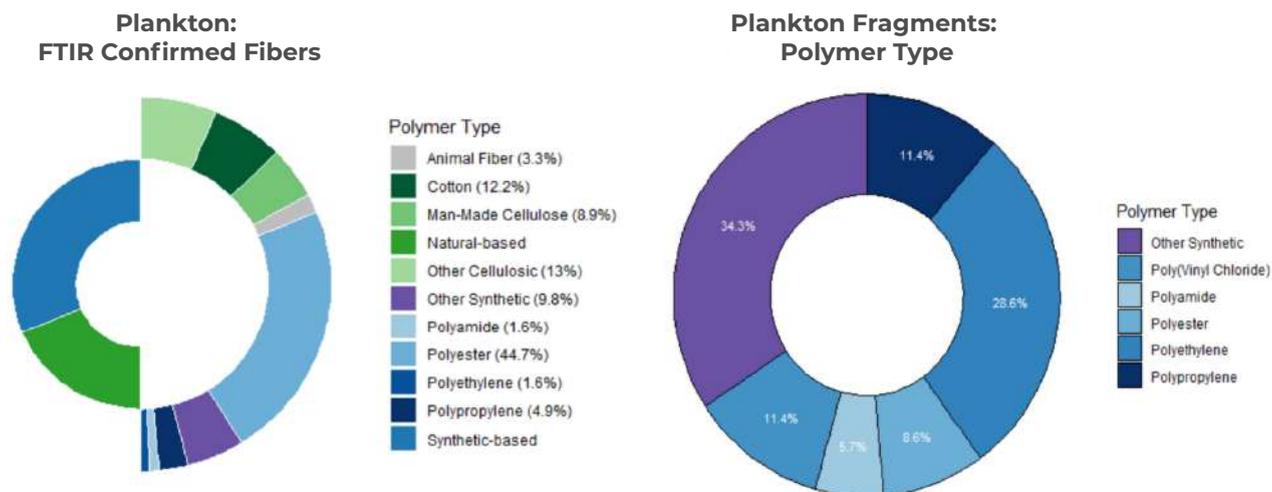


Figure 2: Polymer composition of fiber (a) and fragment (b) in plankton samples.

### What this study provides

The findings highlight that MPs, particularly in the MT sites are bioavailable to plankton, posing ecological risks for the Arctic food webs and fisheries, which are vital for Greenland's community and economy. By addressing critical knowledge gaps in MP occurrence, polymer composition and potential sources, this data could be essential for future monitoring of fishing vessels, wastewater treatment discharges, textile industries and tourism, creating awareness and action. Collectively, the results of this study confirms that this global pollutant is distributed around all matrices of Southwest Greenland, and that better waste management strategies in the indicated sectors may help reduce its occurrence in the Arctic.

**Thank you for reading– I hope this read makes a difference on how we use plastic in our daily lives.**

## Why sediments matter?

Prabodha Lakran (MER cohort 2017-2019)

### It is all about our sedimentary archive

A sediment horizon at a point in time captures a picture-perfect reflection of the conditions of the overlying water column at that point in time. This is the backbone of palaeoclimatology research.

But how true is this?

Export production is a simplified version of particle flux in the oceans that we often discuss. While the vertical settling of such production is a major contributor to sedimentation, it is only a half-told story. Unbeknownst to us is the lateral transport, carrying particles from elsewhere before the ultimate deposition on the sea floor. This puts our paleoclimatic reconstructions under the microscope.

To what extent should we rely on them? Are we interpreting the original autochthonous signal? Or does the allochthonous signal empower the local signal? How biased is our (paleo)climatic signal?

This raises more questions than any of us bargained for. So, what do we do next? We try to untangle this mess, slowly, methodically.

### The Shackleton site: a benchmark for paleoclimate fidelity

In the Southwest Iberian margin lies the Shackleton site. It was named after Nick Shackleton for his pioneering research on the fidelity of the site to construct global millennial-scale climate variability. The site is a unique placeholder for paleoclimatology research. It is one of the few places on Earth where continental records and ice core records can be compared to the marine sediment records.

Deploying a mooring in a highly dynamic environment is a challenge.

And guess what? No moorings have ever been developed at the site- until now.

And that changed with us.

### Why moorings matter?

Deploying moorings in a highly dynamic margin environment is no small challenge. But understanding particle transport; both vertical and lateral demands exactly this kind of sustained, in situ observation.

A mooring line is a long line composed of interconnected cables and ropes. Mounted on it are sediment traps that collect the export and the lateral transport fluxes. And oceanographic instruments like CTDs (to measure temperature and conductivity) and ADCPs (to measure ocean currents and turbidity) are attached alongside to characterize the ocean conditions.

## 5. MARINE STORIES from a PhD student ■

We were able to deploy two mooring lines along a transect: one in the shallow waters and one in the deep waters at the Shackleton site. The mooring deployment took only a couple of days with a tremendous amount of hard work from both the scientific, technical, and shipboard crews. But the planning is a whole different story.

### **Two years of planning for two days at sea**

The planning of the mooring line began nearly two years before the actual deployment. Mr Joan Puigdefábregas and Prof Blanca Ausin together designed the mooring line. They had it noted down to the finer details, like the number of shackles and the elasticity of the ropes used, contingency plans in case we lose a part of the line.

Our anchors? Train wheels. Heavy, reliable, and surprisingly effective at keeping the moorings at place throughout the deployment period.

As a newly recruited PhD student for the ERC funded project PASSAGE (2023), I also had the privilege of witnessing the project planning firsthand. I learned some amazing knots that ensures the integrity of ropes with the rest of the components for a year in the ocean. I was also given the opportunity to prepare my own cruise plan with the Marine Facilities Planning. Cruise planning is anything but trivial. Time estimates for a site has to account for depth of the site, CTD casts, deploying box corer and mono corer. Each operation sensitive to weather and sea state.

### **Life at sea: PASSAGE23 And PASSAGE24**

PASSAGE23, during which we deployed the mooring took place in November 2023. The first two days of the cruise were devoted solely to the mooring deployment. For the remainder of the days, the scientific party worked in alternating day and night shifts.

Among many things I learned were, selecting water sample depths, filtering sampled water for carbon and ecological studies, and slicing sediment from both the box corer and mono corer. Half the days, we struggled to keep our feet straight on the ship. But working while struggling to stay upright on a pitching desk also has its sweet moments.

Winter conditions can be harsh. Especially during PASSAGE24, our retrieval cruise, the weather was so rough that our lead scientist had to make the difficult decision to abandon some planned sites altogether.

It would be a crime not to write about the food! The food prepared by the Spanish crew was exceptional. We also enjoyed the company of dolphins, sea birds, as we anchored for sample collections. Sleeping in the cabin felt like lying on a gently swinging cot. But of course, this swing is not without sudden jolts that you were almost certain you would be launched out of bed any second.

### **Bringing it all home for Christmas**

PASSAGE23 and PASSAGE24 were separated by just over a year. Throughout that time, our instruments quietly recorded oceanographic conditions, while sediment traps accumulated a continuous archive of particle fluxes.

## ■ 5. MARINE STORIES from a PhD student

When we finally returned in December 2024 (PASSAGE24), we retrieved all instruments successfully!! Along with a full year of data and samples-just in time to bring them home for Christmas.

Now, we are in the phase that follows every successful cruise: analysis. We aim to reconstruct a coherent picture of sediment transport and redistribution in the Iberian margin and to better understand our sedimentary achieve.

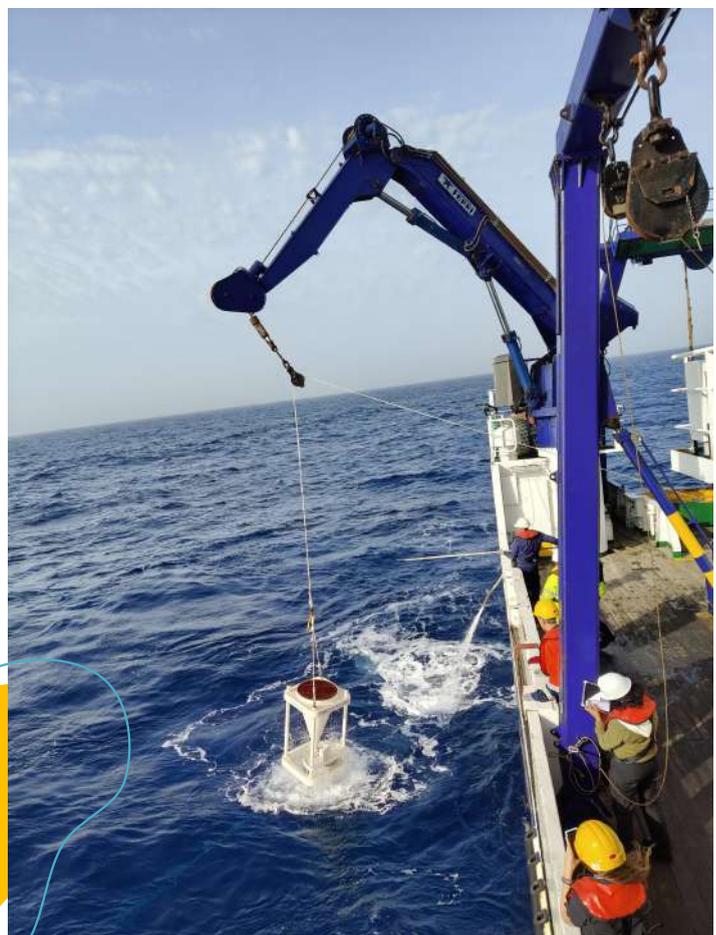
**Hopefully, you will be seeing our results soon!**

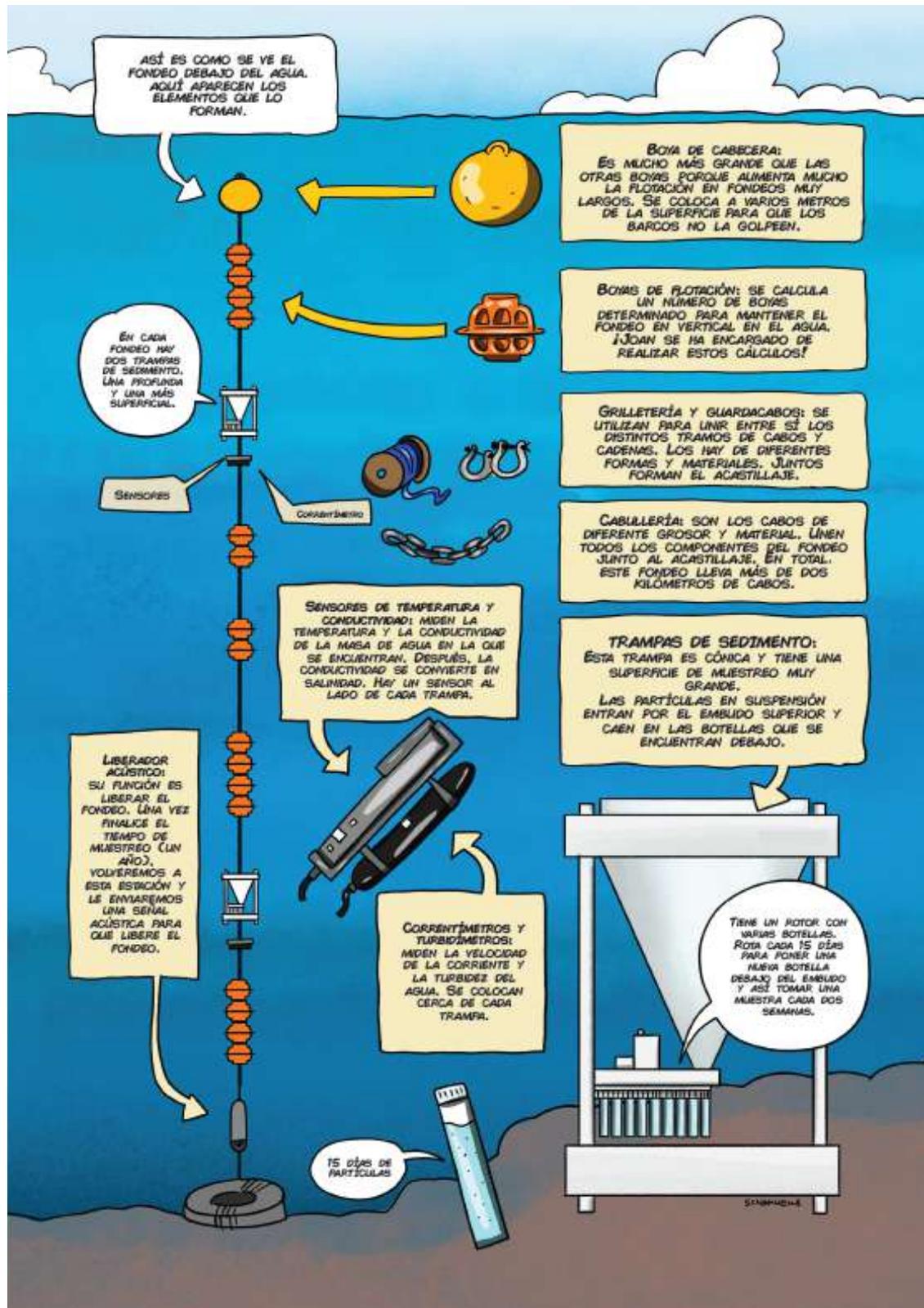
Meanwhile, if you are interested in the work we do, you can download a free copy of the illustration 'Bitácora. Una Aventura Oceanográfica' (Spanish version) by Noah Schamuells and Blanca Ausin, based on our cruise PASSAGE23 here <https://zenodo.org/records/14878501>. (English version soon to be released under the name of "Logbook: An oceanographic adventure"!)

Also, a video of the mooring deployment is available here: [https://youtu.be/zM0BlarYIHw?si=REwWiso7OJmCZ4\\_I](https://youtu.be/zM0BlarYIHw?si=REwWiso7OJmCZ4_I).

And for more information you can always visit us at: <https://passage.csic.es/>

Also, a final note, our project is funded by the European Union. Views and opinions expressed are however, those of the authors only and do not necessarily reflect those of the European Union or the European Research Council Executive Agency. Neither the European Union nor the granting Authority can be held responsible for them. This work is supported by the ERC grant PASSAGE, No. 101039348, under Horizon Europe Program.





Picture extracted from 'Bitácora. Una Aventura Oceanográfica' by Noah Schamuells and Blanca Ausin.

# Vegetarian lifestyle of corals explains why reefs thrive in nutrient-poor water

Cecilia D'Angelo & Jörg Wiedenmann

Coral Reef Laboratory, Ocean & Earth Science, University of Southampton, UK



Reef coral community in the Red Sea (Credit: C. D'Angelo & J. Wiedenmann, University of Southampton).

The question as to why coral reefs thrive in parts of the oceans that are poor in nutrients is known as the *Darwin Paradox of Coral Reefs*. Research of the Coral Reef Laboratory at the University of Southampton in the UK adds a missing piece of the puzzle and helps solve the long-running mystery. The research shows that stony corals farm and feed on their photosynthetic symbionts – microscopic algae that live inside their cells. This vegetarian diet allows the corals to tap into a large pool of nutrients that was previously considered unavailable to them. Effectively, they are eating some of their symbiont algae to get the nutrition they need to survive. The findings suggest that while coral animals may endure brief periods of starvation by feeding off their symbionts, some coral reefs might be at risk of starvation in response to more prolonged nutrient depletion brought on by global warming in some areas.

Stony corals are soft-bodied animals made up from many individual polyps that live together as a colony and secrete limestone skeletons which form the three-dimensional framework we know as 'reefs'. The coral polyps acquire nutritious compounds rich in nitrogen and phosphorus by catching prey such as zooplankton with their tentacles. They use the nitrogen and phosphorus to produce for instance proteins and DNA required for them to grow.

## 5. MARINE STORIES from a researcher ■

Many coral animals are dependent on a 'symbiosis', a mutually beneficial relationship with microscopic algae that live inside their cells. The photosynthetic algae produce large amounts of carbon-rich compounds, such as sugars, which they transfer to the host coral for energy generation. However, the photosynthates translocated to host are poor in nitrogen and phosphorus and, hence, cannot sustain the growth of the animals.

Coral reefs are important underwater ecosystems that benefit many human communities. They provide a home and feeding ground for countless organisms, sustaining about 25 percent of global ocean biodiversity (Figure 1). Thereby, they deliver food and income to about half-a-billion people on Earth.



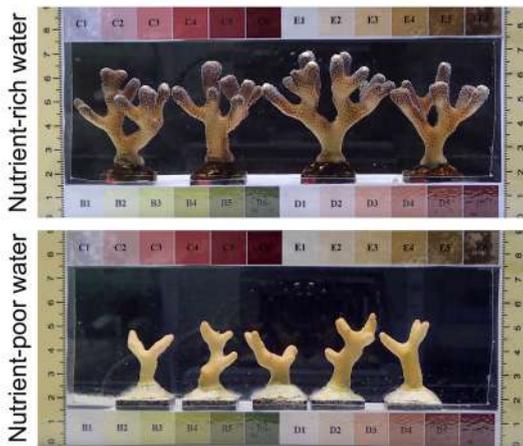
**Figure 1:** Reef corals provide home and feeding grounds for many other organisms (Credit: J. Wiedenmann & C. D'Angelo, University of Southampton).

Over the many years during which we propagated symbiotic corals in our experimental aquarium system, we had observed that they grew very well even when they were not fed (Figure 2). One would expect that animals die or stop growing if they don't eat. However, the corals looked perfectly happy and grew rapidly if we kept them in water with elevated levels of dissolved inorganic nutrients. This observation could not be explained by the current state of knowledge how nutrients were exchanged by the two partners of the symbiosis, so we figured that we were missing a big piece of the picture and started to analyse the process systematically.

The symbiont algae of the corals (Figure 3) are very efficient in taking up dissolved inorganic nutrients from sea water, such as nitrate and phosphate. Even in nutrient poor oceans, these compounds can be found in considerable amounts as excretion products of organisms, such as sponges, that live close by. They can also be transferred to reefs by ocean currents. In contrast to their symbionts, the coral host cannot absorb or use nitrate and phosphate directly and, until now, it was unclear how these nutrients could fuel the growth of coral. Working as a team of collaborators from the University of Southampton, Lancaster University in the UK, Tel Aviv University and the University of Jerusalem in Israel, we have elucidated the mechanism how these essential growth nutrients are transferred to the coral animals.

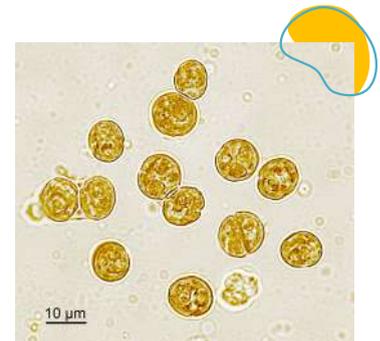
We conducted long-term experiments in the experimental aquarium facility of the Coral Reef Laboratory at the University of Southampton (Figure 4). In each of the experiments the corals were cultured in tightly controlled nutrient conditions for more than six months. We used 10 different coral species to quantify how the symbiont population grew along with their hosts. Using mathematical models of the symbiont growth, we could show that the corals digest the excess part of their symbiont population to harvest nutrients for their growth. Our data suggest that most symbiotic corals can supplement their nutrition through such a "vegetarian diet".

## 5. MARINE STORIES from a researcher



**Figure 2:** Experimental corals grew fast in nutrient-rich water despite the absence of particulate food (upper right image). Corals in nutrient-poor water stopped growing and showed a bleached appearance (lower right image). Colour and length scales facilitate the comparison (Credit: L. Mardones-Velozo, C. D'Angelo & J. Wiedenmann, University of Southampton).

To provide evidence that the nutrients accumulated by the growing coral tissue were derived from the symbionts, we used a specifically labelled chemical compound to track the movement of the essential nutrient nitrogen between the partners of the symbiosis. Nitrogen in the chemical form used in the experiments can be only integrated in their cells by the symbionts, but not the coral host. We used isotopic labelling to 'spike' the nutrients supplied to the corals with nitrogen atoms that were heavier than normal. These isotopes allowed us to trace the coral's use of the nutrients using ultrasensitive detection methods. With this technique, we could unambiguously demonstrate that the nitrogen atoms that sustained the growth of the coral tissue were derived from the dissolved inorganic nutrients that were fed to their symbionts in the experiment. Results from fieldwork in remote coral reef atolls in the Indian Ocean support our laboratory findings, demonstrating that this mechanism boosts coral growth in the wild at the ecosystem level.



**Figure 3:** Unicellular symbiont algae from a reef coral viewed under the microscope show different stages of growth by cell division. A scale bar indicates cell size (Credit J. Wiedenmann, University of Southampton).



**Figure 4:** The experimental aquarium facility of the Coral Reef Laboratory at the University of Southampton (Credit J. Wiedenmann, University of Southampton).

### Further Reading:

- Wiedenmann, J., D'Angelo, C., Mardones, M. L., Moore, S., Benkwitt, C. E., Graham, N. A., ... & Genin, A. (2023). Reef-building corals farm and feed on their photosynthetic symbionts. *Nature*, 620(7976), 1018-1024.
- D'Angelo, C., & Wiedenmann, J. (2012). An experimental mesocosm for long-term studies of reef corals. *Journal of the Marine Biological Association of the United Kingdom*, 92(4), 769-775.

## Marta Pascual

**MER Cohort:** 2006-007

**Current position:** Spanish National Hub  
for EU WestMED Initiative, Atlantic  
Action Plan and MSP Platform



### Which do you think is your main labour achievement?

I do not usually like to look at achievements at someone's labour career, however, if I need to highlight something I would like to mention the capacity to adapt to the various career challenges that we all face along our labour careers and the need to develop high resilience and adaptability skills all throughout one's lifetime.

In my concrete case, the need to adapt to new career situations has always been there, since finishing the PhD to the current situation as Spanish National Hub. Developing a scientific career is always a challenge, especially at some countries, due to the lack of funding to pursue the research career, but also due to the high professional uncertainty that is usually attached to the scientific career development. Having said this, one needs to continuously adapt and perform research that is not only important, but also impactful for current societies. If this is something one has in mind, then the adaptation capacity to move within the scientific development career could go more smoothly. However, as it was my case, one should also find other areas where scientific knowledge and skills could be valuable, and the science-policy interface could be one of such areas.

### Which is the best thing about working in marine science for you?

If I need to highlight the best about working in marine sciences I would like to mention that it is an environment where there is yet a lot to be discovered, so no single day will be similar to the previous one! This also has other interesting side effects from which I would like to highlight the interesting collaboration opportunities that usually occur within marine science communities as we all need to work together to achieve some of the main challenges that our oceans are currently suffering from.

### Which is the "B side"?

B-side would be that, despite oceans and their sustainable management are increasingly receiving more attention (i.e. UNOC, COP, etc.), yet ocean and marine issues are not within the main political decisions of our governments. This means that marine sciences and funding devoted to marine sciences is widely spread across many other topics and one needs to find its way to keep funding coming to their research pathways. This is really challenging and, unfortunately, the main reason many scientists fall-out in this endeavour and pursues other career pathways outside marine science at some point of their labour development.

## 6. INTERVIEWS

### **Why have you chosen working in (marine) science? When did you make this decision?**

Being born close to the sea, I believe I have always had a lifelong passion for the ocean and its creatures, a desire to protect marine environments, and let's not forget, a sense of pursuing marine adventures! This motivated me to study marine sciences and work on marine environments since early in my career.

### **What is your relation with MER? For how long have you been involved in the Master MER?**

I was part of the 2<sup>nd</sup> cohort of MER, so my relationship with MER goes back to 2007. Since then, I have kept in contact with my cohort and other cohort colleagues with whom I have, and I am still collaborating as a researcher. With the MER secretariat, I have also kept the relationship and participated at the Master MER events when requested.

### **What would be your advice for the MER students and their future career in marine science?**

If I need to provide an advice for MER students, I would mention the following recommendations:

- 1 Make the most of the MER master contacts and colleagues, as they would be your first entry point of contact within your scientific careers.
- 2 Be proactive in all aspects of your life, do not wait for opportunities to come and knock on your door (this seldomly occurs), but create and encourage your opportunities (propose new ways, ideas and see how to best develop these).
- 3 Be adaptive and resilient to changes. Despite you may concentrate on a very specific scientific question or research, be open to see how this question related to wider socio-economic challenges. This would not only broaden your scientific perspective, but also help you finding funding opportunities to keep pursuing your research in the future.
- 4 Last, but not least, to keep the enthusiasm and keep thinking outside the box whenever facing any new scientific question. Do not fall within the usual ways of doing things but try to keep innovation and creativity as a mayor movement force for anything you pursue in your life. This would not just make your life more interesting but also help you in this complex endeavour of marine sciences.

## Dramatic Goodbyes and Unexpected Hellos: A MER Community Story

It was a bittersweet moment saying goodbye to the friends who had become my closest companions during the MER program. As I boarded my flight back to Germany, I couldn't shake the feeling that those shared memories, late-night study sessions, and adventures were now just a chapter closed. I cried for most of the flight. It literally broke my heart. I thought to myself, *"That's it. I'll never see those faces again."* (People from my cohort know that I always tend to be a LITTLE bit dramatic lol).

Right after our graduation week, I found myself in Kiel for a summer school at GEOMAR on marine carbon dioxide removal (CDR). What I didn't expect was how quickly the event would turn into a MER reunion. As the days went by, I kept running into familiar faces: Former classmates like Ada (<3) from my cohort and alumni from years before, all now scattered across Europe but somehow gathered in that one place. Some, like me, were there as participants, eager to dive deeper into marine CDR. Others were researchers at GEOMAR. By the end of the week, I had reconnected with five MER alumni, each with their own unique journey since graduating. It was incredible to hear how the program had shaped their careers and lives, and to see how those shared experiences in Plentzia had led us all to this moment, together again.

One of them was **Svetlana**, a 2016 graduate who now works in Ocean Alkalinity Enhancement (OAE) at GEOMAR. She shared how she had stayed in touch with Lovina, another alumna now based at STARESO in Corsica. "We even invited each other to our weddings" Svetlana laughed, recalling about the bonds formed during our time in Plentzia and beyond.



## 7. PRESS RELEASE AND OPINION LETTERS

I also reconnected with **Husna** (Cohort 2022–2024), who graduated just a year before my cohort and is now pursuing her PhD in marine carbon dioxide removal (CDR) at the Helmholtz-Zentrum Hereon. Then there were **Daniel**, from her cohort as well, specializing in particle tracking, and David, who graduated a year before Husna and Daniel and now focuses on biogeochemical modelling of plankton dynamics. As it turned out, they both had become close friends with **Ada**, a classmate from my cohort who also works at GEOMAR.

What struck me most was the realization that MER isn't just a program. It's a living, breathing network. The ocean sector may be competitive and niche, but it's also incredibly interconnected. Conferences, workshops, and research projects become reunions, where old friends and colleagues cross paths again and again. **The visibility of MER alumni is astonishing.** Literally! We're everywhere, working in labs, NGOs, policy, and industry, all still connected by those shared experiences.

To those of you who, like me, have just graduated and are navigating this strange in-between phase: **you're not alone.** The MER community doesn't disappear after graduation! It grows with you. It's right there, in the face of a colleague across the room, in a shared laugh over an inside joke, or in the knowledge that someone, somewhere, remembers exactly what you went through and is cheering you on. So **keep your eyes open.** Keep reaching out. The paths we've chosen may diverge, but in this small, passionate world of marine science, they're bound to cross again.



That's also why I'm already looking forward to the **MER Summit in Bordeaux, 2-6 September 2026**, where we'll celebrate 20 years of the program. It's a chance to reconnect with the people who've shaped our journeys and to strengthen the bonds that make this community so special! After all, if Kiel taught me anything, it's that no matter how far we go, **the MER family always finds a way to come together.**

**Hope to see you there!**

*Lilly Butcher*

## A Path Set by a Master's Thesis: Diving Into Coral Research in the Mediterranean

I am **Nagore Quintano** and I did both my bachelor's degree in Biology and MER+ master degree at the University of the Basque Country. But MER+ went far beyond an ordinary master's programme, a truly life-changing experience that traced a path that I still follow. It is impossible for me to speak about MER+ without mentioning that some of my dearest people today, but this time I will focus on how the MER+ shaped my scientific career.

Even if MER+ was an undoubtedly positive experience in every sense, there were many stressful moments. Personally, one of those was the period when we had to search for a master thesis topic, supervisor and, of course, next homeplace! After lots of paper reading and email exchanging with researchers, I finally found my master thesis when Dr Stelios Katsanevakis, from the University of the Aegean, proposed me to participate in the first ecological description of a previously undocummented large coral formation in Lesvos Island, Greece.

### Behind the scenes of a master thesis

The first step to design my master thesis was to carry out a "deep" bibliographic review. My species of study, *Cladocora caespitosa*, the site and descriptive studies of coral bioconstructions were completely unknown for me, so I spent 4 months checking for relevant literature and designing the field surveys we would do next, with the guidance of my supervisors at the time, Dr Stelios Katsanevakis and Dr Maria Sini. At the end of May 2022, I finally got to see this *C. caespitosa* bioformation first-hand. It was located in Kalloni Gulf, a semi-enclosed area south-west of Lesvos Island, in the Aegean Sea. Even if the first image that comes to our minds when we hear about the eastern Mediterranean are beautiful, crystal-clear waters, this was absolutely not the case. Kalloni Gulf is known for its blurriness, so it was definitely not the easiest place to dive in, and of course nor the most convenient to work in! While measuring the size of the coral colonies, we'd often have to wait for a few seconds until the sediment in suspension sank back to the seabed in order to be able to see around again. Maria Sini and I (and sometimes also other researchers from the Marine Biodiversity lab) would dive almost daily for 3 weeks, meeting at university early in the morning (around 6 am), as we'd see ourselves forced to come out of the water before 12 am due to the high turbidity brought by waves.



With Maria Sini, onboard of the R/V Aktaia (Department of Marine Sciences - University of the Aegean) before one of the *Cladocora caespitosa* samplings in the blurry waters of Kalloni Gulf (bottom).

## 7. PRESS RELEASE AND OPINION LETTERS

All in all, I felt happy and grateful to sample at the site where Aristotle studied many of the species he described on his pioneering work *Historia animalium* ("History of Animals"), which set the bases for the modern classification of animals. I successfully defended my master thesis in September that year, and I was awarded the Calypso Prize for the "best master thesis research", for which I sincerely thank the Cousteau Foundation.

### ***Cladocora caespitosa*:**

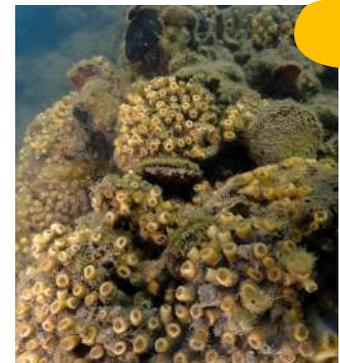
#### **Not all corals are tropical**

*Cladocora caespitosa* is a coral species, endemic to the Mediterranean Sea, that has the ability to form large reef-like bioformations, similar to those found in the tropics. Furthermore, thanks to its association with symbiotic algae (i.e., zooxanthellae), it has the capacity to obtain energy through photosynthesis, but also through active feeding on zooplankton, particulate organic matter, etc. (i.e., heterotrophic pathways). Unfortunately, its populations have undergone several mass mortality events in the last decades due to different impacts, such as overfishing, pollution and coastal development, but most importantly due to marine heatwaves caused by climate change. Therefore, in 2015 *C. caespitosa* was included in the Red List of the International Union for Conservation of Nature (IUCN) as an Endangered (EN) species.



The port of Kalloni Gulf, from where we'd depart every morning to reach our *Cladocora caespitosa* sampling site.

From left to right: 1) *Cladocora caespitosa* in association with bivalves (provided by Giulia Pitarra). 2) Partially necrosed *C. caespitosa* colony (provided by Maria Sini).



During my master thesis stay, we gathered data on the coral density and cover, size of the colonies and health

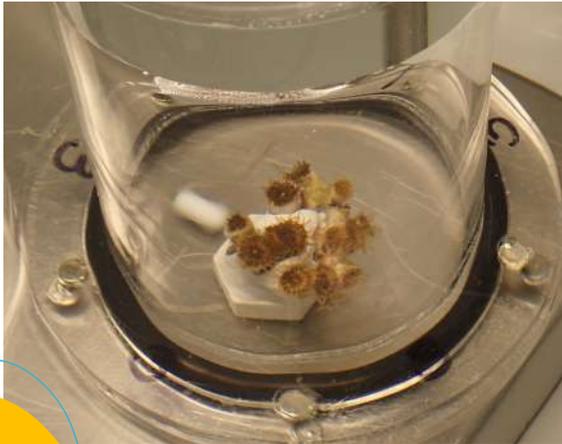
status of the *C. caespitosa* coral bank in Kalloni Gulf, and recorded the marine species that were present in the area. After lots of additional research and improvements, we wrote a manuscript and managed to publish it as a paper on the scientific journal *Mediterranean Marine Science* (Quintano et al., 2025a). Currently, there are less than 20 reported *C. caespitosa* banks in the Mediterranean Sea, being this in Kalloni Gulf among the largest ones. This is an important work on the Mediterranean marine ecology, since it provides essential baseline data for the future monitoring and conservation of *C. caespitosa*.

### **From master's thesis to doctoral thesis**

After I got my MER+ diploma -and lots of rejections from different research labs-, I got a technician position at the Instituto de Acuicultura de Torre de la Sal (IATS – CSIC) in Castelló, Spain. This happened after I contacted Dr Diego Kersting, an expert on *C. caespitosa* whose work was highly relevant for the bibliographic research of my master thesis.

## 7. PRESS RELEASE AND OPINION LETTERS

In March 2024, I started my PhD under his and Dr Cristina Linares' (University of Barcelona) supervision, which consists on investigating the biotic and abiotic factors that shape climate change resilience on *C. caespitosa*, with a particular focus on the role of nutrients. For this, we study several *C. caespitosa* populations across the Mediterranean Sea (in Catalonia, Columbretes Islands, Menorca, Sardinia and Sicily), as they live under distinct temperature and nutrient gradients. We'll describe the environmental characteristics and population dynamics of these populations, and obtain data to predict which environmental conditions may favour or hinder the survival of *C. caespitosa* under future climate change scenarios.



Incubation of *Cladocora caespitosa* coral nubbins in Menorca to measure their photosynthetic activity and compare it with the rest of the study areas.



The first scientific paper of my PhD also came out this year (Quintano et al., 2025b), which presents for the first time field-based evidence of the possible relationship between moderate nutrient concentrations in the water and a higher climate change resilience of *C. caespitosa*. This study is based on the long-term monitoring of two coral populations in the Catalan coast of Spain (NW Mediterranean), which are geographically close but subjected to distinct temperature and nutrient regimes.

*Cladocora caespitosa* colony from the Montgrí population (Catalonia, Spain) (provided by Diego K. Kersting).

### Final thoughts: Looking ahead from the beginning

The choice of my master thesis mattered more than I understood at the time. It didn't only shape my professional career, but also where I live today, how I continue to learn and who are the people I now see everyday. And who are those that, even if not seen everyday anymore, are felt close everyday and are alongside me in every twist and turn, through every curve and detour.

### Nagore Quintano

#### References

- Quintano, N., Sini, M., Topouzelis, K., Tsirintanis, K., Katsanevakis, S. (2025a). First record of a remarkable *Cladocora caespitosa* bank in Aristotle's Lagoon (N Aegean Sea): Structure and health status. *Mediterranean Marine Science*, 26(4): 903-920. DOI: 10.12681/mms.40108
- Quintano, N., Linares, C., Ramon-Cortés, A., Kersting, D.K. (2025b). Nutrient regimes shape mortality patterns in warming-impacted *Cladocora caespitosa* populations. *Coral Reefs*. DOI: 10.1007/s00338-025-02711-z

## 8. WHERE AM I NOW?

# Paula Fragueiro Sabaini

**MER Cohort:** 2022-2024

**Birth place:** Argentina

**Current location:** Ushuaia, Argentina



After completing my Master's thesis on Antarctic benthos, I was drawn south to Ushuaia - a city at the very edge of South America, facing the polar frontier. From its remote port, I embarked to Antarctica in 2023 on the EXPLORANT III campaign alongside Dr. Johan Etourneau and Dra. Belén González Gaya, crossing into the icy vastness that continues to inspire my work.

I am now based at the Centro Austral de Investigaciones Científicas (CADIC), where I study the carbon system in high-latitude marine environments within the OCAH-Beagle project. Working in Patagonia at a multidisciplinary research center grants technical training and a profound appreciation for the challenges of conducting science at the very end of the continent. The proximity to Antarctica allows for both fieldwork and regional exchanges; I was fortunate to attend the XIV International Symposium on Antarctic Earth Sciences (ISAES) in Punta Arenas (Chile) strengthening ties within the polar research community.

The images capture our regular samplings along the Beagle Channel, carried out with the Argentine Naval Prefecture. During the 2nd Binational Argentina-Chile campaign, we deployed instruments from a legendary and unique oceanographic sailing vessel of Argentina, Motovelero Bernardo Houssay, tracing carbon dynamics from surface waters to deep layers.



 [paufragueiro@gmail.com](mailto:paufragueiro@gmail.com)

 <https://www.linkedin.com/in/paula-fragueiro-sabaini-03ba311a3/>



# MER

Newsletter



<https://merconsortium.eu/>

Front cover photo: **Gently ceased from the ATKA expedition 2019, thanks to Svetlana D'Costa**

Back cover photo: **Paula Fragueiro Sabaini**

Design and illustrations: **NorArte Visual Science**