

Annual Report 2022

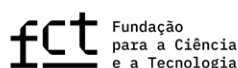
EUROPEAN MARINE BOARD

The European Marine Board provides a European platform for its Member organisations to develop common priorities, to advance marine research, and to bridge the gap between science and policy, in order to meet future marine science and societal challenges and opportunities

The European Marine Board is an independent and self-sustaining science policy interface organisation that currently represents 37 Member organisations from 18 European countries. It was established in 1995 to facilitate enhanced cooperation between European marine science organisations towards the development of a common vision on the strategic research priorities for marine science in Europe.

The EMB promotes and supports knowledge transfer for improved leadership in marine research in Europe. Its membership includes major national marine or oceanographic institutes, research funding agencies and national consortia of universities with a strong marine research focus. Adopting a strategic role, the EMB serves its Member organisations by providing a forum within which marine research policy advice is developed and conveyed to national agencies and to the European Commission, with the objective of promoting the need for, and quality of, European Marine Research.

www.marineboard.eu





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Highlights 2022



Message from the Chair



During the 2022 Spring Plenary Meeting General Assembly of the European Marine Board (EMB IVZW) held on 27 April 2022, I was officially elected for another two-year term as EMB Chair and I would like to thank all of our Members for the trust they have placed in me.

I have to say that this year was filled with memorable encounters and interesting Ocean interactions that left us feeling inspired, presented us with new perspectives and gave us fresh motivation to continue the important work of the EMB. It has also been an important year for the Ocean, with activities such as the Ocean Decade and the Mission Ocean getting into their stride, and with a number of high-level events such as the one Ocean Summit in Brest, the UN Climate Change Conference (COP26) in Egypt and the UN Biodiversity Conference (COP15) in Canada explicitly considering the Ocean.

One of the highlights of 2022 was the kick-off meeting of the 6th edition of EMB's flagship publication Navigating the Future VI (NFVI). This meeting was hosted by the Flanders Marine Institute at the brand-new InnovOcean campus in Ostend, Belgium, also the location of the EMB Secretariat. It was wonderful to meet the over 30 excellent scientists, who brought their unique expertise to help put the Ocean on the map in the wider Earth system and to turn this next edition of the flagship publication series into another important EMB foresight document. I am especially pleased to do my best to Chair this activity.

The benefit of being able to attend meetings such as these is that there is room for networking and sometimes short encounters, and we should not underestimate how quick interactions can lead to bigger things. The importance of communication is something we all learned more about in December in Sète, France at the 5th edition of CommOCEAN, the Marine Science Communication conference organised by the EMB Communication Panel, in partnership with the University of Montpellier, GéoSciences Montpellier, UMR MARBEC, Ifremer and Universités Marines. The conference united over 150 participants from 23 countries and exchanges of views took place about the importance of communicating science in different but effective ways for various audiences. This is an important message which underpins the work of the European Marine Board in bridging the gap between marine science and policy.

The EMB took a step into the unknown this year, and brought a new player to the table: Art. In January the EMB initiated the artist-in-residence programme 'EMBracing the Ocean', which is an activity in support of the Ocean Decade and Mission Ocean. Three artists from different disciplines and from across Europe were selected to co-design artworks in close collaboration with marine scientists. We are proud to say that the first year of this programme has been an overwhelming success and we look forward to continuing it next year. We had the privilege to be involved from the start in the creation of their unique musical compositions, moving dance performances and impressive ceramic installations, and have been able to follow the journey of their work. These artists have helped us to see our Ocean from their point of view, from a different angle, and it has inspired not only us, but also continues to inspire citizens and other important stakeholders.

As for every annual report, nothing would have been possible without the members of the EMB Secretariat, who have always been a tremendous help for me but essentially in keeping all our activities on the right track, ensuring that EMB publications, events and meetings are delivered according to our high standards. I am looking forward to embarking on our next Navigation in the Future of the European Marine Board.

Dr. Gilles Lericolais, EMB Chair

Executive Director's report



Three years after the start of COVID-19 we are now well versed in the new world order of online meetings. However, during 2022 we were able to go back fully to working in the office and were fortunate to move into lovely new offices with our hosts at the InnovOcean campus in Ostend, Belgium. The new offices have brought us closer together as a team but also introduced us to new neighbours as part of the move. We were happy to have the full team working together and were able to host multiple Working Group meetings both at the old and new offices. The Secretariat was also able to welcome our Young Ambassadors **Rebecca Zitoun** (NIOZ/Geomar), **Juliette Biquet** (CCMAR/FCT), and **Alfredo Gutierrez** (IEO) in Ostend over the summer. Unfortunately, **Anjali Gopakumar** (CoNISMa) was in Australia, so we were unable to meet her in person. Under the wonderful management of Science Officer **Paula Kellett**, the Young Ambassadors have, during 2022, created an ECOPs network and started running their own webinar series. I look forward to hearing the talks that they have lined up for 2023. Another highlight this year was the start of the EMBracing the Ocean artist-in-residence programme. Science Officer, **Britt Alexander** and the EMBracing the Ocean Committee had the very difficult job of picking two amazing artists, and the Board approved funding for a third. The art that has come out of this programme has already inspired me and others.

As you will learn from this annual report, the EMB Secretariat has attended many important and interesting events during 2022. The most memorable might be the EuroSea Project Annual Assembly, where Science Officer **Ángel Muñoz Piniella** was able to get the most out of the Working Group planning meeting by providing some beverages to lubricate discussions. **Ángel** is the master conference organiser and again co-organised a very well received CommoCEAN Conference while also starting to plan for EurOCEAN 2023 during 2022, working on the EOOS, a chapter of Navigating the Future VI, and a new Working Group on Deep Sea and Ocean Health.

Our newest Science Officer, **Ana Rodriguez** had the “pleasure” of organising a workshop in COVID-times and was able to perform miracles when our EcoScope Project workshop changed from in-person to online at the last moment. This workshop was very well received by all stakeholders and project partners. **Ana** has also gotten her feet wet in the Working Group world by leading on the Ocean Oxygen Working Group and was lucky to have two in-person (hybrid) meetings, which has led to timely writing of the document. She is also leading on a chapter of Navigating the Future VI.

One of the most amazing parts of my job is the talented team I work with. In addition to leading the Young Ambassadors, **Paula Kellett** is also leading on the Working Group on Marine Renewable Energy and on Navigating the Future VI, and **Britt Alexander** is leading the Working Groups on Coastal Resilience and Marine Habitat Mapping, and on a chapter of Navigating the Future VI.

One of the important events we participated in in 2022 was the UN Ocean conference in Lisbon where I was supported by Young Ambassadors **Rebecca Zitoun** and **Juliette Biquet** and Science Officer **Britt Alexander** to represent the EMB as far as possible. **Britt** and I were also able to attend the Bridge-BS -Project Annual Assembly in Varna, Bulgaria and **Ángel Muñoz Piniella**, **Paula Kellett** and our new Finance Officer, **Jana van Elslander** were able to join our Chair, **Gilles Lericolais** in representing the EMB at the European Maritime Day in Ravenna. **Jana** has become fully embedded into our team, and has taken over the most arduous financial matters, leaving me to represent the EMB more fully at various meetings.

During 2022 the EMB Secretariat also worked extensively in highlighting the Ocean Decade, through the EMBracing the Ocean programme, and in coordinating with other Ocean Decade Implementing Partners to highlight all the Ocean Decade activities in a new bi-monthly newsletter. We have also signed up to the Mission Ocean Charter and have started highlighting the Mission in our work. I look forward to seeing what this wonderful team can accomplish in 2023 and believe that with this team the European Marine Board Secretariat can represent our Members well in the science-policy landscape.

Prof. Sheila J. J. Heymans, EMB Executive Director

EMB mission, structure and governance

MISSION

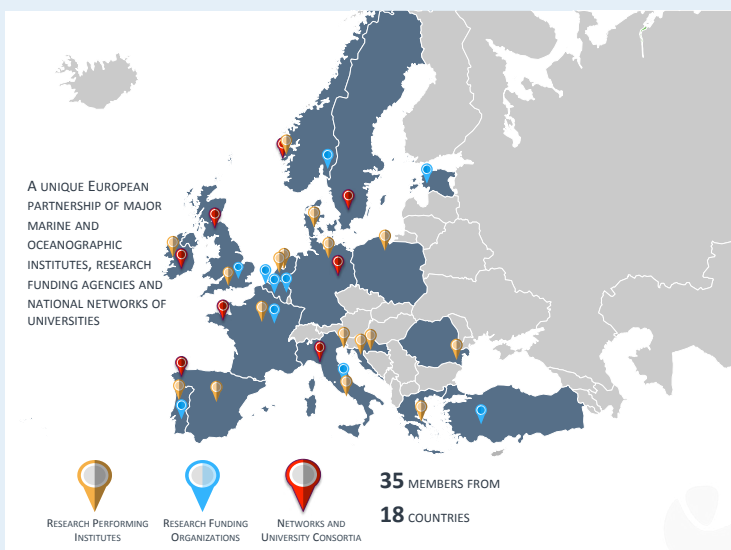
The European Marine Board (EMB) provides an independent platform for its Member organisations to promote common positions on research priorities and strategies in Europe, and to bridge the gap between science and policy in order to meet future marine science challenges and opportunities.

Topics of strategic interest identified by the EMB form the basis for new publications and events. These target European and national research programme managers, strategy developers, policymakers and the marine research community to drive future European and national marine research agendas, and supporting strategies and policies.

EMB acts as an independent science-policy interface, transferring and translating scientific knowledge to policymakers, and channelling policy needs back to the research community.

STRUCTURE AND GOVERNANCE

The European Marine Board (EMB) was established in 1995 to facilitate enhanced cooperation between European marine science organisations. Members are either major national marine or oceanographic institutes, research funding agencies, or national consortia of universities with a strong marine research focus. In 2022, the EMB represented 35 Member organisations from 18 countries.



EMB DELEGATES

The representatives (EMB Delegates) from EMB Member organisations form 'the Board', which is the highest decision-making organ of the EMB. EMB Delegates meet twice a year at Plenary meetings to share knowledge, define common priorities, and agree on activities and outputs. Observers and guests are invited to attend EMB Plenary meetings on an ad hoc basis. These include the European Commission (EC), the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), and other international and European marine science networks.

The EMB's mixed membership of research performing organisations, research funding organisations, and national university consortia, ensures its unique capacity to deliver science policy advice on issues of identified strategic importance and to influence European marine research agendas.

EXECUTIVE COMMITTEE

EMB operations are overseen by the Executive Committee (ExCom). The ExCom meets three times per year to ensure the implementation of the actions agreed by the Board at Plenary meetings, make operational and financial decisions, and give strategic guidance to the Board and Secretariat. The EMB Executive Director is ex-officio member of the ExCom. ExCom mandates in 2022:



Gilles Lericolais – Chair
French Research Institute for the Exploration of the Sea (Ifremer), France
Spring 2019 – 2024



Carlos García Soto – Vice-Chair
Spanish Oceanographic Institute (IEO), Spain
Spring 2017 - 2022



Jeremy Gault – Vice-Chair
Irish Marine Universities Consortium (IMUC), Ireland
Autumn 2018 - 2022



Fiona Grant – Vice-Chair
Marine Institute (MI), Ireland
Spring 2020 - 2023



Alan Evans – Vice-Chair
Natural Environment Research Council (NERC), UK
Spring 2020 - 2023



Katrin Schroeder – Vice-Chair
National Research Council (CNR), Italy
Spring 2020 - 2023



Rosa Fernández Otero – Vice-Chair
Technological Centre of The Sea (CETMAR), Spain
Spring 2021 - 2024



Martin Pfannkuchen – Vice-Chair
Ruđer Bošković Institute (IRB), Croatia
Spring 2022 - 2025

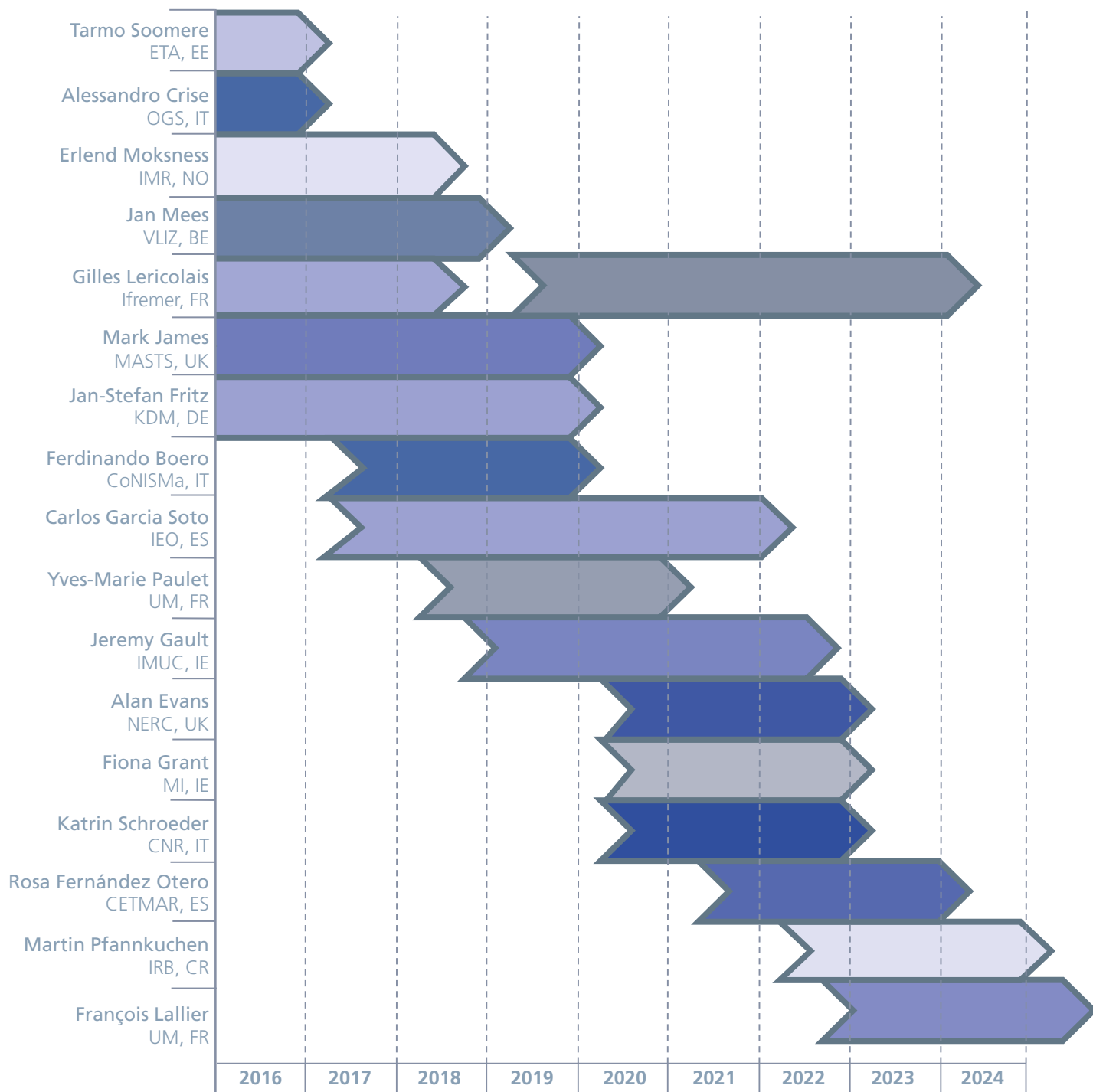


François Lallier – Vice-Chair
Marine Universities (UM), France
Autumn 2022 - 2025



Sheila JJ Heymans – Ex-officio Member
EMB Executive Director

OVERVIEW OF EXCOM MEMBER MANDATES SINCE EMB IVZW INDEPENDENCE FROM ESF IN 2016



EMB SECRETARIAT

The EMB Secretariat implements the strategic- and operational decisions and activities proposed by the Board and ExCom. EMB activities and the operation of its Secretariat are funded through annual Member contributions, EMB external contracts and generous support from the Flemish Government of Belgium, through the Flanders Marine Institute (VLIZ).

The EMB Secretariat is led by Executive Director **Sheila Heymans**. The team consists of four Science Officers **Paula Kellett**, **Ángel Muñoz Piniella**, **Britt Alexander** and **Ana Rodriguez**, and the Executive and Finance Officer **Jana Van Elslander**.

The Secretariat is based in Ostend, Belgium. In September 2022, the EMB Secretariat officially moved into the brand-new InnovOcean campus, together with the Flanders Marine Institute, ILVO and other national and international partners.



The EMB Secretariat at the Brown Bag Lunch in Brussels, Belgium, June 2022.

From left to right: Paula Kellett (Science Officer), Ana Rodriguez (Science Officer), Ángel Muñoz Piniella (Science Officer), Britt Alexander (Science Officer), Sheila Heymans (Executive Director) and Jana Van Elslander (Executive and Finance Officer).



The EMB Secretariat and Chair at European Maritime day in Ravenna, Italy, May 2022.

From left to right: Jana Van Elslander (Executive and Finance Officer), Ángel Muñoz Piniella (Science Officer), Gilles Lericolais (EMB Chair) and Paula Kellett (Science Officer).

EMB YOUNG AMBASSADORS

In March 2019, the EMB launched its Young Ambassador Programme in order to strengthen collaboration with, and engagement from early career researchers. The EMB Young Ambassadors play an important role in advocating and promoting the relevance of marine science and the Ocean to their peers and wider networks. They are EMB's soundboard to a vast group of early career researchers and ensure that the voices and ideas of young researchers are reflected within the EMB's work. The Young Ambassadors engage with EMB for a 2-year period after which they join the Young Ambassador Alumni Group.

In 2022, EMB had 4 active Young Ambassadors: **Rebecca Zitoun**, a postdoctoral researcher from the Royal Netherlands Institute for Sea Research (NIOZ) who moved to the Helmholtz Centre for Ocean Research Kiel (GEOMAR) in Germany; **Anjali Gopakumar**, a joint PhD student at the University of Bologna, part of the Universities Consortium (CoNISMa) in Italy, and Macquarie University, Australia; **Juliette Aminian Biquet**, a PhD student at the Centre of Marine Sciences (CCMAR) in Portugal, who is supported by the Portuguese Science and Technology Foundation (FCT), and **Alfredo Santiago Garcia de Vinuesa Gutierrez**, a postdoctoral researcher at the Spanish Institute of Oceanography (IEO) in Cádiz, Spain.



During 2022, the EMB Young Ambassadors launched the EMB Early Career Ocean Professional (ECOP) Network for early career researchers from EMB Member organisations to meet, network, and learn about the marine science-policy landscape. They set up the monthly ECOP Wednesdays webinar series, where speakers from the marine science-policy landscape present their work and insights, and attendees can engage in the discussion (see p. 19). These monthly events are organised and moderated by the EMB Young Ambassadors. You can find out more about this network and its events here: <https://www.marineboard.eu/emb-ecop-network>



One of the highlights of 2022 involved **Rebecca** and **Juliette** representing EMB at the UN Ocean Conference in Lisbon on 27 June – 1 July. **Rebecca** spoke as a panelist at three side events, and **Juliette** spoke to other participants about the work of EMB. The Young Ambassadors were also involved in several online and in-person events. Notably, on 14 October, the Ambassadors organised a workshop on considering different perspectives in marine conservation research at the YOUNMARES early career researcher conference in Berlin. The Ambassadors also presented the EMB ECOP network in a video and poster as part of the online Show and Tell Exhibition of the CommOCEAN 2022 conference (see p. 18).

You can find out more about the EMB Young Ambassadors, see all of their activities, and read their blog articles on the EMB website: <https://www.marineboard.eu/emb-young-ambassador-programme>

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Anjali Gopakumar



Rebecca Zitoun



**Alfredo Santiago
García de Vinuesa
Gutierrez**



**Juliette Aminian
Biquet**

GENDER AND DIVERSITY EQUITY AND INCLUSION

Gender and Diversity Equity and Inclusion are important in marine science as it reflects the diversity of society, helps attract and retain the best talent, and ensures innovation. Studies on gender balance have shown that entities with gender-balanced management lead to better decision making, scored higher on operating margins, employee retention, client retention, safety, and employee engagement.

As a European science policy think-tank, it is important for EMB to reflect the diversity of society, both at the EMB Secretariat and at Board level. At EMB we aim to ensure diverse engagement in all activities through inclusion, we understand the diversity of needs linked to Ocean science, and we aim to be exemplary and serve as role models to our community.

In 2021, the EMB Secretariat created a Gender & Diversity Plan which includes the actions the EMB conducted by the Secretariat and in the wider organisation. This Gender & Diversity Plan also complies with the requirements of the European Commission to be eligible to join European Projects.

Gender and Diversity Equality and Inclusion training

In Autumn 2022, the EMB Secretariat undertook a Gender and Diversity Equality and Inclusion training, led by the Belgian-based social enterprise JUMP¹. The overarching aim of this two-session training was to increase awareness and knowledge on this topic, both on a personal and an organisational level. The first part of the training focused on the meaning and importance of Gender and Diversity Equality and Inclusion, and raised awareness about the barriers, stereotypes and unconscious biases surrounding this topic. The second session focused on the potential role of EMB as an advocate, and the possibilities to implement this into the Mission & Strategy of the organisation, while also significantly improving the existing Gender & Diversity Plan. One of the interesting pieces of information that was received is this the graphic to explain the difference between equality and equity.

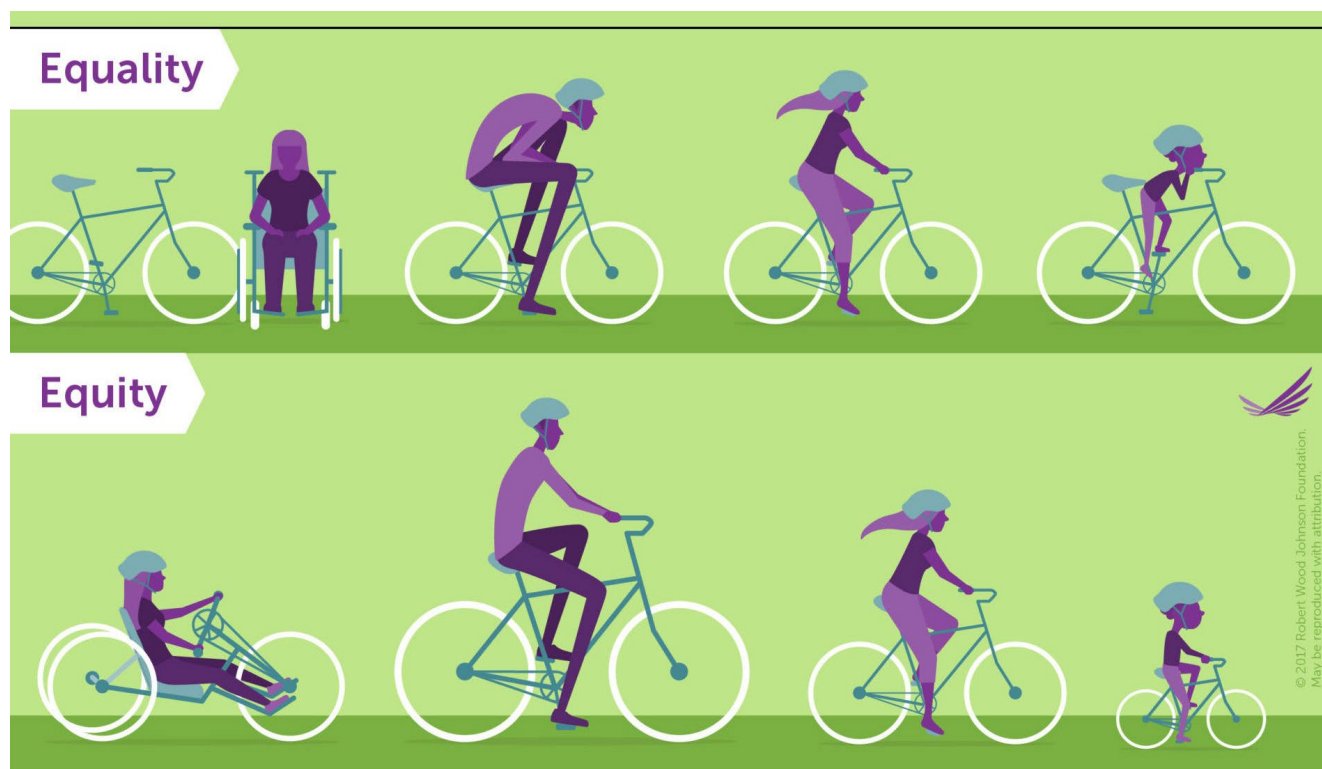


Diagram showing the definitions of equality and equity.

The new EMB Gender Diversity Equity and Inclusion Plan is available on the EMB website. It is considered a living document and will be updated when considered appropriate: <https://www.marineboard.eu/gender-diversity>

¹ <http://jump.eu.com/>

Plenary meetings 2022

EMB Plenary meetings are held twice a year, online in spring and hosted by a Member organisation in autumn. During these meetings EMB Member organisations share knowledge, define common priorities and agree on activities and outputs that will drive and/or impact European and national marine research and policy agendas. At these meetings, EMB Delegates can interact with invited speakers, guests, and observers from the European Commission, UNESCO's Intergovernmental Oceanographic Commission (IOC-UNESCO) and other stakeholders.

SPRING PLENARY MEETING | 27-28 APRIL 2022, ONLINE

The EMB Spring Plenary 2022 was organised as an online meeting on 27-28 April. In total 45 EMB Delegates, four EMB Young Ambassadors and 14 observers and speakers attended the meeting. Some highlights from the meeting are listed here.

New composition of the EMB ExCom

Gilles Lericolais was re-elected for another two-year term as EMB Chair and the Board elected **Martin Pfannkuchen** (IRB, Croatia) as the new ExCom Vice-Chair. **Martin** replaced outgoing ExCom member **Carlos García Soto** (IEO, Spain), who served a valuable five-year term as Vice-Chair.

New EMB Working Groups

The EMB Secretariat presented the Terms of Reference (ToR) for two new EMB Working Groups. One for the next edition of EMB's flagship series Navigating the Future VI and one for the newly voted topic Deep Sea and Ocean Health. The Board approved the ToR for both Working Groups and agreed to send out the call for nominations.

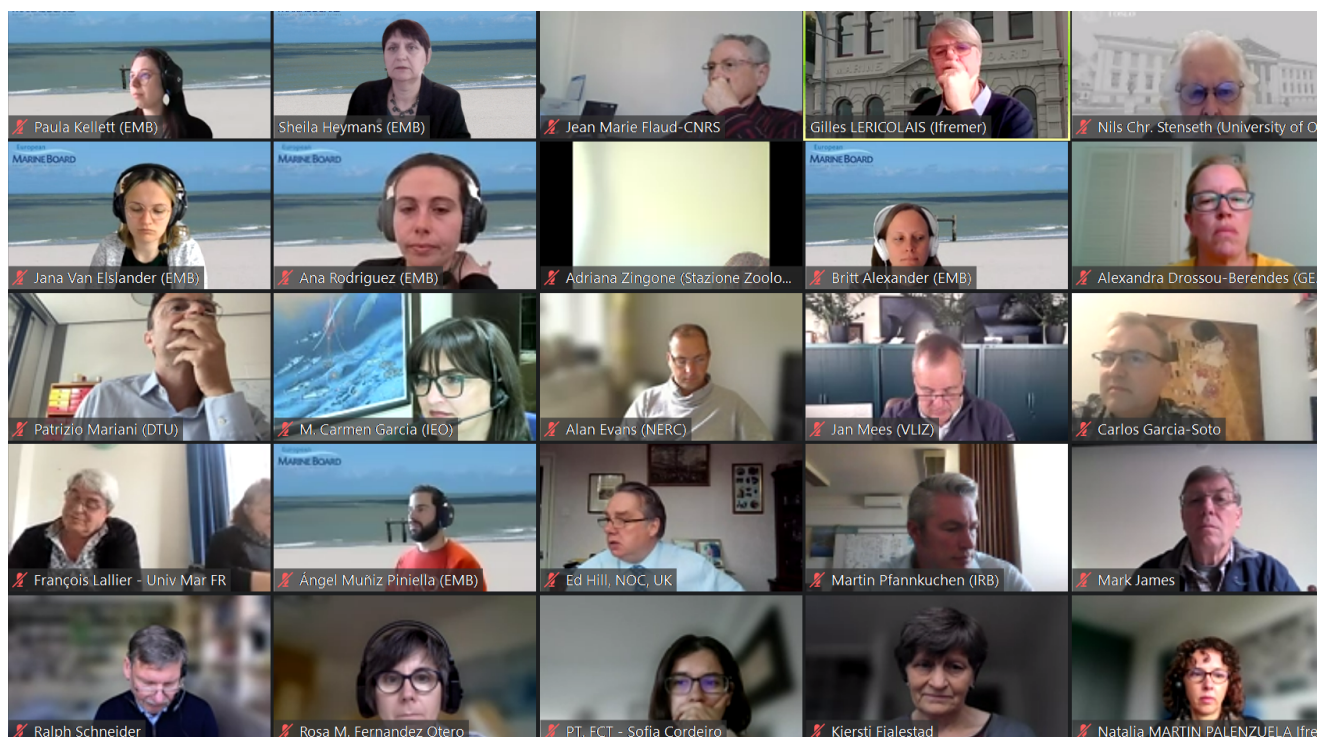


Introduction of 'EMBracing the Ocean' artists

The newly selected artists for the EMBracing the Ocean 2022-2023 programme, **Emily Lartillot**, **Michael Begg** and **Lera Litvinova**, presented themselves and their work during the science session. EMB's artist-in-residence programme provides grants for creative individuals or groups to co-create artworks with Ocean scientists. This programme is part of EMB's support towards the UN Ocean Decade (see p. 34).

Open Session

The EMB Secretariat hosted a virtual open session on the EU Mission: Restore our Ocean and Waters (see p. 37). The session was opened by **Elisabetta Balzi** from the European Commission's DG for Research and Innovation (DG RTD), and continued with presentations from **Adrian Stanica** (GeoEcoMar, Germany) and **Sigi Gruber** (Ex-DG RTD). Thereafter the EMB Board discussed the added value of engaging with the Mission and the potential role within this initiative of EMB and its Members.



Some of the attendees at the online Spring Plenary 2022 meeting.

AUTUMN PLENARY MEETING | 26-27 OCTOBER 2022, OSTEND, BELGIUM AND ONLINE

The EMB Board and invited guests gathered at the brand-new InnovOcean campus in Ostend, Belgium, on 26-27 October 2022 for the EMB Autumn Plenary meeting, hosted by EMB Member FWO/VLIZ. The meeting was attended by 36 EMB Delegates, three Young Ambassadors and eight observers and speakers. Some highlights from the meeting are listed here.

EMBCP Update

The Chair of the EMBCP, **Mari Carmen García** (IEO) presented the most recent updates from the EMB Communications Panel, which included the organisation of the 5th International Marine Science Communication Conference (CommOCEAN 2022) and the launch of the Future Science Brief No. 8 'Marine Science Communication in Europe: a way forward'. EMBCP member **Jan Seys** (VLIZ) presented the main messages and recommendations from the publication.

Open Session and PhD presentations

The open session was organised by VLIZ and focused on climate change, the carbon cycle and blue carbon. The session was opened by the CEO of VLIZ, **Jan Mees**, and the session featured several expert presentations and a panel discussion.

During the reception on the first day of the meeting, five VLIZ PhD students presented their research through short pitch presentations to the EMB Board.



New composition of the EMB ExCom

The Board elected **François Lallier** (UM, France) as the new ExCom Vice-Chair. **François** replaced the outgoing ExCom Vice-Chair **Jeremy Gault** (IMUC, Ireland), who had to step down from his role as Vice-Chair due to a change in employment.

New EMB Working Group

The Board agreed to launch a new Working Group on the topic of 'Blue Carbon as marine climate solution'.



The in-person attendees in Ostend, Belgium during the Autumn Plenary 2022 hybrid meeting.

Credit: EMB



EMB science-policy interactions & events

The EMB is an independent organisation funded by its Members. We provide an interface between science and policy and engage with a wide range of stakeholders in the marine science-policy field, including the European Commission, European Parliament, and Intergovernmental Organisations, to advance marine science in Europe and beyond. We strongly believe in two-way communication and welcome the input from policymakers to provide the best available scientific advice at the right time. We stimulate communication by organising a variety of interactive events ranging from small-scale discussions on a specific topic (e.g. Brown Bag Lunches) to large-scale overarching events (e.g. the CommOCEAN conference and EMB Forum).

COMMOCEAN 2022

On 30 November and 1 December 2022, the 5th edition of the CommoOCEAN conference took place in Sète, France. This event was hosted by the University of Montpellier, GéoSciences Montpellier, MARBEC, Ifremer and Universités Marines, together with the European Marine Board Communication Panel.

CommoOCEAN is the Marine Science Communication conference, which combines hands-on exercises in current science communication skills for disseminating Ocean research and technology, with plenty of expertise-sharing, social interaction, and fascinating marine science. The conference welcomed 150 participants from 23 countries from across the world. Thanks to the conferences' hybrid component, 80 additional participants were able to follow the live-streamed and dedicated online sessions.



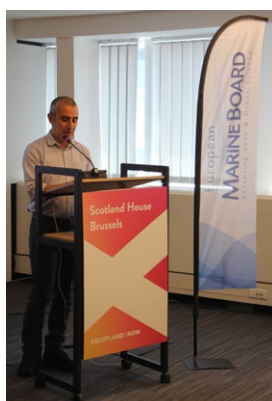
Recordings of the sessions and key messages arising from the conference have been released on the CommoOCEAN YouTube channel². More information can be found on the CommoOCEAN website³.

BROWN BAG LUNCH NO. 5

The EMB regularly organises Brown Bag Lunches in Brussels, Belgium, which bring together stakeholders to initiate discussion on a relevant marine science topic. These events include lunch, offered by EMB, followed by a topical presentation from an expert and ends with an interactive discussion amongst the in-person participants. These participants are a mix of relevant stakeholders interested in the topic, such as researchers, policymakers, industry, etc.

The 5th EMB Brown Bag Lunch (BBL) took place on Monday 13 June 2022 at the Scotland House in Brussels, Belgium. The event was organised on the topic of 'Offshore freshened Groundwater: An unconventional water resource in coastal regions'.

Freshwater resources in coastal regions are under enormous stress due to population growth, pollution, climate change and political conflicts, and many coastal cities have already suffered extreme water shortages (e.g. Cape Town and Chennai). Offshore freshened groundwater (OFG) has been proposed as an alternative source of freshwater to relieve water scarcity, provide a buffer to increased demand during periods of intense drought, and mitigate the adverse effects of groundwater depletion and climate change. There is an urgent need to identify where OFG is located and in which volumes, delineate the most appropriate approaches to characterise OFG, identify the most cost-effective strategy to utilise this resource, and assess the environmental and legal challenges to sustainable OFG use.



Aaron Micallef, Senior Scientist at the GEOMAR Helmholtz Centre in Kiel, Germany, outlined a roadmap to address these needs and transform Europe into a global leader in OFG utilisation. The event ended with an interactive discussion amongst the participants.

The presentation was live-streamed and has been made available on the EMB YouTube channel⁴, and more information can be found on the EMB website⁵.

² <https://www.youtube.com/@commoceanconf>

³ <https://commocean.org/>

⁴ <https://www.youtube.com/@europeanmarineboard9043>

⁵ <https://www.marineboard.eu/events/brown-bag-lunch-n5-offshore-groundwater>

ECOP WEDNESDAY WEBINARS

In March 2022 the EMB Young Ambassadors (see p. 11) launched the EMB Early Career Ocean Professional (ECOP) Network to give early career researchers from EMB Member organisations a platform to meet, network and learn about the marine science-policy landscape. The ECOP Wednesday Webinar series is aimed specifically at the EMB ECOP Network and focuses on the European and international marine science-policy landscape.

These one-hour webinars are hosted by EMB's Young Ambassadors, held over lunch on the first Wednesday of the month, and include presentations from a professional within the broad landscape of marine science-policy. These events give attendees a chance to learn about this complex landscape and an opportunity to interact with professionals during the discussion and Q&A session.

The following list provides an overview of the webinars that took place in 2022. You can watch all presentations on the EMB YouTube Channel⁶.

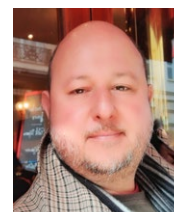


July 2022: Getting to know the European marine science-policy landscape.

At the first edition of this webinar series, EMB Secretariat member **Paula Kellett** introduced the European marine science-policy landscape. **Paula** has been a Science Officer at the European Marine Board since 2016 and has become an expert in providing scientific recommendations to this European landscape.

August 2022: Ocean Science Diplomacy.

This webinar was transformed into an engaging interactive discussion by **Andrei Polejack**, Research Assistant at the World Maritime University, and technical advisor at the Ministry of Science, Technology and Innovation, Brazil. **Andrei** shared his knowledge about Ocean Science Diplomacy, a topic on which he published several papers.



September 2022: Mission Oriented R&I for a Healthy Ocean.

During this webinar **Ana-Maria Stan**, Policy officer for Healthy Oceans and Seas, in the Directorate General for Research and Innovation, European Commission, in Brussels, spoke about the importance of the Mission Ocean oriented Research & Innovation for a Healthy Ocean.

October 2022: Ecological impacts of large-scale offshore wind farms in the Mediterranean Sea.

This webinar featured **Joseph Lloret**, Associate Professor and Director of the Oceans and Human Health Chair at the University of Girona, Spain. **Joseph** gave a talk about the ecological impacts of large-scale offshore wind farms in the Mediterranean Sea.



November 2022: How to use your PhD without being an academic.

Susanna Pakkasmaa, research advisor at the Department of Clinical Sciences, University of Bergen, Norway, gave a presentation about how to use your PhD without being an academic. **Susanna** previously managed the Norwegian Marine University Consortium (NMU) and represented the Consortium at the European Marine Board.

December 2022: Thoughts on the future regulations of Ocean observing in the European Union.

During this webinar **Erik van Doorn** shared his thoughts and knowledge on the current and future regulations of Ocean observing in the European Union. **Erik** is currently working as a research associate at the Walther Schücking Institute for International Law at Kiel University, where he has been teaching and researching international law.



⁶ <https://www.youtube.com/@europeanmarineboard9043>

EMB SCIENCE WEBINARS

The European Marine Board's (EMB) Third Thursday Science Webinar series highlights the science that underpins or is linked to EMB publications and activities. The webinars take place every third Thursday of the month from 13:00-14:00 CE(S)T. The format of the webinar includes a short opening by the EMB moderator and up to 30 minutes of presentation by one or two speakers, followed by an opportunity for the audience to ask questions.

All presentations and video recordings from each webinar are available on the EMB website⁶ and on the EMB YouTube channel⁷. The following list provides an overview of the webinars that took place in 2022.



February 2022: Ocean and Human Health: A deeper look into how coastal environments benefit human health and well-being.

This webinar built on the science presented in EMB's Policy Brief No. 8 on 'Policy Needs for Oceans and Human Health' and included presentations from Flanders Marine Institute's (VLIZ) PhD Students **Marine Severine** and **Alexander Hooyberg**. **Marine** gave a talk on emotional mechanisms underlying the beneficial impact of coastal environments on mental well-being, and **Alexander** spoke about psychological restoration along the Belgian coast and the influence of landscape type and content.

March 2022: An insight into INSITE (the influence of structures in the ecosystem programme).

Director and founder of Howell Marine Consulting, **Dicken Howell** presented the science behind EMB's Policy Brief No. 2 on 'Decommissioning of offshore man-made installations: taking an ecosystem approach' and shared more information on the INSITE programme.



April 2022: Can early career scientists make a difference in achieving the Ocean we want? - Experiences from the EMB Young Ambassadors.

This webinar featured the research and experience of the two outgoing EMB Young Ambassadors **Natalija Dunić**, a Croatian Ocean physicist at the Institute of Oceanography and Fisheries (IOF) and **Alessandro Cresci**, a postdoctoral scientist at the Norwegian Institute of Marine Research (IMR), who both presented their current studies and their experience as a Young Ambassador. **Natalija** spoke about thermohaline properties and the circulation of the Adriatic Sea and **Alessandro** talked about how marine species disperse, migrate, and navigate in their environment.

May 2022: Critical research needs for informing environmental management of deep-sea mining.

Pedro Ribeiro, researcher in marine ecology at the Department of Biological Sciences and the Centre for Integrated Deep-Sea Research of the University of Bergen, Norway, gave a talk based on EMB's Position Paper No. 22 on 'Delving deeper: Critical Challenges for 21st Century Deep-Sea Research' and highlighted the research needs for environmental management of deep-sea mining.



June 2022: European Research Vessels: Current Status and Foreseeable Evolution.

This webinar built on the science presented in EMB's Position Paper No. 25 on 'European Research Vessels: Current Status and Foreseeable Evolution'. **Per Wilhelm Nieuwejaar**, Project Director at the Norwegian Institute of Marine Research (IMR), participated in the development of this Position Paper, as well as Position Paper No. 10 on 'European Ocean Research Fleets – towards a Common Strategy and Enhanced Use', and presented the new developments in research vessel capabilities and technology.

⁶ <https://www.marineboard.eu/science-webinars>

⁷ <https://www.youtube.com/@europeanmarineboard9043>



August 2022: Marine biotechnology to advance Europe's bioeconomy.

This webinar highlighted the EMB Policy Brief No. 4 on 'Marine Biotechnology: Advancing Innovation in Europe's Bioeconomy'. Five years after its release, and over 10 years since the EMB's visionary Position Paper No. 15 on 'Marine Biotechnology', **Ana Rotter**, based at the Marine Biology Station Piran of the National Institute of Biology in Slovenia, gave an overview of the current state of affairs evaluating where we are and if the challenges have been addressed.

September 2022: Unlocking Marine Genetic Resources: Streamlining the Legal, Policy and Business Aspects of the Marine Biodiscovery Pipeline.

Jane Collins, Team Leader for Access and Benefit Sharing (ABS) for the UK Government, introduced the marine biodiscovery pipeline and the links to the ongoing Biodiversity Beyond National Jurisdiction (BBNJ) negotiations. This talk linked to the recommendations made in the SOPHIE project's Strategic Research Agenda for Oceans and Human Health, and EMB's Position Paper No. 15 on 'Marine Biotechnology'.



October 2022: The MPA Guide: A framework to achieve global goals for the Ocean.

In this webinar, **Joachim Claudet**, Senior Researcher and Ocean Advisor for CNRS, discussed the main messages from the paper 'The MPA Guide: A framework to achieve global goals for the Ocean', which links to EMB Position Paper No. 18 on 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities'.

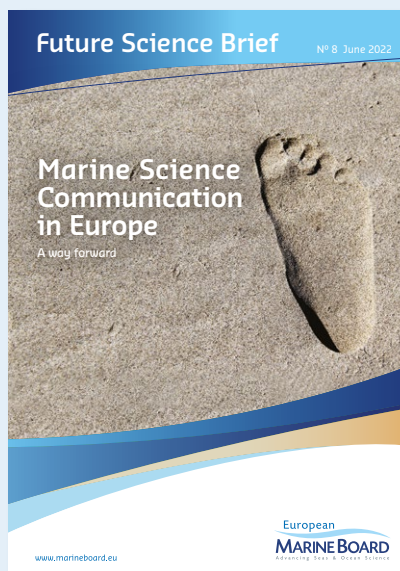
December 2022: Machine learning to unlock the potential of plankton imaging big data.

This webinar linked to EMB Future Science Brief No. 6 on 'Big Data in Marine Science' and included a presentation from **Jean-Olivier Irisson**, Associate Professor at the Sorbonne University of France, who was a member of the EMB Working Group. **Jean-Olivier** discussed the benefits of machine learning to unlock the potential of plankton imaging big data.



EMB PUBLICATIONS IN 2022

Download at:
www.marineboard.eu



Ongoing thematic activities

NAVIGATING THE FUTURE VI

EMB's flagship Navigating the Future publication series provides foresight and strategic direction to marine science in Europe and internationally. These documents are published periodically every two to seven years. As Navigating the Future V was published in 2019, it was timely to start working towards Navigating the Future VI. The Position Paper will focus on the Ocean's place in the world and will be structured around four chapters: Ocean and Climate; Ocean and People; Ocean and Water; and Ocean and Biodiversity.

The Terms of Reference were approved at the EMB Spring Plenary 2022 meeting, and shortly thereafter a call for nominations was sent out to EMB Members. A total of 99 nominations were received from 31 EMB Member organisations, with an approximately equal gender balance. In total the Working Group (WG) consists of 33 members (one from each nominating organisation) all assigned to support one of the four main chapters. The WG is chaired by EMB Chair **Gilles Lericolais** and is co-chaired by EMB Executive Director **Sheila Heymans**.



The WG kick-off meeting was hosted by EMB at the new InnovOcean campus in Ostend, Belgium on 24-25 October 2022. During this two-day meeting, the WG members were informed about the Navigating the Future publication series and its aims, were inspired by external speakers with expertise on the four topics, brainstormed on chapter content, and considered communication and dissemination. The Position Paper is expected to be published in 2024.

More information on this WG and the publication is available on the EMB website:

<https://www.marineboard.eu/navigating-future-vi>



Navigating the Future VI Working Group members at the InnovOcean Campus during the kick-off meeting in Ostend, Belgium.

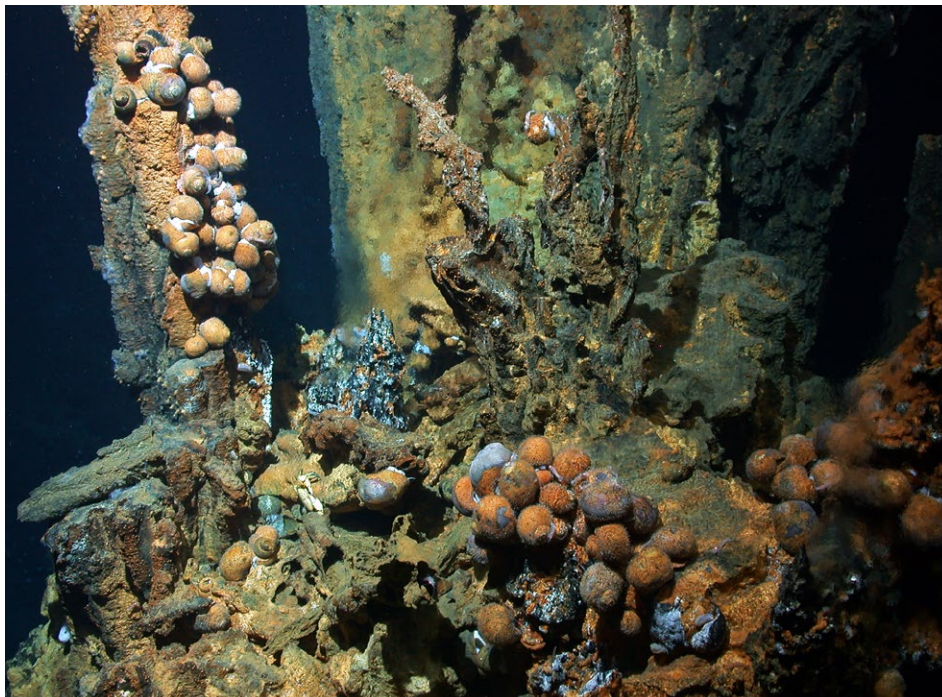
DEEP SEA AND OCEAN HEALTH

The EMB considered it timely to revisit the topic of the deep-sea environment, to take stock of where we are, to highlight the progress that has been made since the publication of its Position Paper No. 22 on 'Delving Deeper: Critical challenges for 21st century deep sea research' in September 2015, and to make recommendations to take deep-sea research forward.

At the EMB Spring Plenary 2022 meeting, the Terms of Reference for a new Working Group (WG) on Deep Sea and Ocean Health were approved. A call for nominations was launched in June 2022, and the EMB Secretariat received 31 nominations, of which 17 female and 14 male, from 11 countries. The WG is chaired by **Sylvia Sander** (GEOMAR, Germany), and the Co-Chair is **Christian Tamburini** (Mediterranean Institute of Oceanography, France). The full list of WG members is available on the EMB website. The kick-off meeting will take place in February 2023. **Ángel Muñiz Piniella** is the Science Officer supporting this WG.

The aim of the WG will be to produce a Future Science Brief outlining the current policy- and research funding status and future recommendations in relation to the deep sea. This document will not focus on any specific sector or field, but take a holistic view of the deep sea, and highlight how the deep sea contributes to overall Ocean health, and what research is needed to ensure sustainable management of its resources.

More information on this WG and the publication is available on the EMB website: <https://www.marineboard.eu/deep-sea-and-ocean-health>



Fauna at a hydrothermal vent in 1,640 meters of water in the Bismarck Sea.

Credit: © MARUM – Center for Marine Environmental Sciences, University of Bremen (CC-BY 4.0)

OCEAN OXYGEN

The Ocean is slowly losing its oxygen due to global warming. This is of great concern and there is a need for stronger communication and heightened awareness about the looming threat of Ocean deoxygenation. Moreover, the sentence “every second breath you take comes from the Ocean” is often used but its scientific foundations are unclear and there is a need to clarify the science underpinning this statement to contribute to its correct use. In this context, the EMB Working Group (WG) on Ocean Oxygen aims to explain the historical and current oxygen cycle, including its relation to the “every second breath” statement, and to communicate the problem of Ocean deoxygenation.

Following a call for nominations in late 2021, the EMB Secretariat received 23 nominations from 11 EMB Member countries, with an approximately equal gender balance. The WG kicked off on 21-22 June 2022 at a hybrid meeting organised at VLIZ in Ostend, Belgium. This group is composed of 12 members and is chaired by **Marilaure Grégoire** (University of Liège, Belgium) and co-chaired by **Andreas Oschlies** (GEOMAR, Germany). EMB Secretariat member **Ana Rodriguez** is supporting this WG.

Since the kick-off meeting, the WG has been busy writing the text for this document. Following an online meeting in August, the WG met for a second time in-person during a hybrid meeting in October 2022, again in Ostend. At this meeting the WG developed the first draft of recommendations. The resulting document will be published in 2023.

More information on this WG and the publication is available on the EMB website: <https://marineboard.eu/ocean-oxygen>



Working Group members at the second kick-off meeting in Ostend, Belgium. In-person from left to right: Pablo Serret, Mustafa Yucel, Jan Seys, Ana Rodriguez (EMB), Sheila Heymans (EMB), Carmen Castro, Karine Salin, Caroline Slomp, Marilaure Grégoire and Andreas Oschlies. Online from left to right: Tommaso Tesi, Donald Canfield and Birgit Schneider.

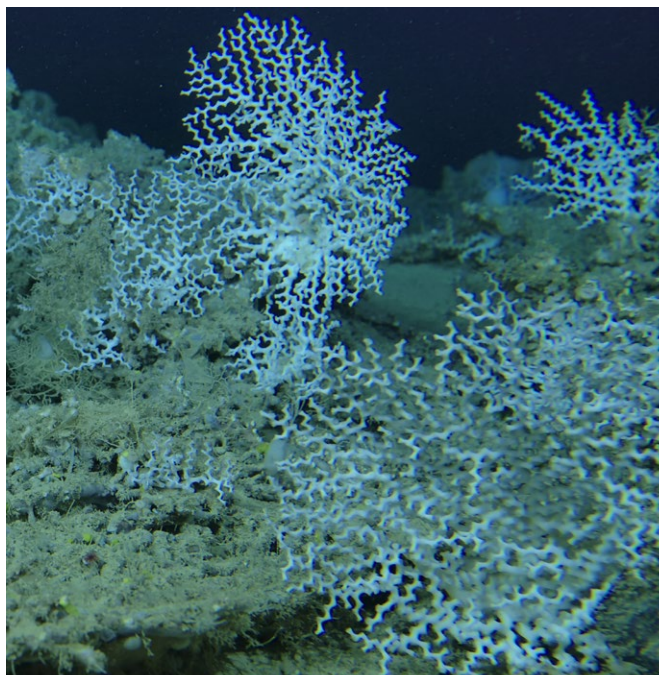


Credit: © Stefan Andrews (Ocean Image Bank)

MARINE HABITAT MAPPING

The Working Group (WG) on Marine Habitat Mapping is chaired by **Simonetta Frascchetti** (UNINA, Italy) and co-chaired by **James Strong** (NOC, UK) and includes 12 WG members. The kick-off meeting was held as a hybrid meeting on 8 April 2022 at the Anton Dohrn Zoological Station in Naples, Italy. The WG has since held monthly online meetings and drafts of the main chapters of the Future Science Brief have been developed.

The rationale for the document stems from the recognition that despite many efforts in marine habitat mapping, the distribution and extent of many habitats is poorly known, especially in the deep sea, and our knowledge the status of these systems is extremely limited. This shortfall stems from the technical difficulties of observing and mapping species and habitats in a cost-effective manner, which are highlighted in the document. Spatial and thematic gaps in marine habitat mapping translate into critical consequences in terms of sustainable planning of human uses and conservation-restoration prioritisation. The document highlights current understanding and state-of-the art research and technology on marine habitat mapping, future challenges, and opportunities, and presents recommendations for further development to enhance coverage, accuracy, cost-effectiveness and sophistication of marine habitat mapping.



Credit: © Simone Pietro Camese, SZN, Italy



Working Group members at the kick-off meeting in Naples, Italy.

Top: Georg Martin, Lenaick Menot and José Manuel González-Irusta. Bottom: Helen Lillis, Lene Buhl Mortensen, Sheila Heymans (EMB), James Strong, Claudia Gili and Simonetta Frascchetti

The document was written by the WG members and edited the WG Chairs and EMB Secretariat during 2022 and will be published in 2023. **Britt Alexander** is the Science Officer supporting this WG.

More information on this WG and the publication is available on the EMB website:

<https://www.marineboard.eu/marine-habitat-mapping>

MARINE RENEWABLE ENERGY

The negative impacts of climate change, and the role played by carbon emissions as human-made drivers of that change, are high on political agendas. There is an urgent and immediate need to significantly reduce carbon emissions and to move towards a carbon neutral society. Renewable energy holds the potential to supply energy to a world with ever-growing populations and increasing industrialisation. The marine research community needs to provide a solid knowledge base and evidence to support sustainable and responsible growth in the marine renewable energy sector.

The EMB Working Group (WG) on Marine Renewable Energy kicked off its activities during an online meeting on 4 June 2021. The WG comprises of 12 members and is being led by **Takvor Soukissian** (Chair, HCMR, Greece) and **Anne Marie O'Hagan** (Co-Chair, UCC, Ireland). The group is supported by EMB Secretariat member **Paula Kellett**.

Throughout 2022, the WG worked on a document which will provide an update on the status and recommendations related to this topic since the 2010 EMB Vision Document 2. It will highlight the current knowledge and research gaps in marine science, including in relation to the impact of offshore renewable energy systems on marine ecosystems and on communities, and consider future implications as this sector continues to mature. It will also make recommendations on gaps that should be addressed to ensure that the sector can grow in a more sustainable and equitable manner to meet demand. An advanced draft of the document was ready by late 2022, and the document was sent for internal EMB and external peer review in November 2022. It is anticipated that the resulting EMB Future Science Brief will be published in the first half of 2023.

More information on this WG and the publication is available on the EMB website:

<https://marineboard.eu/marine-renewable-energy-WG>



Zeeland, The Netherlands.

Credit: ©Paula Kellett

COASTAL RESILIENCE

The Working Group (WG) on Coastal Resilience is chaired by **Sebastian Villasante** (University of Santiago de Compostela, Spain), and co-chaired by **Kristin Richter** (Norwegian Research Centre & Bjerknes Centre for Climate Research, Norway). The experts have worked throughout 2022 on drafting a Position Paper and met online several times to discuss progress and to develop ideas.

Knowledge on how to strengthen the resilience of coasts as interconnected socio-ecological systems is critical to enhance their capacity to cope with climate change and other interacting pressures. This Position Paper provides an overview of frameworks for addressing coastal resilience, pressures facing European coastal social-ecological systems, tools for moving towards coastal resilience, their barriers, and enablers. It also provides recommendations that are relevant today and until 2050 for communities, policy makers, science-policy makers, and scientists to work towards resilient coasts. Coastal resilience is addressed from a holistic perspective including natural sciences (ecological, hydrological, chemical, physical, geological, etc.), ecosystem service provision, and socio-economic and governance systems.

Review and editing of the draft document by the WG Chairs and EMB Secretariat are ongoing. The EMB Secretariat is working together with graphic designer **Amy Dozier** to produce a series of infographics to be included in the document representing the key messages. The Position Paper is expected to be published in 2023. This WG is supported by EMB Secretariat member **Britt Alexander**.

More information on this WG and the publication is available on the EMB website: <https://www.marineboard.eu/coastal-resilience>



Community-led marram grass planting on the Maharees peninsula, Ireland.

European projects and external interactions

The European Marine Board participates in externally funded projects, tenders and other initiatives when these contribute to our Mission and future strategic objectives.



A tourist boat in Venice, Italy.

Credit: © Sheila Heymans



EuroSea, a project on 'Improving and Integrating European Ocean Observing and Forecasting Systems for Sustainable use of the Oceans', is a €12.6m project funded under the EU Horizon 2020 programme. It is coordinated by GEOMAR

Helmholtz Centre for Ocean Research in Kiel, Germany, and involves 55 partners from 16 countries, including partners in Brazil and Canada. The project aims to provide a truly interdisciplinary Ocean observing system that delivers the essential Ocean information needed for the wellbeing, blue growth, and sustainable management of the Ocean. EuroSea will strengthen the European and Global Ocean Observing System (EOOS and GOOS) and will increase the technology readiness levels (TRL) of critical components of Ocean observations systems and tools.

The EMB Secretariat leads a task on Foresight on Ocean Observations in Work Package 1, in collaboration with EuroGOOS, IOC-UNESCO and GEOMAR, and participates in the bi-monthly WP1 meetings and is on the Gender and Diversity Board, which meets virtually bi-annually.

The EuroSea Annual meeting took place as an in-person event in May 2022 in Cádiz, Spain. The EMB Secretariat led the organisation of a workshop in preparation for the Foresight Workshop 2 on Sustainability of the Ocean Observing System. This workshop will take place in early 2023. The EMB Secretariat also participated at the 3rd EuroSea Anniversary Webinar in November 2022.



More information about the EuroSea project can be found at: <https://eurosea.eu/>



The archaeological site of Baelo Claudia, an ancient Roman town. The participants to the EuroSea Annual meeting were offered a guided tour to this site located in Bolonia, Spain.



The EMB Secretariat participates in the H2020 project BRIDGE-BS (2021-2025), which aims to enhance the science-based policy in the Black Sea region to develop blue growth while maintaining and protecting resilient ecosystems. The project is led by the Middle East Technical University (Turkey) and includes 33 partners. It will run from 1 June 2021 until 30 November 2025. The project will develop predictive tools and capabilities necessary to understand and predict the impacts of climate-driven and anthropogenic multi-stressors on the services stemming from Black Sea ecosystems. These services and their responses to stressors will be mapped, monitored and modelled in order to identify a safe operating space within which a sustainable blue economy can flourish.

The EMB Secretariat contributes to Work Package (WP) 8 'Science-based policy making for Blue Growth' led by the International Center for Black Sea Studies (ICBSS) and the Technological Centre of the Sea (CETMAR). The objectives of WP8 are to ensure the uptake of the science developed within BRIDGE-BS by engaging the different groups of policy stakeholders, strengthening the science-policy nexus, and to contribute to science-based policy making for blue growth in the Black Sea. The EMB Secretariat leads a sub-task to produce an International Policy Brief on 'Reinforcing the implementation of marine EU and international policies in the Black Sea region' at the end of the project. This will build on the outputs of the project, such as the status of the Black Sea ecosystems, stressors affecting the ecosystem and the services, needs to maintain the resilience of the ecosystem and the thresholds, risk-based analysis on Black Sea core ecosystem services, the value of the ecosystem services, and business models for a healthy and resilient Black Sea ecosystem.

EMB Secretariat members **Sheila Heymans** and **Britt Alexander** attended the BRIDGE-BS General Assembly in Varna, Bulgaria on 28-29 September to meet the project partners, to gain an overview of the project progress and to discuss the development of the Policy Brief. They have also met online with WP8 leads to discuss the upcoming work that will feed into the Policy Brief.

More information about BRIDGE can be found here: <https://bridgeblacksea.org/>



Britt Alexander (Science Officer) and Sheila Heymans (Executive Director) at the General Assembly in Varna, Bulgaria in September 2022.



EcoScope (Ecocentric Management for sustainable fisheries and healthy marine ecosystems) is a Horizon 2020 project that started in September 2021 and will run until August 2025, with a budget of €7.9m. The project is coordinated by Aristotle University of Thessaloniki, Greece and involves

24 partners from 17 countries. The aim of EcoScope is to promote effective ecosystem-based fisheries management by developing easy to use e-tools that can be used to explore different management options and their consequences in the full ecosystem context. The project will produce an interoperable EcoScope Platform and a robust decision-making EcoScope Toolbox, available through a single public portal.

The EMB Secretariat is the leader of Work Package (WP) 8 'Interaction with stakeholders and capacity building'. The main tasks involve stakeholder mapping, stakeholder management planning, and identifying the needs of policy makers and stakeholders through three strategic workshops and targeted surveys. During 2022 stakeholders were strongly involved in co-designing the e-tools with the EcoScope team and providing feedback on how to improve them. The EMB Secretariat also participates in WP7 'Assessing societal expectations and economic values', where we will lead a task on writing a Policy brief on community preferences, in WP5 'Assessing the ecosystem and its components', in WP1 'Project management' and WP10 'Dissemination and visibility'.

In February 2022, the EMB Secretariat hosted the first foresight workshop on policy makers and stakeholder requirements. During this workshop, stakeholders were invited to provide substantive input, shaping the ongoing design and elaboration of the EcoScope e-tools and their outputs. The EMB Secretariat also delivered two reports during 2022: (1) a report on the first foresight workshop and (2) a report on identifying the needs of policy makers and stakeholders. The latter provided a holistic picture on the international, European and sea-basin wide policy landscape that directly or indirectly influence the needs of policy makers and stakeholders regarding EBFM, and identified key stakeholder needs arising from current or upcoming policy commitments, and/or reported by stakeholders during the survey and foresight workshop.

The EMB Secretariat has also participated in the bi-monthly work package leader meetings and contributed to developing a socio-economic survey on assessment of societal expectations and value of ecosystem-based fisheries management.

More information about EcoScope can be found here: <https://ecoscopium.eu/>



Credit: © Sheila Heymans

EMFF TENDERS

EMODnet tender in support of EOOS

Since January 2022, the EMB Secretariat is involved in the follow-up tender EMODnet Phase IV, led by Seascope Belgium Consultants. This is directly linked to EMB's work on the EOOS Framework (see p. 38). As part of this contract, the EMB Secretariat supports the organisation, running and reporting of the EOOS Advisory Committee meetings.



In 2022, the EMB Secretariat started working on a desk study to complement the previous study that was done in 2019-2020. The aim of this desk study is to assess the status of national Ocean observation and marine data coordination across Europe. In addition, the EMB Secretariat continues to support Work Package 5 on Ocean observing through various tasks and, if the work is considered relevant within EMB's expertise, provide support for other tasks, such as governance and cohesion.



Ocean Literacy

From December 2019 to June 2022, the EMB Secretariat participated in a project to implement the European Ocean Literacy Coalition (EU4Ocean), which offers a focal point for Ocean literacy in Europe. The coalition is made up of three components: A Platform⁸ for organisations and individuals engaged in Ocean Literacy initiatives, a European Youth Forum for the Ocean⁹ for young Ocean changemakers between 16 and 30 years, and a Network of European Blue Schools¹⁰ with teachers and staff of education services bringing the Ocean into the classrooms. The EMB Secretariat facilitated the thematic Working Groups to operationalise the EU4Ocean Platform, to help develop joint partnerships, concrete actions, and co-design new Ocean literacy actions. The topics of the Working Groups were Climate and Ocean, Food from the Ocean, and Healthy and Clean Ocean.

From February 2022, the European Commission and IOC-UNESCO joined forces to support the EU4Ocean Coalition as the European contribution to the initiative from UNESCO 'Ocean Literacy for all'.

The EMB Secretariat was also involved in organising the 'Let's make Europe Blue'¹¹, the EU4Ocean for Ocean Literacy Summit in May 2022, back-to-back with the European Maritime Day in Ravenna, Italy. After more than two years, this event rewarded and celebrated the efforts of its members and their most outstanding initiatives to date and looked forward to the future.

More information about the EU4Ocean Coalition is available here:
www.eu-oceanliteracy.eu



EU4Ocean booth at European Maritime Day, Ravenna, Italy in May 2022.

⁸ <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1483>

⁹ <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1484>

¹⁰ <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1485>

¹¹ <https://webgate.ec.europa.eu/maritimeforum/en/node/6964>

TARGETED INTERVENTIONS



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

UN Ocean Decade of Ocean Science for Sustainable Development

The United Nations Decade of Ocean Science for Sustainable Development¹² runs from 2021-2030. As an Ocean Decade Implementing Partner for Europe, EMB strongly supports this initiative and ensures that its activities support the aims of the Ocean Decade.

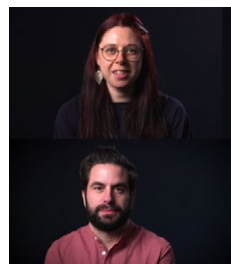
Since becoming an Implementing Partner in December 2021, the EMB Secretariat has dedicated a significant amount of time to different activities in support of the Ocean Decade. The EMB Secretariat closely coordinates with fellow European Implementing Partners as well as the Ocean Decade Unit of IOC through bi-monthly meetings, to ensure complementarity between the different activities.

The EMB Communication Panel (see p. 39) is engaging with the Ocean Decade Communication Advisory Group by discussing communication and engagement issues at their bi-annual meetings and the EMBCP invited the Communication Officer for the Ocean Decade to give a keynote at the CommOCEAN 2022 conference (see p. 18) in December 2022. In addition to these coordination activities, the EMB Secretariat has also undertaken some other activities to support the Ocean Decade, which are listed here.

Respect at Sea Video

Creating an even more inclusive workplace culture is an ongoing priority for marine science institutions worldwide. Given the unique working environment of research ships and the potential to be at sea for weeks or even months, it is essential to promote positive values that instil respect for colleagues.

Under the leadership of EMB Members NOC and NERC (UK) and other international partners, the EMB Secretariat helped to develop the thought-provoking training video 'Respect at Sea', designed to empower Ocean professionals, and to remind them of their responsibility to respect colleagues on Research Vessels (RVs) and promote inclusion. This video will be shown during the pre-embarkation briefing on all UK RVs and is being made available to all other RVs if requested.



The video was endorsed as an Ocean Decade activity and was officially launched in June 2022 at the UN Ocean Conference in Lisbon, Portugal. The Secretariat has disseminated the video widely and continues to promote it where appropriate, including to the attendees of a Eurofleets+ project workshop on 1 December. The Secretariat has also been in conversation with other European and international partners who have ongoing initiatives in this area.

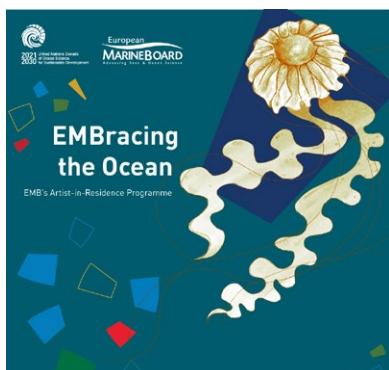
During 2022, the EMB Secretariat translated the subtitles for the video into six different languages, with support from the EMB Members, Young Ambassadors and the Chair of the EMBCP.

The full video is available on YouTube¹³.

¹² <http://www.oceandecade.org/>

¹³ <https://www.youtube.com/watch?v=87vVlr14PP0&t=2s>

EMBracing the Ocean programme



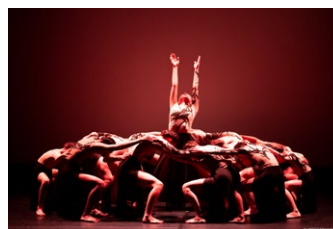
The first call for artists for the 'EMBracing the Ocean' artist-in-residence programme to support the UN Ocean Decade was launched in January 2022. The call targeted artists worldwide from all creative disciplines and asked for proposals for the co-creation of new artwork together with Ocean scientists aiming to raise societal awareness of the Ocean's value and inspiring behavioural change towards sustainability.

Over 70 applications (49% female, 41% male, 4% non-binary and 6% other) were received from artists from all over the world. The EMBracing the Ocean Committee evaluated and selected the awardees based on criteria such as relevance and quality of previous work, quality of provisional ideas, potential for reaching as wide an audience as possible, and potential for raising awareness of the Ocean and for inspiring behavioural change towards sustainability.

Two artists were selected for a residency from April 2023-2024, **Emily Lartillot** and **Michael Begg**, and each were awarded a grant of €10,000. An additional grant of €10,000 was awarded to Ukrainian artist **Lera Litvinova** as support for Ukraine in a time of crisis.

Emily Lartillot: 'Of Roots and Sea'

'Of Roots and Sea' is a dance production that highlights mangroves as a critical yet threatened ecosystem between land and sea. Messages of concern and hope are communicated to the audience by young dancers, raising awareness in an emotive manner. The production was co-created by EMBracing the Ocean artist-in-residence **Emily Lartillot**, French dancer and choreographer (Steps for a Change¹⁴) and **Yunne Shin**, scientist at the French National Research Institute for Sustainable Development (IRD) in France.



The production premiered at University of the Earth, UNESCO, Paris in November 2022. A recording of the performance can be found on the IRD YouTube Channel¹⁵. The project received co-funding from UNESCO, the University of Montpellier's Sea & Coast Initiative¹⁶, IRD project Planet@liment¹⁷, and the Pew Charitable Trusts¹⁸.

Find out more about **Emily's** work on the EMB website:

<https://marineboard.eu/emily-lartillot>

Michael Begg: 'Sounding the Ice Factory'

Michael Begg is a Scottish composer working in collaboration with an international network of climate scientists to transform observational data and model projections from the Antarctic into engaging and immersive musical recordings and performances. His collaborators include **Lukrecia Stulic** (Alfred Wegener Institute for Polar and Marine Research, AWI, Germany), **Yoshihiro Nakayama** (Hokkaido University, Japan) and **Thomas Rackow** (European Centre for Medium Range Weather Forecasts, UK). The work reveals the complexity surrounding this mysterious and vast territory, its fragility and potentially catastrophic tipping points, through the interactions of thermocline depth, salinity, polynya growth, ice coverage and extreme weather fronts. A preview of this work was performed by the Black Glass Ensemble group at the Edinburgh Fringe Festival. Recordings will be released on all major digital music platforms in 2023.

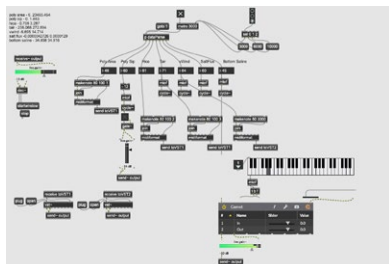
¹⁴ <https://www.stepsforachange.com/>

¹⁵ <https://www.youtube.com/watch?v=9LJC3VGhdZk>

¹⁶ <https://muse.edu.umontpellier.fr/key-initiatives-muse/sea-coast/>

¹⁷ <https://planetaliment.com/>

¹⁸ <https://www.pewtrusts.org/en/>



Michael has also been collaborating with fellow EMBrcing the Ocean artist-in-residence **Lera Litvinova**, to create sound works describing the impact of war on the fragile ecosystem of the Black Sea. For this work **Michael** uses publicly available data, such as from the European Space Agency's Sentinel 3 Ocean monitoring satellite, and audit records of ships passing through the secure trade corridor. This work was broadcasted in a one-hour edition of experimental music radio show, A Duck In A Tree on 17 December 2022.

Find out more about **Michael's** work on the EMB website:

<https://marineboard.eu/michael-begg>

Lera Litvinova: 'Under the Surface'

Under the Surface is a project by Ukrainian artist **Lera Litvinova** highlighting the impact of the war on marine pollution in the Black Sea, and the effect on marine ecosystems and sustainable development.

Lera held an exhibition "Renaissance" at the Museum of Outstanding Figures of Ukrainian culture in Kyiv showcasing her ceramic installations along with information developed together with her scientific collaborators from the Black Sea region. The exhibition raised public awareness of issues affecting the Black Sea and drove conversation around future actions for sustainability. A second exhibition is planned for spring 2023 and will be based on additional scientific information and include paintings, videos, and artefacts from the Black Sea.



Find out more about **Lera's** work on the EMB website:

<https://marineboard.eu/lera-litvinova>

Ocean Decade Newsletter

The EMB Secretariat launched the Ocean Decade newsletter to highlight all EMB Secretariat activities related to the Ocean Decade as an Implementing Partner. The newsletter also highlights the endorsed activities of EMB Members and fellow European Implementing Partners, as well as other relevant news related to the Ocean Decade. The first edition of the newsletter came out in April 2022 and continues to be sent out periodically every 2-3 months. As of January 2023, the full subscription list holds 355 subscribers.

You can subscribe to the EMB Ocean Decade newsletter via the EMB website:

<https://www.marineboard.eu/emb-newsletter>

EU MISSION: RESTORE OUR OCEAN AND WATERS BY 2030

The EU Mission Restore our Ocean & Waters¹⁹ (Mission Ocean) is an initiative of the Horizon Europe Research and Innovation programme for the years 2021-2027 to help achieve the marine and freshwater targets of the European Green Deal. The Mission Ocean Charter collates all voluntary contributions to the Mission Ocean's objectives to help their achievement by 2030.



In September 2022, the EMB Secretariat endorsed the Mission Ocean Charter and pledged actions to support the EU Mission Ocean objectives and enablers, which will contribute to the successful implementation of the Mission. All EMB Secretariat Mission-related activities and events in 2022 are listed here.

EMB publications

EMB highlights the link to the Mission Ocean in all its strategic foresight publications. The Future Science Brief No. 8 on 'Marine Science Communication in Europe: a way forward'²⁰ contributes to the Mission Ocean enabler 'Public mobilisation and engagement'.

EMB events

The ECOP Wednesday edition of September 2022 (see p. 19) on Mission Oriented R&I for a Healthy Ocean²¹ contributed to the Mission Ocean enabler 'Public mobilisation and engagement'.

EMBracing the Ocean projects

All three projects of the artists-in-residence from the EMBracing the Ocean programme (see p. 35) contribute to the Mission Ocean objectives and enablers.

Ukrainian artist **Lera Litvinova's** project 'Under the Surface'²² contributes to all three of the Mission Ocean objectives: 'Protect and restore marine and freshwater ecosystems and biodiversity', 'Prevent and eliminate pollution of our Ocean and waters' and 'Make the sustainable blue economy carbon-neutral and circular', and the 'Public mobilisation and engagement' enabler.

French choreographer **Emily Lartillot's** project 'Of roots and sea'²³ contributes to the Mission Ocean objective to 'Protect and restore marine and freshwater ecosystems and biodiversity' and the 'Public mobilisation and engagement' enabler.

Scottish composer **Michael Begg's** project²⁴ where he creates Antarctic musical compositions contributes to the Mission Ocean enabler 'Public mobilisation and engagement'.

Spring Plenary 2022

During the Spring Plenary in April 2022 (see p. 14), the EMB Secretariat hosted a virtual open session on the Mission Ocean. The session was opened by **Elisabetta Balzi** from the European Commission's DG for Research and Innovation (DG RTD) and also joined by **Sigi Gruber** (Ex-DG RTD) to inspire the EMB Members. Thereafter, the EMB Board discussed the added value of engaging with the Mission and the potential role of EMB and its Members within this initiative. A list of concrete commitments and actions were proposed and the EMB Secretariat will encourage its Members to implement them.

Communication

The EMB Secretariat continues to spread the message of the Mission Ocean widely by highlighting Mission Ocean-related news in the weekly newsletter (see p. 40), and by making all Mission-related activities from the EMB Secretariat and Members available on the EMB website: <https://marineboard.eu/emb-and-eu-mission>.

¹⁹ https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/restore-our-ocean-and-waters_en

²⁰ <https://marineboard.eu/publications/marine-science-communication-europe-way-forward>

²¹ <https://marineboard.eu/events/ecop-wednesdays-mission-oriented-ri-healthy-ocean>

²² <https://marineboard.eu/era-litvinova>

²³ <https://marineboard.eu/emily-lartillot>

²⁴ <https://marineboard.eu/michael-begg>

OCEAN OBSERVING



European
Ocean
Observing
System

Since 2015, EMB and EuroGOOS have been working together to promote and facilitate the establishment of EOOS as a coordinating framework to strengthen coordination of the European Ocean Observing System. Since

September 2017, EMB is also a partner in the implementation of EMODnet, specifically supporting the development of the European Ocean Observing System by promoting Stakeholder Dialogue. Since January 2022, EMB is involved in the EMODnet Phase IV workplan to continue supporting this line of activities (see p. 33).

In 2022, the EMB Secretariat led the revision of the EOOS Strategy for 2023-2027 'Advancing EOOS - the foundation of European Ocean knowledge'. The draft of the revised Strategy was sent to the EOOS governance bodies for consultation during the summer and finalised at end of 2022. EuroGOOS led the development of the EOOS Roadmap for Implementation for 2023-2027. Both documents will be launched in a dedicated event in early 2023.

In addition, the EMB continues to facilitate regular exchanges between the GOOS BioEcoPanel, GEO-BON MBON and G7 FSOI Secretariats, in line with the recommendations from the EMB Future Science Brief No. 3 on 'Strengthening Europe's Capability in Biological Ocean Observations'.

The EOOS Technology Forum took place in March 2022, supported by the EuroSea project (see p. 30). The EOOS Technology Forum, titled 'Thinking Ahead: The Technology of the Science We Will Need for the Ocean We Want' was a forward-looking workshop on the technologies required to fulfil the goals of the Ocean Decade. The EMB Secretariat was part of the organising committee.

More information is available on the EMB website and EOOS website:

<https://marineboard.eu/eoos-european-ocean-observing-system>

<https://www.eoos-ocean.eu/>

EMB panels

EUROPEAN MARINE BOARD COMMUNICATION PANEL

The EMB Communication Panel (EMBCP) provides a pan-European platform for marine science communicators to promote EMB activities, to synergise outreach activities, and to advocate Ocean Literacy. In 2022, 19 Members from 14 countries were part of EMBCP.

In 2022, the main activity of the EMBCP was the launch of the Future Science Brief No. 8 on 'Marine Science Communication in Europe: a way forward' in a dedicated webinar²⁵. This Future Science Brief highlights the critical need to strengthen the marine science communication capacity in Europe, as well as develop dedicated training programmes, engage in deeper and wider collaboration with stakeholders, and ensure close interaction with the UN Decade of Ocean Science for Sustainable Development (2021-2030) and the EU Mission: Restore our Ocean and Waters by 2030.

Another important activity of the EMBCP during 2022 was the successful organisation of the CommoOCEAN 2022 conference (see p. 18). CommoOCEAN 2022 provided training and sharing of communication skills and inspiration to communicators across a range of experience levels. These conferences are organised every two years, and the EMBCP has already started working on its next edition in 2024.

The EMBCP met twice in 2022: online in April and in-person in Sète, France, right after the CommoOCEAN 2022 conference.



EMBCP Members during the in-person meeting in Sète, France.

You can find out more about this Panel on the EMB website:

<https://www.marineboard.eu/embcp>

UNIVERSITY CONSORTIUM PANEL

The EMB University Consortium Panel (UCP) was established in 2016 to provide a platform for the EMB University Consortium Members to exchange ideas and collaborate, as well as to have a stronger voice at EMB Board level. In 2022, instigated by the departure of Panel Chair **Jeremy Gault**, ExCom Vice-Chair, it was decided that the Panel had run its natural course and agreed to withdraw Secretariat support from the Panel. The Panel has not been officially disbanded, and its members are free to continue bilateral or panel-wide activities as required. The EMB Secretariat will ensure that the voice of academia and University Consortium Members remains heard at Board level through alternative means.

²⁵ <https://www.marineboard.eu/events/webinar-marine-science-communication-europe-way-forward>

Communication and outreach

The EMB uses a variety of channels to reach its stakeholders, including disseminating publications at conferences, media campaigns for EMB events, and online outlets including Twitter, Facebook, LinkedIn, Instagram, YouTube, newsletters, and the EMB website.

EMB website

The EMB website is regularly updated with information on the expert Working Groups, EMB strategic areas and activities, and the EU projects that EMB Secretariat is involved in. All EMB's publications are available to download from the website free of charge.

In 2022, the website was visited 46,060 times, with visitors from 186 countries. There were 6,631 downloads of EMB documents from the EMB website, of which the top five were: Future Science Brief No. 8 on 'Marine Science Communication in Europe', Future Science Brief No. 7 on 'Underwater Noise', Position Paper No. 26 on 'Marine Geohazards', Position Paper No. 24 'Navigating the Future V' and Position Paper No. 25 on 'Research Vessels'.

EMB newsletter

At the end of 2022 the full stakeholder list contains of 1,739 subscribers, of which 603 are subscribed to the Message to the Board, EMB's weekly newsletter providing updates on the EMB Secretariat activities, as well as other events, news and job postings. You can subscribe to the EMB newsletter via the EMB website: <https://www.marineboard.eu/emb-newsletter>.

Twitter

The European Marine Board Twitter account (@EMarineBoard) continued to grow in 2022 with another 1,000 new followers, leading to a total number of 9,466 followers as of January 2023. The Twitter account is used to announce and promote EMB activities, and to highlight relevant news and events from the marine science and policy communities.

The Twitter account is also successfully used to communicate with other networks and individual stakeholders. The account has allowed the EMB Secretariat to instantly update Member organisations and stakeholders on the events the Secretariat are attending.



Instagram

The EMB Instagram account (@emarineboard) was mainly set up to reach the marine science youth community and has 840 followers as of January 2023. EMB Young Ambassador Alumni, **Alba González Vega**, initiated the account in 2019 and the Secretariat has since posted regularly on EMB activities and initiatives as well as marine science in general to increase visibility of EMB and enhance Ocean literacy.

YouTube

Where possible, all EMB events (i.e. Science webinars, Open Forum) are live-streamed and available for re-play on the EMB YouTube Channel, along with various other outputs. The EMB YouTube channel continues to grow significantly, totalling to 411 subscribers (December 2022), and the number of views tripled over the last year, with a total of 9,645 views as of December 2022. To increase the reach and make the channel more inclusive, the Secretariat have made English subtitles available for all the videos and will continue to do so.

Follow EMB on YouTube here: <https://www.youtube.com/@europeanmarineboard9043>

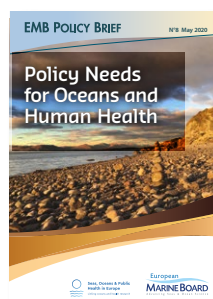
IMPACT FROM EMB PUBLICATIONS

The EMB Secretariat tracks the dissemination and impact of its documents for a period of at least two years after publication. The highlights are presented in a two-page infographic with easily accessible statistics. Below is an overview of the impact reports that were published in 2022.



Big Data in Marine Science

The Future Science Brief No. 6 on 'Big Data in Marine Science' was launched in April 2020 and has since been widely cited in the scientific literature (16 citations) and referred to in BANOS SRIA 2021²⁶. The recommendations from the document were also reflected in the Horizon Europe call for a European Digital Twin of the Ocean and other related calls. The infographics within the document have been used widely on social media to communicate main messages and have also been used in university teaching materials. The document served as inspiration for the 7th EMB Forum, and was promoted at various other science and policy events including the European Space Agency's Digital Twin Ocean workshop (October 2020), the Integrated Carbon Observing System conference (September 2020), the International Council for the Exploration of the Sea's WGMLEARN meeting (April 2021), and the Virtual Early Career Ocean Professionals day panel discussion on "Why do we need FAIR data to reach our Ocean goals" led by EMB Alumni **Natalija Dunić**.



Policy Needs for Oceans and Human Health and SOPHIE Project Strategic Research Agenda for Oceans and Human Health

The Strategic Research Agenda (SRA) for Oceans and Human Health (OHH) was one of the main outputs of the Horizon 2020 project Seas, Oceans and Public Health in Europe (SOPHIE) which finished in May 2020. The EMB Policy Brief summarises the main policy-relevant messages of the SRA and other SOPHIE project outputs. The documents and the recommended research themes have already influenced research programmes in Europe and Internationally. Dedicated visuals, figures, cartoons, and other communications materials were created for both documents, and have been highly praised. They have also ensured that the concepts are clearer to audiences new to OHH and have been widely shared. The documents are notable for their high numbers of citation (22) and events presenting their main messages (37).

For the full impact reports, consult: <https://www.marineboard.eu/publications/impact-reports>

²⁶ <https://www.banoscsa.org/>



Finances

The EMB annual budget is based on Member organisation contributions and external contracts, e.g. EU framework projects. The Flemish Government of Belgium, through the Flanders Marine Institute (VLIZ), provides an in-kind contribution to the EMB through the provision of office space, running costs and equipment at the InnovOcean campus in Ostend, as well as the employment cost of one Secretariat staff member. Member organisations also provide in-kind contribution through support for participation of national experts in EMB activities, i.e. travel and subsistence to attend meetings.

AVAILABLE FUNDS 2022

	EUR
Member Contributions	434,000
FP drawdown on employment costs Staff time related to the external projects	151,398
Other income	685
In-kind contribution from Flemish Government through the Flanders Marine Institute (VLIZ)	109,139
Total available funds	695,222

EXPENDITURE 2022

	EUR
Secretariat Employment costs	374,164
Meetings, Travel & Ambassador Programme	34,057
Project costs (Staff time & direct costs)	83,517
Artist-in-residence Programme	30,000
Publications & dissemination	28,167
Running expenses and other costs	39,594
Costs covered by the Flanders Marine Institute (VLIZ)	109,139
Total expenditure	698,638

RESERVE FUND

	EUR
Available funds 2022	695,222
Expenditure 2022	698,638
Total 2022 balance	-3,416
2021 carry over	632,765
Total	629,349

Annexes

ANNEX 1:

Marine Board Member Organisations, Delegates and Alternates

BELGIUM

Belgian Science Policy Office (BELSPO)
Koen Lefever

Fonds National de la Recherche Scientifique (FNRS)
National Fund for Scientific Research
Marilaure Grégoire

Fonds voor Wetenschappelijk Onderzoek -
Vlaanderen (FWO)
The Research Foundation - Flanders
Jan Mees
Tina Mertens

CROATIA

Institut za oceanografiju i ribarstvo (IZOR)
Institute of Oceanography and Fisheries
Melita Peharda Uljevic
Daria Ezgeta-Balić

Institut Ruđer Bošković (IRB)
Ruđer Bošković Institute
Martin Andreas Pfannkuchen (Vice-Chair)
Ivica Vilibić

DENMARK

Institut for Akvatiske Ressourcer (DTU Aqua)
National Institute for Aquatic Resources
Patrizio Mariani
Kirsten Thomsen

ESTONIA

Eesti Teaduste Akadeemia
Estonian Academy of Sciences
Tarmo Soomere
Kalle Olli

FRANCE

Centre National de la Recherche Scientifique
(CNRS)
National Centre for Scientific Research
Jean-Marie Flaud
Jean-François Doussin

Institut Français de Recherche pour l'Exploitation
de la Mer (IFREMER)
French Research Institute for Exploitation of the Sea
Gilles Lericolais (Chair)
Natalia Martin Palenzuela

Universités Marines
Marine Universities of France
François Lallie (Vice-Chair)
Yves-Marie Paulet

GERMANY

Konsortium Deutsche Meeresforschung (KDM)
German Marine Research Institute
Jan-Stefan Fritz
Ralph Schneider

Helmholtz-Zentrum für Ozeanforschung Kiel
(GEOMAR)
Helmholtz Centre for Ocean Research Kiel
Katja Matthes
Alexandra Drossou Berendes

GREECE

Ελληνικό Κέντρο Θαλάσσιων Ερευνών (HCMR)
Hellenic Centre for Marine Research
Aris Karageorgis
George Petihakis

IRELAND

Marine Institute
Fiona Grant (Vice-Chair)
Niall McDonough

Irish Marine Universities Consortium
Cathal O'Mahony
Anthony Grehan
Colin Brown

ITALY

Consiglio Nazionale delle Ricerche (CNR)
National Research Council
Fabio Trincardi
Katrin Schroeder (Vice-Chair)

Istituto Nazionale di Oceanografia e di Geofisica
Sperimentale (OGS)
National Institute of Oceanography and Applied
Geophysics
Cosimo Solidoro

Consorzio Nazionale Interuniversitario per le
Scienze del Mare (CoNISMa)
National Inter-University Consortium for Marine
Sciences
Salvatrice Vizzini
Giorgio Budillon

Stazione Zoologica Anton Dohrn (SZN)

Anton Dohrn Marine Station

Chris Bowler

Adriana Zingone

THE NETHERLANDS

Koninklijk Nederlands Instituut voor Onderzoek der Zee (NIOZ)

Royal Netherlands Institute for Sea Research

Han Dolman

Gert-Jan Reichart

Deltares

Myra van der Meulen

Sharon Tatman

NORWAY

Havforskningsinstituttet

Institute of Marine Research (IMR)

Henning Wehde

Karin Kroon Boxaspen

Norges forskningsrad

The Research Council of Norway (RCN)

Kjersti T. Fjalestad

Christian Wexels Riser

Norsk Marint Universitetskonsortium

Norwegian Marine University Consortium (NMU)

Nils Christian Stenseth

Øyvind Fiksen

POLAND

Instytut Oceanologii Polskiej Akademii Nauk (IO-PAN)

Institute of Oceanology of the Polish Academy of Sciences

Sławomir Sagan

Monika Kedra

PORTUGAL

Centro de Investigação Marinha e Ambiental (CIMAR)

Centre of Marine and Environmental Research

Joana Xavier

Adelino Canario

Fundaç o para a Ci ncia e a Tecnologia (FCT)

Foundation for Science and Technology

Sofia Cordeiro

Teresa Courinha

ROMANIA

Romanian Black Sea Research Consortium (RBRC)

Elena Stoica

SPAIN

Instituto Espanol de Oceanografia (IEO)

Spanish Institute of Oceanography

María del Carmen García Martínez

Marcos Llope

Centro Tecnol gico del Mar (CETMAR)

Technological Center of the Sea

Rosa Fern ndez Otero (Vice-Chair)

SWEDEN

G teborgs universitet

University of Gothenburg (UGOT)

Per  berg

Lena Gipperth

TURKEY

T rkiye Bilimsel ve Teknik Arastirma Kurumu (T BİTAK)

Scientific and Technological Research Council of Turkey

Leyla Tolun

UNITED KINGDOM

Marine Alliance for Science and Technology

Scotland (MASTS)

Mark James

David Paterson

National Oceanography Centre (NOC)

Edward Hill

Natural Environment Research Council (NERC)

Mike Webb

Alan Evans (Vice-Chair)

ANNEX 2:

Participants of EMB Plenary meetings 2022

Spring Plenary Meeting | 27-28 April 2022, Online

EMB DELEGATES

Representative	Member organisation
ADRIANA ZINGONE	Anton Dohrn Marine Station (SZN)
ALAN EVANS	Natural Environment Research Council (NERC)
ALEXANDRA DROSSOU-BERENDES	Helmholtz Centre for Ocean Research Kiel (GEOMAR)
AMUND MAAGE	Norwegian Marine University Consortium (NMU)
ANNE FJELLBIRKELAND	Norwegian Marine University Consortium (NMU)
ANN-KATRIEN LESCRAUWAET	Research Foundation - Flanders (FWO)
ARIS KARAGEORGIS	Hellenic Centre for Marine Research (HCMR)
CARLOS GARCIA-SOTO	Spanish Institute of Oceanography (IEO)
CHRISTIAN RIISAGER-SIMONSEN	National Institute for Aquatic Resources (DTU AQUA)
DANIELA HENKEL	German Marine Research Consortium (KDM)
DOMINIQUE SIMON	Marine Universities Consortium France (UM)
EDWARD HILL	National Oceanography Centre (NOC)
ELENA STOICA	Romanian Black Sea Research Consortium (RBRC)
FERDINANDO BOERO	National Inter-University Consortium for Marine Sciences (CoNISMa)
FIONA GRANT	Marine Institute (MI)
FIONA REGAN	Irish Marine Universities Consortium (IMUC)
FRANÇOIS LALLIER	Marine Universities Consortium France (UM)
GEORGE PETIHAKIS	Hellenic Centre for Marine Research (HCMR)
GERT-JAN REICHART	Royal Netherlands Institute for Sea Research (NIOZ)
GILLES LERICOLAIS	French Institute for the Exploitation of the Sea (IFREMER)
JAN MEES	Research Foundation - Flanders (FWO)
JEAN-FRANÇOIS DOUSSIN	National Centre for Scientific Research (CNRS)
JEAN-MARIE FLAUD	National Centre for Scientific Research (CNRS)
JEREMY GAULT	Irish Marine Universities Consortium (IMUC)
KATRIN SCHROEDER	National Research Council Italy (CNR)
KJERSTI FJALESTAD	The Research Council of Norway (RCN)
KOEN LEFEVER	Belgian Science Policy Office (BELSPO)
LENA GIPPERTH	University of Gothenburg (UGOT)
LEYLA TOLUN	Scientific and Technological Research Council of Turkey (TÜBİTAK)
MARIA CARMEN GARCÍA MARTINEZ	Spanish Institute of Oceanography (IEO)
MARK JAMES	Marine Alliance for Science and Technology Scotland (MASTS)
MARTIN ANDREAS PFANNKUCHEN	Ruđer Bošković Institute (IRB)
MELITA PERHARDA ULJEVIC	Institute of Oceanography and Fisheries (IOF)
MONIKA KEDRA	Institute of Oceanology of the Polish Academy of Sciences (IO-PAN)
NATALIA MARTIN PALENZUELA	French Institute for the Exploitation of the Sea (IFREMER)
NILS CHRISTIAN STENSETH	Norwegian Marine University Consortium (NMU)
ØYVIND FIKSEN	Norwegian Marine University Consortium (NMU)
PATRIZIO MARIANI	National Institute for Aquatic Resources (DTU AQUA)
PER ABERG	University of Gothenburg (UGOT)
RALPH SCHNEIDER	German Marine Research Consortium (KDM)
ROBERTO DANOVARO	Anton Dohrn Marine Station (SZN)
ROSA FERNÁNDEZ	Technological Centre of The Sea (CETMAR)
SLAWOMIR SAGAN	Institute of Oceanology of the Polish Academy of Sciences (IO-PAN)
SOFIA CORDEIRO	Science and Technology Foundation (FCT)
TARMO SOOMERE	Estonian Academy of Sciences (ETA)

OBSERVERS, SPEAKERS AND GUESTS

Representative	Organisation
ALFREDO SANTIAGO GARCÍA DE VINUESA	EMB Young Ambassador
JULIETTE BIQUET	EMB Young Ambassador
REBECCA ZITOUN	EMB Young Ambassador
ANJALI GOPAKUMAR	EMB Young Ambassador
MICHAEL BEGG	EMB Artist-in-residence 2022 - 2023
EMILY LARTILLOT	EMB Artist-in-residence 2022 - 2023
YUNNE-JAN SHIN	EMB Artist-in-residence 2022 – 2023 (Scientific collaborator)
LERA LITVINOVA	EMB Artist-in-residence 2022 - 2023
METTE MILA	EMBracing the Ocean Committee
CHRIS FREEMANTLE	EMBracing the Ocean Committee
ANDY KONTOUDAKI	DG MARE
ELISABETTA BALZI	DG RTD
SIGI GRUBER	DG RTD
VALENTINA BALCAN	EC Blue Bag Intern
ALISON CLAUSEN	IOC-UNESCO
ADRIAN STANICA	GeoEcoMar
SARAH DE RIJCKE	University of Leiden / Fluid Knowledge project
THORSTEN KIEFER	JPI Oceans

Autumn Plenary Meeting | 26-27 October 2022, Ostend, Belgium and Online

EMB DELEGATES

Representative	Member organisation
ADRIANA ZINGONE	Anton Dohrn Marine Station (SZN)
ALEXANDRA DROSSOU-BERENDES	Helmholtz Centre for Ocean Research Kiel (GEOMAR)
ANNE FJELLBIRKELAND	Norwegian Marine University Consortium (NMU)
ARIS KARAGEORGIS	Hellenic Centre for Marine Research (HCMR)
CATHAL O'MAHONEY	Irish Marine Universities Consortium (IMUC)
COSIMO SOLIDORO	National Institute of Oceanography and Experimental Geophysics (OGS)
DOMINIQUE SIMON	Marine Universities Consortium France (UM)
EDWARD HILL	National Oceanography Centre (NOC)
ELENA STOICA	Romanian Black Sea Research Consortium (RBRC)
FIONA GRANT	Marine Institute (MI)
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GILLES LERICOLAIS	French Institute for the Exploitation of the Sea (IFREMER)
JAN MEES	Research Foundation - Flanders (FWO)
JAN-STEFAN FRITZ	German Marine Research Consortium (KDM)
JEAN-MARIE FLAUD	National Centre for Scientific Research (CNRS)
JOANA XAVIER	Centre of Marine and Environmental Research (CIMAR)
KATRIN SCHROEDER	National Research Council Italy (CNR)
KJERSTI FJALESTAD	The Research Council of Norway (RCN)
KOEN LEFEVER	Belgian Science Policy Office (BELSPO)
LEYLA TOLUN	Scientific and Technological Research Council of Turkey (TÜBİTAK)
MARIA CARMEN GARCÍA MARTINEZ	Spanish Institute of Oceanography (IEO)
MARILAURE GRÉGOIRE	National Fund for Scientific Research (FNRS)
MELITA PERHARDA ULJEVIC	Institute of Oceanography and Fisheries (IOF)
MYRA VAN DER MEULEN	DELTA RES
NATALIA MARTIN PALENZUELA	French Institute for the Exploitation of the Sea (IFREMER)
NILS CHRISTIAN STENSETH	Norwegian Marine University Consortium (NMU)
ØYVIND FIKSEN	Norwegian Marine University Consortium (NMU)
PATRIZIO MARIANI	National Institute for Aquatic Resources (DTU AQUA)
PER ABERG	University of Gothenburg (UGOT)
RALPH SCHNEIDER	German Marine Research Consortium (KDM)
ROSA FERNÁNDEZ	Technological Centre of The Sea (CETMAR)
SLAWOMIR SAGAN	Institute of Oceanology of the Polish Academy of Sciences (IO-PAN)
SOFIA CORDEIRO	Science and Technology Foundation (FCT)
YVES-MARIE PAULET	Marine Universities Consortium France (UM)

OBSERVERS, SPEAKERS AND GUESTS

Representative	Organisation
ALFREDO SANTIAGO GARCÍA DE VINUESA	EMB Young Ambassador
JULIETTE BIQUET	EMB Young Ambassador
REBECCA ZITOUN	EMB Young Ambassador
GRIET NEUKERMANS	University of Ghent
HANS-OTTO PÖRTNER	Alfred Wegener Institute Helmholtz Centre
NATALIE HICKS	University of Essex
JAN SEYS	Flanders Marine Institute (VLIZ)
PETER LANDSCHÜTZER	Flanders Marine Institute (VLIZ)
HENRIK ENEVOLDSEN	IOC-UNESCO
SARAH DE RIJCKE	University of Leiden / Fluid Knowledge project
THORSTEN KIEFER	JPI Oceans

ANNEX 3: WORKING GROUP MEMBERS 2022

Working Group Coastal Resilience

Working Group Members:

- Sebastian Villasante, University of Santiago de Compostella, Spain – WG Chair
- Kristin Richter, Norwegian Research Centre AS (NORCE), Norway – WG Co-Chair
- Andres Payo, British Geological Survey, UK
- Donata Melaku Canu, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Eugene Farrell, National University Ireland Galway, Ireland
- Frederic Bouchette, University of Montpellier, France
- Isabel Sousa Pinto, University of Porto, Portugal
- Jennifer Bailey, Norwegian University of Science and Technology (NTNU), Norway
- Karen Timmermann, National Institute for Aquatic Resources (DTU Aqua), Denmark
- Margaret Chen, University of Brussels (VUB), Belgium
- Remi Mongruel, French Research Institute for the Exploration of the Sea (IFREMER), France
- Thorsten Blenckner, Stockholm Resilience Centre, Sweden
- Tjeerd Bouma, Royal Netherlands Institute for Sea Research (NIOZ), The Netherlands
- Liam Lachs, Newcastle University, UK and EMB Alumni

EMB Secretariat Support:

Britt Alexander

Working Group Marine Renewable Energy

Working Group Members:

- Takvor Soukissian, Hellenic Centre for Marine Research (HCMR), Greece – WG Chair
- Anne Marie O'Hagan, UCC, Ireland – WG Co-Chair
- Arianna Azzellino, Polytechnic University of Milan, Italy
- Ferdinando Boero, University of Naples, Italy
- Ana Brito e Melo, WavEC, Portugal
- Patricia Comiskey, Simply Blue Group, Ireland
- Zhen Gao, Norwegian University of Science and Technology, Norway
- Dickon Howell, Howell Marine Consulting, UK
- Marc Le Boulluec, French Research Institute for the Exploration of the Sea (IFREMER), France
- Christophe Maisondieu, French Research Institute for the Exploration of the Sea (IFREMER), France
- Beth Scott, University of Aberdeen, UK
- Elisabetta Tedeschi, Norwegian University of Science and Technology (NTNU), Norway and University of Trento, Italy

EMB Secretariat Support:

Paula Kellett

Working Group Marine Habitat Mapping

Working Group Members:

- Simonetta Fraschetti, University of Naples Federico II and Anton Dohrn Marine Station (SZN), Italy – WG Chair
- James Strong, National Oceanography Centre (NOC), UK – WG Co-Chair
- Eimear O’Keeffe, Marine Institute (MI), Ireland
- Maria Salomidi, Hellenic Centre for Marine Research (HCMR), Greece
- Timm Schoening, Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany
- Federica Fogliani, Institute of Marine Science (CNR-ISMAR), Italy
- Helen Lillis, Joint Nature Conservation Committee (JNCC), UK
- Jorge Goncalves, Centre of Marine Sciences of the Algarve (CCMAR), Portugal
- Georg Martin, Estonian Marine Institute, University of Tartu, Estonia
- Mats Lindegarth, University of Gothenburg (UGOT), Sweden
- Lene Buhl Mortensen, Institute of Marine Research (IMR), Norway
- Lenaick Menot, French Research Institute for the Exploration of the Sea (IFREMER), France
- José Manuel González-Irusta, Spanish Institute of Oceanography (IEO), Spain
- António Pascoal, Instituto Superior Técnico (IST), Portugal

EMB Secretariat Support:

Britt Alexander

Working Group Ocean Oxygen

Working Group Members:

- Marilaure Grégoire, University of Liège, Belgium– WG Chair
- Andreas Oschlies, Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany– WG Co-Chair
- Donald Canfield, University of Southern Denmark, Denmark
- Carmen Castro, Marine Research Institute (IIM - CSIC), Spain
- Irena Ciglenečki-Jušić, Ruđer Bošković Institute (IRB), Croatia
- Peter Croot, NUI Galway, Ireland
- Karine Salin, French Research Institute for the Exploration of the Sea (IFREMER), UMR LEMAR, France
- Birgit Schneider, University of Kiel, Germany
- Pablo Serret, Marine Research Centre, University of Vigo, Spain
- Caroline Slomp, University of Radboud, Netherlands
- Tommaso Tesi, Institute of Polar Sciences, National Research Council Italy (RCN), Italy
- Mustafa Yucel, Institute of Marine Sciences, Middle East Technical University, Turkey

EMB Secretariat Support:

Ana Rodriguez

Working Group Navigating the Future VI

Working Group Members:

- Gilles Lericolais, EMB Chair and French Research Institute for the Exploration of the Sea (IFREMER), France – WG Chair
- Sheila Heymans, Executive Director, European Marine Board – WG Co-Chair
- Francesco Marcello Falcieri, National Research Council Italy (CNR), Italy
- Juliette Biquet, Centre of Marine Sciences, Portugal, and EMB Young Ambassador
- Nicola Beaumont, Plymouth Marine Laboratory, UK (UK Natural Environment Research Council)
- Silja Klepp, Kiel University, Germany (German Marine Research Consortium)
- Lucía López-López, Spanish Institute of Oceanography (IEO), Spain
- David Lusseau, Technical University of Denmark, Denmark
- Ekaterina Popova, National Oceanography Centre (NOC), UK
- Baris Salihoglu, Middle Eastern Technical University, Turkey (Scientific and Technological Research Council of Turkey)
- Olivier Thébaud, French Research Institute for Exploitation of the Sea (IFREMER), France
- Katrin Schroeder, National Research Council Italy (CNR), Italy
- Fiona Grant, Marine Institute (MI), Ireland
- Joke Lübbecke, Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany
- Ruth Plets, Flanders Marine Institute (VLIZ), Belgium (Research Foundation - Flanders)
- Jean-Baptiste Sallée, National Centre for Scientific Research (CNRS), France
- Tarmo Soomere, Tartu Technical University, Estonia (Estonian Academy of Sciences)
- Nuria Teixido, Anton Dohrn Marine Station (SZN), Italy
- Ivica Vilibić, Ruđer Bošković Institute (IRB), Croatia
- Renske de Winter, Deltares, Netherlands
- Peter Kraal, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands
- Tainá Fonseca, University of Algarve, Portugal (Portuguese Science and Technology Foundation)
- Christine Edwards, Robert Gordon University, UK (Marine Alliance for Science and Technology for Scotland)
- Joao Frias, Atlantic Technological University, Ireland (Irish Marine Universities Consortium)
- Slavica Matijević, Institute of Oceanography and Fisheries (IOF), Croatia
- Cosimo Solidoro, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Beata Szymczycha, Institute of Oceanology of the Polish Academy of Sciences (IO-PAN), Poland
- Carlos Pereira Dopazo, University of Santiago de Compostela, Spain (Galician Marine Technology Centre)
- Kerstin Johannesson, University of Gothenburg (UGOT), Sweden
- Julia Calderwood, Marine Institut (MI), Ireland
- Antonia Giannakourou, Hellenic Centre for Marine Research (HCMR), Greece
- Enrique Blanco Gonzalez, University of Agder, Norway (Norwegian Marine University Consortium)
- Christophe Lejeusne, University of Aix-Marseille, France (Marine Universities of France)
- Loïc Michel, University of Liège, Belgium (Walloon Fund for Scientific Research)
- Geir Ottersen, Institute of Marine Research (IMR), Norway

EMB Secretariat Support:

Paula Kellett, Ángel Muñoz Piniella, Britt Alexander, Ana Rodriguez

ANNEX 4: Panel Members 2022

European Marine Board Communication Panel (EMBCP)

Panel Members:

- M. Carmen García Martínez, Spanish Institute of Oceanography (IEO), Spain - Panel Chair
- Jess Allen, National Oceanography Centre (NOC), United Kingdom
- Sheila Byrnes, Marine Institute (MI), Ireland
- Daria Ezgeta Balic, Institute of Oceanography and Fisheries (IOF), Croatia
- Francesca Garaventa, National Research Council Italy, Institute of Marine Research (IAS, CNR), Italy
- Claudia Gili, Anton Dohrn Marine Station (SZN), Italy
- Kathrin Kopke, University College Cork (UCC), Ireland
- Alexis Mareschi, French Institute for the Exploitation of the Sea (IFREMER), France
- Kelle Moreau, Royal Belgian Institute of Natural Sciences (RBINS), Belgium
- Mette Mila, The Research Council of Norway (RCN), Norway
- Maike Nicolai, Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany
- Francesca Petrerà, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Kim Sauter & Aaike van Oord, Royal Netherlands Institute for Sea Research (NIOZ), The Netherlands
- Ezgi Sahin Yucel, Institute of Marine Sciences, Middle East Technical University (METU), Türkiye
- Jan Seys, Flanders Marine Institute (VLIZ), Belgium
- Dominique Simon, Marine Universities Consortium France (UM), France
- José Teixeira, Centre of Marine and Environmental Research (CIMAR), Portugal
- Hans Wilhelm Weinberger, Norwegian Marine University Consortium (NMU), Norway
- Tymon Zielinski, Institute of Oceanology of The Polish Academy of Sciences (IO-PAN), Poland

EMB Secretariat Support:

Ángel Muñoz Piniella

University Consortium Panel

Panel Members:

- Jeremy Gault, Irish Marine Universities Consortium (IMUC), Ireland - Panel Chair
- Mark James, Marine Alliance for Science and Technology for Scotland (MASTS), United Kingdom
- Yves-Marie Paulet, Marine Universities Consortium France (UM), France
- Dominique Simon, Marine Universities Consortium France (UM), France
- François Lallier, Marine Universities Consortium France (UM), France
- Lisandro Benedetti-Cecchi, National Inter-University Consortium for Marine Sciences (CoNISMa), Italy
- Ferdinando Boero, National Inter-University Consortium for Marine Sciences (CoNISMa), Italy
- Anthony Grehan, Irish Marine Universities Consortium (IMUC), Ireland
- Louise Allcock, Irish Marine Universities Consortium (IMUC), Ireland
- Carlos Pereira, Technological Centre of the Sea (CETMAR), Spain
- Daniel Rey, Technological Centre of the Sea (CETMAR), Spain
- Sonia Zaragoza, Technological Centre of the Sea (CETMAR), Spain
- Anne Fjellbirkeland, Norwegian Marine University Consortium (NMU), Norway
- Lena Gipperth, University of Gothenburg (UGOT), Sweden
- Elena Stoica, Romanian Black Sea Research Consortium (RBRC), Romania
- Ralph Schneider, German Marine Research Consortium (KDM), Germany

EMB Secretariat Support:

Paula Kellett

ANNEX 5: MEETINGS AND EVENTS (JOINTLY) ORGANISED IN 2022

Date	Event and Venue
07/01/2022	EMBracing the Ocean Committee Meeting, Online
19/01/2022	Meeting with Sigi Gruber on The Mission, Online
20/01/2022	EMBCP Steering Group Meeting, Online
02/02/2022	EMB Working Group Renewable Energy Meeting, Online
03/02/2022	EOOS Bio Obs exchange Meeting, Online
07/02/2022	EMBracing the Ocean Committee Meeting, Online
08/02/2022	EMB ExCom Meeting, Online
08/02/2022	Discuss models + MSP Challenge in workshop, Online
14/02/2022	EMB Young Ambassador Meeting, Online
16/02/2022	EcoScope Workshop, Online
17/02/2022	EMB Third Thursday Science Webinar: Ocean and Human Health, Online
18/02/2022	EMB Working Group Coastal Resilience Meeting, Online
21/02/2022	EMB Working Group Coastal Resilience Meeting, Online
22/02/2022	EMBracing the Ocean Committee Meeting, Online
28/02/2022	Ocean Decade Implementing Partners Meeting with JPI Oceans, Online
09/03/2022	EMBracing the Ocean Committee Meeting, Online
10/03/2022	EMB Working Group Coastal Resilience Meeting, Online
17/03/2022	EMBracing the Ocean Committee Meeting, Online
17/03/2022	EMB Third Thursday Science Webinar: Decommissioning, Online
18/03/2022	EMBCP Spring Meeting, Online
18/03/2022	EMB Working Group Coastal Resilience Meeting, Online
21/03/2022	EMB Young Ambassador Meeting, Online
24/03/2022	EMBCP Steering Group Meeting, Online
25/03/2022	EOOS Bio Obs exchange Meeting, Online
30/03/2022	EMB ECOP Network First event, Online
06/04/2022	UCP Meeting Pre-Spring Plenary 2022, Online
07 – 08/04/2022	Habitat Mapping Working Group Kick-off Meeting, Naples, Italy
11/04/2022	Meeting with EBCD, Online
20/04/2022	EMB Working Group Marine Renewable Energy Chairs Meeting, Online
20/04/2022	EMB Working Group Coastal Resilience Meeting, Online
21/04/2022	EMB Third Thursday Science Webinar: Can early career scientists make a difference in achieving the Ocean we want? - Experiences from the EMB Young Ambassadors, Online
25/04/2022	EMB Young Ambassador Meeting, Online
26/04/2022	Ecopath Webinar Series: Bob Ulanowicz, Online
26/04/2022	EMB ExCom Meeting, Online
27 – 28/04/2022	EMB Spring Plenary Meeting, Online

Date	Event and Venue
03/05/2022	EMB Working Group Marine Renewable Energy Meeting, Online
03/05/2022	EMB Working Group Ocean Oxygen Meeting, Online
05/05/2022	Ocean Decade Implementing Partners Meeting with JPI Oceans, Online
11/05/2022	EMB Working Group Marine Habitat Meeting, Online
13/05/2022	EMB Working Group Marine Renewable Energy Chairs Meeting, Online
17/05/2022	EMB Young Ambassador meeting, Online
17/05/2022	EMB Working Group Marine Habitat Chairs Meeting, Online
19/05/2022	EMB Third Thursday Science Webinar: Critical research needs for informing environmental management of deep-sea mining, Online
19/05/2022	EMB Working Group Coastal Resilience Chairs Meeting, Online
19 – 20/05/2022	European Maritime Day 2022, Ravenna, Italy
20/05/2022	EMB Working Group Coastal Resilience Meeting, Online
24/05/2022	EMBracing the Ocean Meeting, Online
25/05/2022	EMB Working Group Coastal Resilience Chairs Meeting, Online
25/05/2022	EMBCP Steering Group Meeting, Online
01/06/2022	EMB Working Group Coastal Resilience Chairs Meeting, Online
13/06/2022	Brown Bag Lunch No. 5 on Offshore Groundwater, Brussels, Belgium
15/06/2022	EMB Working Group Marine Habitat Meeting, Online
16/06/2022	EMB Third Thursday Science Webinar: New developments in research vessel capabilities and technology, Online
21/06/2022	EMB Ambassadors and EU4Ocean/Youth4Ocean Meeting, Online
21 – 22/06/2022	EMB Working Group Ocean Oxygen Kick-off Meeting, Ostend, Belgium
22/06/2022	EMB Young Ambassadors Meeting, Online
23/06/2022	Ocean Decade Implementing Partners Meeting with JPI Oceans, Online
27/06 – 1/07/2022	UN Ocean Conference, Lisbon, Portugal
29/06/2022	EMB Working Group Coastal Resilience Meeting, Online
06/07/2022	EMBCP Steering Group Meeting, Online
06/07/2022	ECOP Wednesdays: Getting to know the European marine science policy landscape, Online
07/07/2022	Ocean Decade Implementing Partners Meeting with JPI Oceans, Online
08/07/2022	EMB ExCom Meeting, Online
08/07/2022	Meeting with Elisabetta Balzi, European Commission, Brussels, Belgium
11/07/2022	Meeting with SINTEF Ocean, Online
12/07/2022	Meeting with David McAllister, European Commission, Online
13/07/2022	EMB Working Group Marine Habitat Chapter Leads Meeting, Online
03/08/2022	ECOP Wednesdays: Ocean Science Diplomacy, Online

Date	Event and Venue
18/08/2022	Third Thursday Webinar: Marine biotechnology to advance Europe's bioeconomy, Online
23 – 24/08/2022	EMB Ambassador training workshop, Ostend, Belgium
26/08/2022	EMB Working Group Ocean Oxygen Meeting, Online
01/09/2022	Ocean Decade Implementing Partners Meeting with JPI Oceans, Online
06/09/2022	EMBracing the Ocean committee Meeting, Online
06/09/2022	Gender & Diversity Training with JUMP – Part 1, Ostend, Belgium
07/09/2022	ECOP Wednesdays: Mission Oriented R&I For a Healthy Ocean, Online
08/09/2022	EMBCP Steering Group Meeting, Online
12/09/2022	EMB Working Group Coastal Resilience Chairs Meeting, Online
15/09/2022	EMB Third Thursday Science Webinar: Unlocking Marine Genetic Resources: Streamlining the Legal, Policy and Business Aspects of the Marine Biodiscovery Pipeline, Online
26/09/2022	EMB Working Group Marine Habitat Mapping Meeting, Online
26/09/2022	Gender & Diversity Training with JUMP – Part 2, Ostend, Belgium
29/09/2022	Project kick-off Meeting with Artevelde students, Ostend, Belgium
03/10/2022	Meeting on future of EMB UCP Panel, Online
03/10/2022	EMB Working Group Marine Habitat Mapping Chairs Meeting, Online
05/10/2022	ECOP Wednesdays: Ecological impacts of large-scale offshore wind farms in the Mediterranean Sea, Online
05/10/2022	EMB Working Group Coastal Resilience Chairs Meeting, Online
11-14/10/2022	YOUMARES Conference, Berlin, Germany
14/10/2022	EMB Working Group Coastal Resilience Chairs Meeting, Online
14/10/2022	EMB Working Group Marine Habitat Mapping Chairs Meeting, Online
18-19/10/2022	EMB Working Group Ocean Oxygen Meeting, Ostend, Belgium
20/10/2022	EMB Third Thursday Science Webinar: The MPA Guide: A framework to achieve global goals for the Ocean, Online
21/10/2022	EMB Working Group Marine Habitat Mapping Chapter Lead Meeting, Online
24-25/10/2022	EMB Working Group Navigating the Future VI Kick-off Meeting, Ostend, Belgium
26-27/10/2022	EMB Autumn Plenary Meeting, Ostend, Belgium
02/11/2022	Ecopath Webinar Series, Online
02/11/2022	ECOP Wednesdays: How to use your PhD without being an academic, Online
03/11/2022	Ocean Decade Implementing Partners Meeting with JPI Oceans, Online
09/11/2022	EMBCP Steering Group Meeting, Online
10/11/2022	EMB Young Ambassador Meeting, Online
22/11/2022	EMBracing the Ocean committee Meeting, Online
25/11/2022	Meeting with SINTEF + Network event, Brussels, Belgium

Date	Event and Venue
28/11/2022	EMB Young Ambassador Meeting, Online
29/11-02/12/2022	CommOCEAN 2022, Sète, France
02/12/2022	EMBCP Autumn 2022 Meeting, Online
05/12/2022	EMB Working Group NFVI Ocean and Biodiversity Chapter Meeting, Online
07/12/2022	ECOP Wednesday: Thoughts on the future regulation of ocean observing in the European Union, Online
07/12/2022	EMB Working Group NFVI Ocean and Water Chapter Meeting, Online
15/12/2022	EMB Third Thursday Science Webinar: Machine learning to unlock the potential of plankton imaging big data, Online
16/12/2022	EMB Working Group Deep Sea & Ocean Health Chairs Meeting, Online
16/12/2022	EMB Working Group Coastal Resilience Chairs Meeting, Online

ANNEX 6: PRESENTATIONS AT MEETINGS BY THE EMB SECRETARIAT AND EXCOM IN 2022

Date	Event and Venue	Speaker(s)
28/01/2022	VLIZ Introduction day, Ostend, Belgium	Sheila Heymans
09/02/2022	Workshop on ecosystem indicators as tools for management, Online	Sheila Heymans
18/02/2022	VLIZ Seminar, Ostend, Belgium	Sheila Heymans
03/03/2022	Forum Océan, Paris, France	Sheila Heymans
07/03/2022	5 years of Norwegian Marine University Consortium, Online	Sheila Heymans
22/04/2022	VLIZ Seminar, Ostend Belgium	Sheila Heymans
9 – 13/05/2022	EuroSea General Assembly Meeting, Cádiz, Spain	Ángel Muñoz Piniella
10/05/2022	Ocean Decade Laboratory "An Accessible Ocean", Online	Sheila Heymans
16 – 20/05/2022	53rd Ocean Liège Colloquium, Liège, Belgium	Sheila Heymans
23-26/05/2022	GMF Invitation MSG22 - Sustainable Blue Economy, Venice, Italy	Sheila Heymans
07/06/2022	22nd Meeting of the United Nations, New York, United States	Gilles Lericolais
24/06/2022	French Embassy and EU Delegation to Malaysia: Seminar on Ocean Governance / MSP, Online	Sheila Heymans
04 – 05/07/2022	UK Sustained Scientific Ocean Observing Priorities – Panel Workshop, Southampton, UK	Sheila Heymans
21/09/2022	Gala of the European University of the Sea "SEA-EU", Brest, France	Gilles Lericolais
11-12/10/2022	Copernicus Biodiversity in Coastal Ecosystems workshop, Online	Sheila Heymans
13/10/2022	Sustainable Blue Economy Partnership (SBEP) Regional Workshop for the Black Sea, Brussels, Belgium	Sheila Heymans
13-14/10/2022	MSP-MED Final Conference, Rome, Italy	Gilles Lericolais
18/10/2022	NORCE Seminar on ocean-related research and innovation for sustainable development, Brussels, Belgium	Sheila Heymans
21/10/2022	InnovOcean campus visit JPI Oceans, Ostend, Belgium	Sheila Heymans
28/10/2022	VLIZ Seminar, Ostend, Belgium	Jana Van Elslander
21/11/2022	JPI Oceans Get Together, Brussels, Belgium	Sheila Heymans
22/11/2022	Visit from Fisheries Development Institute (IFOP) Chile, Ostend, Belgium	Sheila Heymans
01/12/2022	Eurofleets+ Workshop, Ghent, Belgium	Paula Kellett
01/12/2022	InnovOcean campus visit DG MARE, Ostend, Belgium	Sheila Heymans
07/12/2022	EOOS Resource Forum, Online	Sheila Heymans
08/12/2022	European Ocean Research and Education Alliance (EOREA), Brussels, Belgium	Gilles Lericolais

ANNEX 7: EMB MEMBER CONTRIBUTIONS 2022

Marine Board Member	Country	Contribution 2022
Research Foundation - Flanders (FWO)	Belgium	€ 12,000
National Fund for Scientific Research (FNRS)	Belgium	€ 12,000
Belgian Science Policy Office (BELSPO)	Belgium	€ 12,000
Institute of Oceanography and Fisheries (IOF)	Croatia	€ 3,000
Ruđer Bošković Institute (IRB)	Croatia	€ 3,000
National Institute for Aquatic Resources (DTU AQUA)	Denmark	€ 12,000
Estonian Academy of Sciences (ETA)	Estonia	€ 8,000
French Institute for the Exploitation of the Sea (IFREMER)	France	€ 17,000
Marine Universities Consortium France (UM)	France	€ 17,000
National Centre for Scientific Research (CNRS)	France	€ 17,000
German Marine Research Consortium (KDM)	Germany	€ 17,000
Helmholtz Centre for Ocean Research Kiel (GEOMAR)	Germany	€ 17,000
Hellenic Centre for Marine Research (HCMR)	Greece	€ 8,000
Marine Institute (MI)	Ireland	€ 12,000
Irish Marine Universities Consortium (IMUC)	Ireland	€ 12,000
National Inter-University Consortium for Marine Sciences (CoNISMa)	Italy	€ 17,000
National Research Council Italy (CNR)	Italy	€ 17,000
Anton Dohrn Marine Station (SZN)	Italy	€ 17,000
National Institute of Oceanography and Experimental Geophysics (OGS)	Italy	€ 17,000
Royal Netherlands Institute for Sea Research (NIOZ)	Netherlands	€ 12,000
DELTA RES	Netherlands	€ 12,000
Norwegian Marine University Consortium (NMU)	Norway	€ 12,000
The Research Council of Norway (RCN)	Norway	€ 12,000
Institute of Marine Research (IMR) ¹	Norway	€ 12,000
Institute of Oceanology of The Polish Academy of Sciences (IO-PAN)	Poland	€ 8,000
Science and Technology Foundation (FCT)	Portugal	€ 8,000
Centre of Marine and Environmental Research (CIMAR)	Portugal	€ 8,000
Romanian Black Sea Research Consortium (RBRC)	Romania	€ 8,000
Spanish Institute of Oceanography (IEO)	Spain	€ 12,000
Technological Centre of The Sea (CETMAR)	Spain	€ 12,000
University of Gothenburg (UGOT)	Sweden	€ 12,000
Scientific and Technological Research Council of Turkey (TÜBİTAK)	Turkey	€ 8,000
Marine Alliance for Science and Technology Scotland (MASTS)	UK	€ 17,000
Natural Environment Research Council (NERC)	UK	€ 17,000
National Oceanography Centre (NOC) ²	UK	€ 17,000
Total	35	€ 434,000

¹ Paid by Research Council of Norway

² Paid by NERC

ANNEX 8:

Full list of EMB publications

PUBLICATIONS IN 2022:

- Seys, J., Cox, L., Şahin Yücel, E., Ezgeta-Balić, D., Faimali, M., Garaventa, F., García-Martínez, M-C., Gili, C., Kopke, K., Moreau, K., Petrera, F., Simon, D., Villwock, A., Zielinski, T., Muñiz Piniella, A. (2022). **Marine Science Communication in Europe – A way forward**. Muñiz Piniella, A., Kellett, P., van den Brand, R., Alexander, B., Rodriguez Perez, A., Van Elslander, J., Heymans, J. J. [Eds.] Future Science Brief 8 of the European Marine Board, Ostend, Belgium. 48pp. ISBN: 9789464206166 ISSN: 2593-5232 DOI: 10.5281/zenodo.6444143
- European Marine Board. **Uncovering the hidden threat of marine geohazards in Europe**. EMB Policy Brief No. 10, April 2022. ISSN: 0778-3590 ISBN: 9789464206159 DOI: 10.5281/zenodo.6376260
- Kellett, P., van den Brand, R., Alexander, B., Rodriguez Perez, A., Muñiz Piniella, Á., Van Elslander, J., Heymans, J. J. (2022). **8th EMB Forum Proceedings**. Supporting the Ocean Decade in Europe. DOI: 10.5281/zenodo.5814763
- Heymans, J. J., Van Elslander, J., Kellett, P., van den Brand, R., Muñiz Piniella, A., Alexander, B. Rodriguez Perez, A. **European Marine Board Annual Report 2021**. European Marine Board, Ostend, Belgium. 2022. ISSN 2565-7402. 64pp

POSITION PAPERS 2000-2021:

- Kopp, H., Chiocci, F. L., Berndt, C., Çağatay, M. N., Ferreira, T., Fortes, C. J. E. M., Gràcia, E., González Vega, A., Kopf, A. J., Sørensen, M. B., Sultan, N., Yeo, I. A. (2021) **Marine geohazards: Safeguarding society and the Blue Economy from a hidden threat**. Muñiz Piniella, A., Kellett, P., van den Brand, R., Alexander, B., Rodríguez Perez, A., Van Elslander, J., Heymans, J. J., [Eds.] Position Paper 26 of the European Marine Board, Ostend, Belgium. 100 pages. ISSN: 2593-5232. ISBN: 9789464206111 DOI: 10.5281/zenodo.5591938
- Nieuwejaar, P. et al.(2019) **Next Generation European Research Vessels: Current Status and Foreseeable Evolution**. Heymans, J.J., Kellett, P., Viegas, C., Alexander, B., Coopman, J., Muniz Piniella, A. [Eds.] Position Paper 25 of the European Marine Board, Ostend, Belgium. 140pp. ISBN: 978-94-92043-79-5 DOI: 10.5281/zenodo.347789 Coordinating author: Per Nieuwejaar; Contributing authors: Valerie Mazauric, Christian Betzler, Mafalda Carapuco, Andre Cattrijsse, Franco Coren, Juanjo Danobeitia, Colin Day, Aodhan Fitzgerald, Stefan Florescu, Jose Ignacio Diaz, Michael Klages, Erica Koning, Olivier Lefort, Giuseppe Magnifico, Oystein Mikelborg, Lieven Naudts
- European Marine Board (2019) **Navigating the Future V: Marine Science for a Sustainable Future**. Position Paper 24 of the European Marine Board, Ostend, Belgium. ISBN: 9789492043757. ISSN: 0167-9309. DOI: 10.5281/zenodo.2809392 Coordinating authors: Ferdinando Boero, Valerie Cummins, Jeremy Gault, Geir Huse, Catharina J.M. Philippart, Ralph Schneider, Anne Marie Treguier. Contributing authors: Sukru Besiktepe, Gilles Boeuf, Marta Coll, Carlos Garcia-Soto, Kevin Horsburgh, Heidrun Kopp, Francesca Malfatti, Patrizio Mariani, Nele Matz-Luck, Jan Mees, Luis Menezes Pinheiro, Denis Lacroix, Martin Le Tissier, David M. Paterson, Gerald Schernewski, Olivier Thebaud, Michiel B. Vandegehuchte, Sebastian Villasante, Martin Visbeck, Jan Marcin Węśławski
- Garcia-Soto, C., (2017) **Advancing Citizen Science for Coastal and Ocean Research**. French, V., Kellett, P., Delany, J., McDonough, N. [Eds.] Position Paper 23 of the European Marine Board, Ostend, Belgium. 112pp. ISBN: 978-94-92043-30-6. Coordinating author: Carlos Garcia Soto; Contribution Authors: Gro Van Der Meeren, Julia A. Busch, Jane Delany, Christine Domegan, Karin Dubsy, Géraldine Fauville, Gabriel Gorsky, Karen von Juterzenka, Francesca Malfatti, Gérald Mannaerts, Patricia McHugh, Pascal Monestiez, Jan Seys, Jan Marcin Węśławski, Oliver Zielinski
- Rogers A.D. *et al.* (2015) **Delving Deeper: Critical challenges for 21st century deep-sea research**. European Marine Board Position Paper 22. Larkin, KE, Donaldson K, McDonough, N (Eds). European Marine Board, Ostend, Belgium, 2014. Coordinating author: Alex D. Rogers; Contributing authors: Andy Brierley, Peter Croot, Marina Cunha, Roberto

Danovaro, Colin Devey, Alf Haakon Hoel, Henry Ruhl, Pierre-Marie Sarradin, Seline Trevisnaut, Helena Viera, Martin Visbeck

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