

# Annual Report 2020

## EUROPEAN MARINE BOARD

The European Marine Board provides an pan-European platform for its member organizations 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 (EMB) is an independent and self-sustaining organisation that currently represents 35 Member Organizations from 18 European countries. It was established in 1995 to enhance cooperation between European marine science organizations 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. The EMBs 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 organizations by providing a forum to develop and convey marine research policy advice 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](http://www.marineboard.eu)



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# Highlights 2020

J

EMB Brown Bag Lunch on Blue Carbon, 4 February, Brussels

CETMAR-MATES Stakeholder Workshop on "The Next Generation European Research Vessels", 22-23 January, Vigo

F

All Atlantic Research Forum, 6-7 February, Brussels

M

EMB WG Marine Geohazards Kick-off meeting, 10-11 February, Rome



EuroFleets+ meeting and launch of EMB PB7 on European Research Vessels, 3-5 March, Lisbon

A

International Ocean Governance (IOG) Forum Webinars, 22-24 April, Online



Launch of the Strategic Research Agenda and Final Conference, 31 March, Online

M

Webinar Launch of EMB Future Science Brief No. 6 on 'Big Data in Marine Science'

J

EMB WG Underwater Noise Kick-off meeting, 8 June, Online

EMB Spring Plenary meeting, 27-28 May, Online

J

Air Centre Networking Friday – 25 years of EMB's marine research activities, 12 June, Online

Searica Intergroup webinar "How is our health linked to the ocean", 8 June, Online

A

Launch of the EMB Science Webinar series, 20 August, Online

International Ocean Governance Workshops, 2, 3, 6, 8, 9 June, Online

S



EuroSea Stakeholder Workshop, 15 September, Online

O



Steering Group and Advisory Committee, 18 & 21 September, Online

N

Ocean Decade Virtual Series OHH Webinar, 5 October, Online

EMB Autumn Plenary meeting, 4-5 November, Online

D

International Ocean Governance Forum and workshops, 14-16 December, Online



# Message from the Chair



When it started in 2014, the Horizon 2020 EU Framework Programme was described as the financial instrument implementing the Innovation Union and a Europe 2020 flagship initiative aiming at securing Europe's global competitiveness. For marine science, the year 2020 should have been the year of the achievement of the "Blue Growth Initiative", a significant year for the Ocean, and a year of great deliverables for the EU (e.g. to halt biodiversity loss, restore ecosystem services, and achieve Good Environmental Status). However, 2020 was a year out of the ordinary, and turned into a year in which the world had to tackle the COVID-19 pandemic, which brings many ongoing challenges. The need to sequence the virus and develop vaccines in a short period of time demonstrated that research is an investment in our future and should be kept at the heart of the EU's new Framework Programme Horizon Europe, which starts in January 2021.

For the European Marine Board (EMB) and our Member organizations, research and innovation are at the heart of our concerns, and this pandemic has brought new or different ways of organizing research activities, collaborating, networking, organizing events, and communicating research results.

To analyse the impacts of the pandemic on European marine research activities, the EMB conducted an initial survey of its Member organizations in summer 2020 to find out how they were impacted by the COVID-19 pandemic. I was very satisfied to learn that most of our Members quickly adapted to the complete transfer to teaching online, and to online meetings and online research, offering mutual support to colleagues and students. We have now relaunched the survey to update the analysis and understand the ongoing situation.

EMB has a long-standing reputation of organizing many in-person events, so it was unfortunate that in 2020 we were not able to meet in person. We were not able to come together and have face-to-face discussions with a drink or some good local food, as we normally do during our Plenary meetings. Nevertheless, the Board continued to share their thoughts on new research topics via online Plenary meetings and via various new initiatives such as the EMB Science Webinar series.

The 7<sup>th</sup> EMB Open Forum on Big Data in Marine Science, which was planned as one of the highlights of 2020, also moved online: a first for one of our flagship events. On the upside, looking at the high number of participants for the event, moving online has helped us broaden our audience and reach other interested stakeholders from further afield, including internationally.

I was not expecting to have to chair such a nice organization mostly virtually. With the help of a great Secretariat who are dedicated to finding solutions and answering the needs of our Members in providing the right response at the right moment, I can say that the EMB remains an important platform to advance marine research and to bridge the gap between science and policy. It is indeed the role of science to lead by example and to offer perspective and hope in a world that is in turmoil. I have good faith that we, the EMB and all of our Members, will continue to do so with the scientific advice that will come out in our new publications on Marine Geohazards, Sustained Funding for Ocean Observation Infrastructures, and Underwater Noise within the next year.

**Dr. Gilles Lericolais**, EMB Chair

# Executive Director's report



As with all other people on the planet, the EMB and its Secretariat have had to adapt to a new way of working over the past year. We have had to squash our Board meetings and science sessions into shorter, online meetings where we could only see each other in little squares. It has meant that we have not had the opportunity to meet in person, and have good philosophical discussions over coffee or wine. It has also meant that we have been unable to meet our two new Young Ambassadors, **Natalija Dunić and Alessandro Cresci**, in person, and have had to make do with getting to know each other online. Online meetings mean that we have had to be much more succinct in our discussions and that we have had to forego in-depth discussions on our future working group topics at our Plenary meetings for instance. COVID-19 has also meant that two of our working groups have had to meet mostly online. The Geohazards working group, efficiently organized by **Ángel Muñiz Piniella**, was able to at least have an in-person kick-off meeting in February 2020. However, the kick-off for our Underwater Noise working group, led by **Paula Kellett**, was fully virtual, as will be the case for the new working groups in 2021. This new way of working is unfortunately here to stay – at least for 2021 – but probably also for the foreseeable future.

This brave new world of virtual meetings is not necessarily always a bad thing. Virtual meetings mean we can attend more meetings in a shorter time: the Secretariat has probably doubled our outreach by attending double the amount of meetings this year. Our carbon footprint has significantly reduced, and with that our travel expenditure for 2020 has also reduced, which will enable us to use that funding to support the UN Decade of Ocean Science for Sustainable Development. In addition, virtual meetings mean that we can spend more time with loved ones, as I can attest. The working from home rule has meant that I have been able to work from my family home in Namibia for the past months. Virtual meetings also mean that we have found new ways to reach a wider audience, with our very well received #ThirdThursdayScience Webinars, an inspired suggestion from **Joke Coopman**, that highlight the science behind our documents. They also allowed wider participation at our 7<sup>th</sup> EMB Forum, which highlighted the outcomes from our Big Data in Marine Science Future Science Brief. The Forum had to be re-organised four times by the ever-patient **Britt Alexander**, as we went from our first plan for an in-person meeting in April, to an optimistic plan for an in-person meeting in October, to a planned hybrid-event in October, to finally having a fully virtual event on 23 October 2020. There has also been some positive news regarding the COVID-19 pandemic, with some of our Member organizations helping with PCR testing and providing support to national laboratories. You can read more about this in our report on the first [COVID-19 survey to EMB Members](#). However, the impact that the COVID-19 pandemic will have on diversity in science is still to be seen. The impact of the lockdown on young scientists, women, parents, and scientists with caring roles is not well understood yet, and will probably only be fully seen in years to come.

COVID-19 notwithstanding, the EMB Secretariat has been very busy with our Working Groups, European projects, and supporting marine science through the European Ocean Observing System (EOOS) and the Ocean Decade. We will continue to do so in 2021 and hope to meet all our Members again sometime in person.

**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 organizations 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.

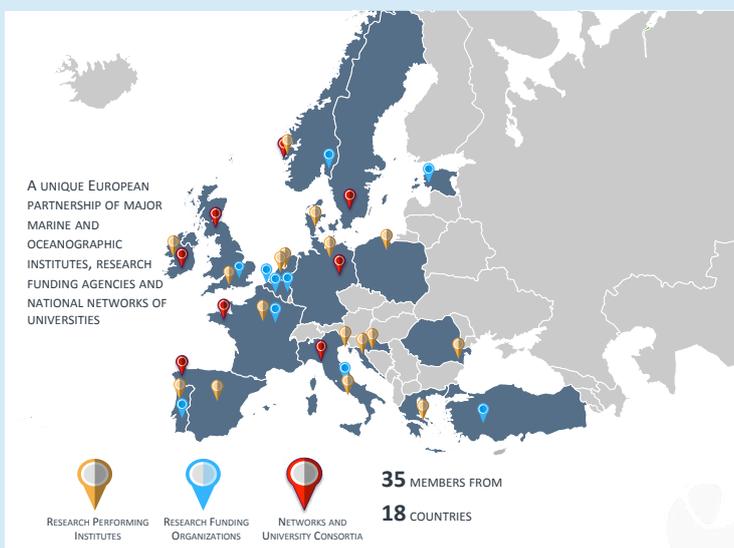
Topics of strategic interest identified by the EMB form the basis for new publications and events. These target European and national research programme managers, strategy developers, policymakers and the marine research community to drive future European and national marine research agendas, and support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

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

## STRUCTURE AND GOVERNANCE

The EMB was established in 1995 to facilitate enhanced cooperation between European marine science organizations. Members are either major national marine or oceanographic institutes, research funding agencies, or national consortia of universities with a strong

marine research focus. In 2020, the EMB represented 35 Member Organizations from 18 countries.



## EMB DELEGATES

The representatives (EMB Delegates) from EMB Member organizations 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 organizations, research funding organizations, 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 an ex-officio Member of the ExCom.

ExCom mandates in 2020:



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



**Mark James – vice-Chair**  
Marine Alliance for Science and  
Technology Scotland (MASTS), UK



**Jan-Stefan Fritz – vice-Chair**  
German Marine Research  
Consortium (KDM), Germany



**Ferdinando Boero – vice-Chair**  
National Inter-University  
Consortium for Marine Sciences  
(CoNISMa), Italy



**Carlos García Soto – vice-Chair**  
Spanish Oceanographic Institute  
(IEO), Spain



**Yves-Marie Paulet – vice-Chair**  
Universities Marine (UM), France



**Jeremy Gault – vice-Chair**  
Irish Marine Universities  
Consortium (IMUC), Ireland



**Sheila JJ Heymans – Ex-officio  
Member**  
EMB Executive Director



**Alan Evans – vice-Chair**  
NERC, UK

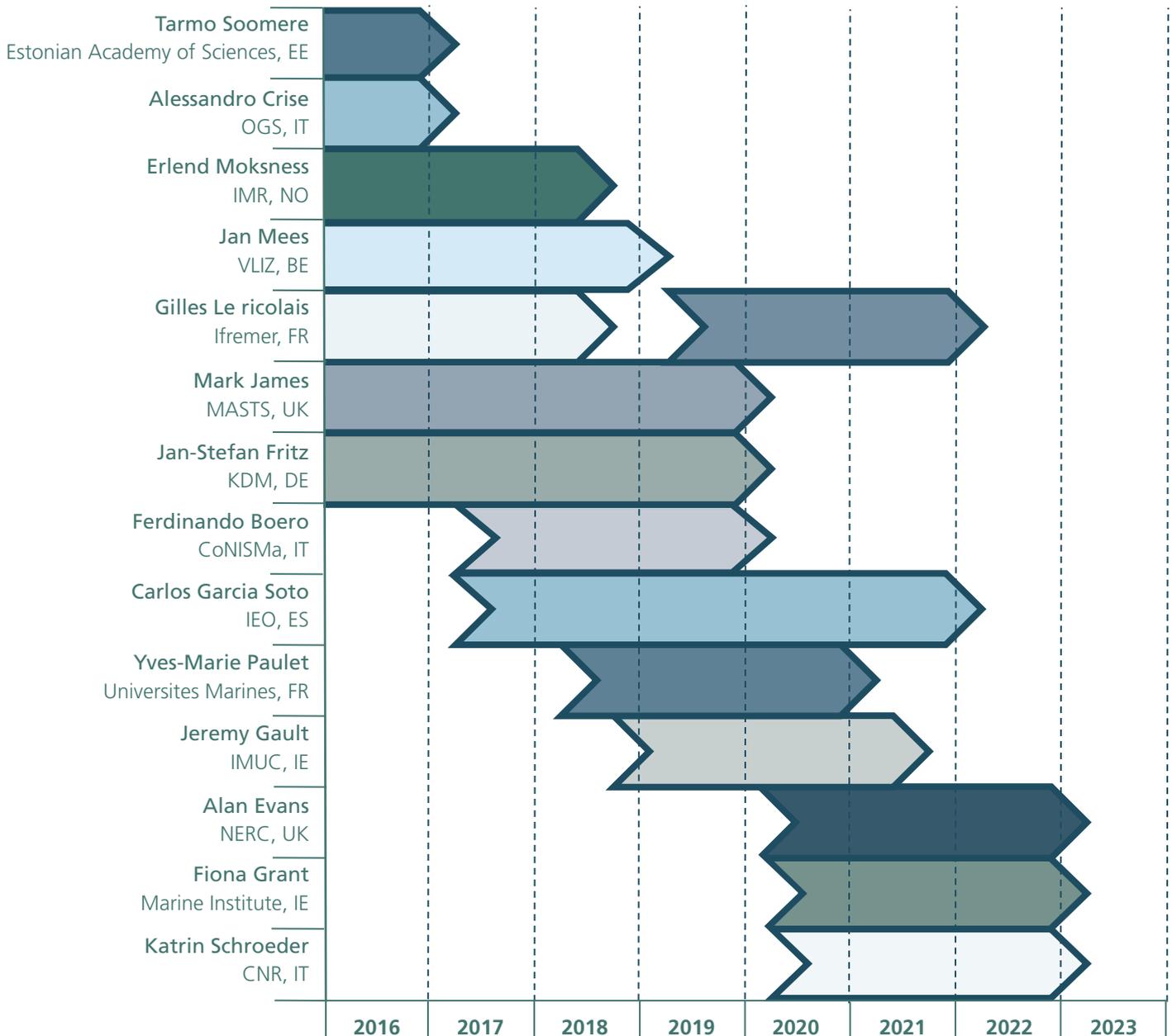


**Fiona Grant – vice-Chair**  
Marine Institute (MI), Ireland



**Katrin Schroeder – vice-Chair**  
National Research Council (CNR),  
Italy

## 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. The Secretariat is based in Ostend, Belgium. EMB activities and the operation of its Secretariat are funded through annual Member contributions and EMB external contracts.

## 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 role and 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 make sure that the voices and ideas of young researchers are reflected within the EMB's work. The Ambassadors engage with EMB for a two-year period after which they join the Young Ambassador Alumni Group.

In 2020, EMB had four active Young Ambassadors: **Liam Lachs**, a PhD student from Newcastle University, UK; **Alba González Vega**, a PhD student from the Spanish Institute of Oceanography (IEO), Spain; **Natalija Dunić**, a postdoctoral researcher from the Institute of Oceanography and Fisheries (IOR) in Croatia; and **Alessandro Cresci**, a postdoctoral researcher at the Institute of Marine Research (IMR) in Norway. Natalija and Alessandro joined the EMB Young Ambassador Programme in March 2020, at the start of the COVID-19 pandemic in Europe. As travel and large events became more difficult, the Ambassadors participated in online events, including the EMB Plenary meetings, and engaged in various ways in EMB Working Groups (WGs). Alba is contributing to the EMB WG on Marine Geohazards (see p24), Alessandro to the EMB WG on Underwater Noise (see p25), Liam contributed to writing the Terms of Reference for, and will participate in, the EMB WG on Coastal Resilience (see p26), and Natalija, Liam and Alba contributed to the 7<sup>th</sup> EMB Open Forum (see p17).

Short video introductions from the 4 Young Ambassadors are available on the EMB [website](#) and the [EMB YouTube Channel](#). They also [contributed blogs](#) on how the COVID-19 pandemic impacted them. Find out more about the EMB Young Ambassadors and their activities on the [EMB website](#).



**Alba González Vega**



**Liam Lachs**



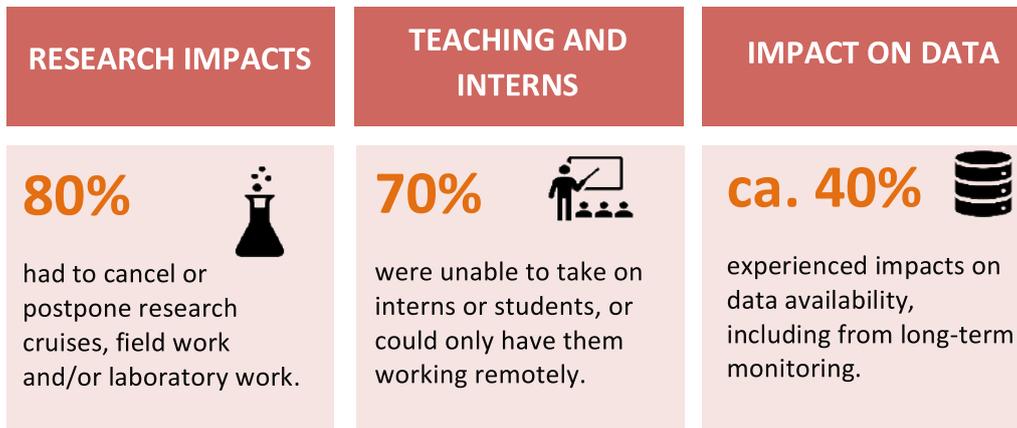
**Alessandro Cresci**



**Natalija Dunić**

# COVID-19 IMPACT ON MARINE SCIENCE

The global COVID-19 pandemic caused lockdowns in countries across Europe and worldwide. These lockdowns forced people to reschedule their work routines and interactions. A survey was launched during summer 2020 to understand the impact and implications (both positive and negative) of the first wave of COVID-19 lockdown measures on the EMB Member organizations. In total, 30 responses were collected from 23 EMB Member organizations in 14 countries, with several organizations providing multiple responses. Some of the key results are included below:



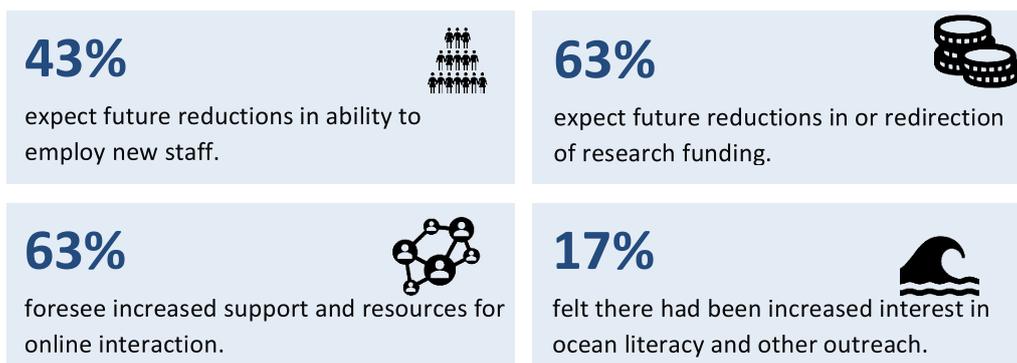
## SUPPORTING THE COVID-19 EFFORT



## MOVING ONLINE



## FUTURE IMPACTS



# Plenary meetings 2020

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

## SPRING PLENARY MEETING – 27-28 MAY 2020, ONLINE

The EMB Spring Plenary meeting was foreseen to be hosted by the University of Gothenburg in Sweden. However, due to the COVID-19 travel restrictions in Europe, the meeting moved online, and as a result more delegates were able to attend. In total, 35 delegates, the four EMB Young Ambassadors and four observers from DG MARE, DG RTD and EuroGOOS, attended the meeting. Highlights from the meeting are listed below:

### **DELTARES (the Netherlands) joined as EMB's 35<sup>th</sup> Member**

Sharon Tatman and Bianca Peters presented the DELTARES membership application, which was unanimously approved by the Board.

The logo for Deltares, featuring the word "Deltares" in a bold, blue, sans-serif font.

### **New composition of the EMB ExCom**

The Board re-elected Carlos Garcia Soto (IEO, Spain), and elected Fiona Grant (Marine Institute, Ireland), Katrin Schroeder (National Research Council, Italy) and Alan Evans (NERC, UK) as new ExCom Members. They replaced the outgoing ExCom Members Mark James, Jan-Stefan Fritz and Ferdinando Boero, who had served with active and valuable contributions over the past years.

### **Launch of new EMB Working Groups and Science Webinars**

The Board also agreed to 2 new EMB Working Groups on Coastal Resilience and Marine Renewable Energy. The Board agreed to set up both Working Groups in 2021 and to launch their publications in 2022. In addition, the Board agreed to launch the 'EMB Third Thursday Science Webinar Series' initiative to host an hour-long webinar each month on the marine science underpinning EMB publications. The webinar series started in August 2020.

A graphic for the EMB #ThirdThursdayScience Webinar Series. The background is a close-up of a fishing net with orange, green, and blue floats. A semi-transparent white box is overlaid in the center, containing text about the webinar series.

**EMB #ThirdThursdayScience Webinar Series**  
*Showcasing the Science behind EMB publications*

Dive into the science which underpins the EMB publications with the scientists behind it!

Third Thursday of every month  
13:00 - 14:00 CEST  
More at: <https://www.marineboard.eu/science-webinars>  
Register now!

## AUTUMN PLENARY MEETING – 4-5 NOVEMBER, ONLINE

EMB Delegates and invited guests met online on 4-5 November 2020 for the EMB Autumn Plenary Meeting. The meeting was very well attended with 40 Delegates present, the four Young Ambassadors and guests from the IOC-UNESCO, DG RTD and JPI-Oceans. Some highlights from the meeting are listed below:

### Continuation of the EMB Young Ambassador Programme

The first cycle of the EMB Young Ambassador Programme ends in spring 2021, at which time Liam Lachs and Alba González Vega will have completed their mandates as Ambassadors. The Board unanimously supported the continuation of the EMB Young Ambassador Programme. The Board valued the interactions with the Ambassadors and their participation in various activities, including EMB Working Groups on Underwater Noise and Marine Geohazards, the 7<sup>th</sup> EMB Open Forum, the EurOCEAN Conference in 2019, and their contributions in communications, such as their blogs ([available on the EMB website](#)) and on social media. A call for two new Ambassadors will be launched in early 2021.

### New EMB Working Groups

The Board agreed to launch two additional Working Groups in 2021: a small *ad hoc* Working Group on Sustained Funding for Ocean Observation Infrastructure with the fast publication of a Policy Brief by summer 2021, and a Working Group on Marine Habitat Mapping, for which the Terms of Reference would be prepared by the EMB Spring Plenary meeting in 2021.

### Open Session on the Impact of COVID-19 on Marine Science

Given its large global impact in 2020, it seemed appropriate for the EMB Open Session to explore the impacts of COVID-19 on marine science. Emma Heslop (IOC-UNESCO) presented the Global Ocean Observing System (GOOS)'s work on the impacts of COVID-19 on Ocean observing, and EMB Executive Director Sheila Heymans presented the results of the first survey sent to EMB Members on the impact of COVID-19 on their activities (see p10). Break-out sessions were organized with the Members to consider next steps, analyse issues and brainstorm on future approaches. The blogs of the EMB Young Ambassadors (who also participated) on the impact of COVID-19 on their lives and careers, were a good starting point for these discussions.



Plenary meetings anno 2020



# EMB science-policy interactions & events

The EMB is an independent organization 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 Organizations, 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 this by organizing 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. EurOCEAN conference and the EMB Open Forum).



## 7<sup>TH</sup> EMB OPEN FORUM BIG DATA IN MARINE SCIENCE: SUPPORTING THE EUROPEAN GREEN DEAL, THE EU BIODIVERSITY STRATEGY, AND A DIGITAL TWIN OCEAN

### 23 October 2020, Online

The 7<sup>th</sup> EMB Forum was held online on 23 October 2020 to discuss the role of big data in advancing marine science to support the European Green Deal, the EU 2030 Biodiversity Strategy, and the development of a Digital Twin Ocean (DTO). 192 participants from Europe and beyond were present, representing academia, government, industry, and NGOs. Experts gave presentations and participated in panel discussions with audience interaction. The Opening session began with a welcome from the EMB Chair, Gilles Lericolais, followed by Andreea Strachinescu (European Commission's Directorate General Maritime Affairs and Fisheries, DG MARE), who noted the ongoing digital transformation as part of the 'European Data Strategy' and the opportunities that big data could offer to better understand the Ocean and its contributions to humanity.



**Lionel Guidi** (Chair of the EMB Working Group 'Big Data in Marine Science' and Researcher at Laboratoire d'Océanographie de Villefranche sur Mer, France) highlighted the conclusions and recommendations from the EMB Future Science Brief No. 6 on Big Data in Marine Science.

**Linwood Pendleton** (Senior Vice-President for Science, Centre for the 4<sup>th</sup> Industrial Revolution & International Chair of Excellence, European Institute of Marine Studies) gave a thought-provoking keynote talk entitled "Homo Digitus Oceanus: The Human Side of Big Ocean Data".



### EMB Young Ambassadors Natalia Dunić, Alba González Vega and Liam Lachs



presented their perspectives on "Supporting the Ocean System with Integrated Big Data".

The following sessions focused on big data to advance the European Green Deal, the EU Biodiversity Strategy, and the development of a Digital Twin Ocean, with presentations and interactive panel discussions including panellists from academia, the European Commission, industry, and NGOs.



**Jeroen Steenbeek** (Senior Software Engineer, Ecopath International Initiative) presented during the European Green Deal session and provided insight on the Marine Spatial Planning (MSP) Challenge Simulation Platform.

**Sakina-Dorothee Ayata** (Associate Professor of Marine Ecology at Sorbonne University, Laboratoire d’Océanographie de Villefranche sur Mer) kicked-off the EU Biodiversity Strategy session with a presentation on the contribution of data science to meeting marine biodiversity objectives.



**Neil Davies** (Director, Gump Station on Moorea and Research Affiliate, Berkeley Institute of Data Science) opened the Digital Twin Ocean session with a presentation on Island Digital Ecosystem Avatars (IDEAs) for sustainability. These provide social-ecological foresight and enable holistic, use-oriented computational simulations to support local decision making for sustainable development and connect local communities directly with the science to ensure it adds value to society.

The 7<sup>th</sup> EMB Forum was closed by Ricardo Serrão Santos (Portuguese Minister of the Sea) and Sigi Gruber (European Commission’s Directorate General Research and Innovation, DG RTD). They concluded that new knowledge and new technologies alone cannot solve major threats to the Ocean, and support is needed from sound governance and policies at regional and national levels, aligned with global and shared concerns.



## WEBINAR LAUNCH OF EMB FUTURE SCIENCE BRIEF No. 6 ‘BIG DATA IN MARINE SCIENCE’

EMB’s 6<sup>th</sup> Future Science Brief on ‘Big Data in Marine Science’ was launched on 29 April 2020 during a dedicated webinar with over 300 participants from Europe and beyond. EMB Executive Director Sheila Heymans presented an overview of the document and its key recommendations. This was followed by four TED-style talks by co-authors of the document:



**Jerry Tjiputra** (NORCE Norwegian Research Centre) illustrated how big data can improve climate modelling and forecasting that feeds into global climate negotiations, which helps to achieve the goals of the Paris Agreement.

**Federica Foglini** (Institute of Marine Science - Italian National Research Council) presented how big data can be used to create high resolution, multidisciplinary habitat maps for planning a new marine protected area in the Bari Canyon in Italy.



**Matthias Obst** (University of Gothenburg) demonstrated how machines are drastically changing the way we observe biological processes in the ocean.

**Ketil Malde** (University of Bergen and Institute of Marine Research) presented on advances in machine learning and the data driven future of marine science.



The speakers were joined by Working Group Members and co-authors Lionel Guidi (Laboratoire d'Océanographie de Villefranche sur Mer, Chair of Big Data in Marine Science Working Group), Edward Curry (Insight Centre for Data Analytics), Dorothee Bakker (University of East Anglia), and Tara Marshall (University of Aberdeen) as panelists during the discussions.

The video recordings of both the Forum and the webinar are available on the [EMB YouTube channel](#).

## EMB BROWN BAG LUNCH SESSIONS

The EMB organizes Brown Bag Lunch (BBL) sessions to stimulate informal and informative discussions on topics of strategic interest between scientists and policymakers. Held over lunch at a venue in Brussels (Belgium), a scientific expert provides a short and provocative view on a specific policy topic, and this is followed by an open discussion with the participants. Everyone with an interest in the topic is welcome to attend. Participants are mainly policymakers from the European Commission and representatives from different associations and networks. In 2020 only one Brown Bag Lunch was held, due to the COVID-19 pandemic.

For more information see: <http://www.marineboard.eu/science-policy-facilitation>

### 4<sup>th</sup> BBL: Blue Carbon

On 14 February 2020, EMB hosted its 4<sup>th</sup> Brown Bag Lunch to discuss Blue Carbon. Blue Carbon refers to organic carbon that is captured and stored by the Ocean and coastal ecosystems. In particular, the vegetated coastal ecosystems of seagrass meadows, tidal marshes, and mangrove forests sequester and store more carbon per unit area than terrestrial forests, and are now being recognized for their role in mitigating climate

change. **Prof. Hilary Kennedy** from the University of Bangor (UK) is one of the leading experts in Europe on this topic and she provided some insight on the latest developments in this field. The event, held at Scotland House in Brussels alongside the EMB Executive Committee meeting, was attended by over 40 participants, including policymakers, scientists, and NGOs. The presentation and the video recording of the talk can be found on the EMB website via the link above.



## EMB SCIENCE WEBINARS

During summer 2020, the EMB launched a new initiative to host monthly hour-long webinars on the marine science that underpins EMB publications. They showcase the research that is done at EMB’s Member Institutes and by the authors of EMB publications. The webinars take place on the third Thursday of every month from 13:00-14:00 CET. The format of the webinars includes a short opening by the EMB moderator and up to 30 minutes of presentation by one or two speakers, with an opportunity for the audience to ask questions. The following #ThirdThursdayScience webinars took place in 2020:

**August: Using ecosystem models to address the ecological and economic effects of climate change and the Common Fisheries Policy (CFP) landing obligation** – linking to EMB Future Science Brief No. 4 on “Marine Ecosystem Modelling”.

**Dr. Natalia Serpetti** (Scottish Association for Marine Science, UK) presented on the “Impact of Ocean warming on sustainable fisheries management”.





**Dr. Igor Celić** (National Institute of Oceanography and Experimental Geophysics, Italy) presented on “Evaluating ecological and economic effects of the landing obligation with an ecosystem model”.

**September: The cells of ecosystem functioning: Towards a holistic vision of marine space.** **Prof. Ferdinando Boero**, (Professor of Zoology at the University of Naples Federico II, Italy, and Associate to CNR-IAS, Genoa, and to the Zoological Station Anton Dohrn, Naples) talked about the need for a holistic understanding of the processes that generate biodiversity patterns, which was highlighted in EMB Position Paper No. 24 “Navigating the Future V”.



**October: Submerged prehistoric landscapes** – linking to Position Paper No. 21 “Land beneath the waves: submerged landscapes and sea level”. **Dr. Nick Flemming** (National Oceanographic Centre, UK), who chaired this Working Group, highlighted the impact of the EMB Position Paper which was published in October 2014.



**Prof. Francesco Chiocci** (University of Rome “Sapienza, Italy) spoke about “Prehistoric research on the EU continental shelf, by crossing the boundary between archaeology and marine geology”.

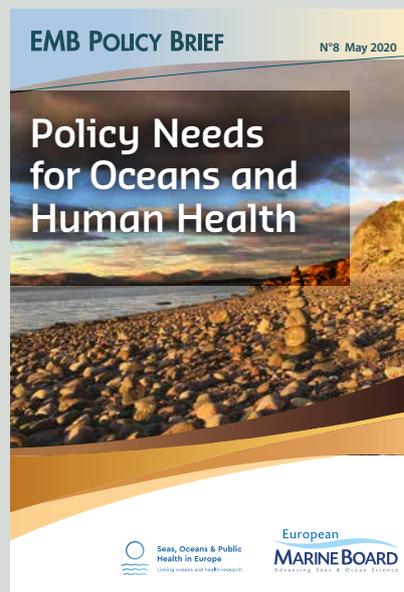
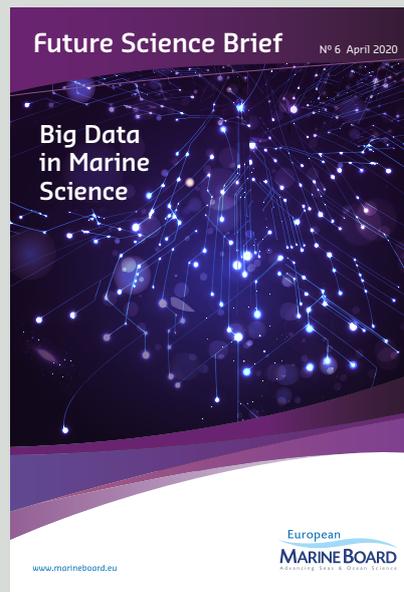
**November: Advancing citizen science of coastal and Ocean research: Norwegian case studies** – linking to Position Paper No. 25 on “Advancing Citizen Science for Ocean and Coastal Research”. **Prof. Carlos Carcia Soto**, Chair of the Working Group, presented the main conclusions of the Position Paper, and **Dr. Gro van der Meeren**, the Co-Chair, presented ongoing examples of citizen science initiatives from Norway.



All the presentations and the video recording from the webinars are available on the EMB website: <https://www.marineboard.eu/science-webinars>

# EMB PUBLICATIONS IN 2020

**Download at:**  
[www.marineboard.eu](http://www.marineboard.eu)



# Ongoing thematic activities

## EUROPEAN RESEARCH VESSELS

After the launch of EMB Position Paper No. 25 “Next generation European research vessels: current status and foreseeable evolution” in November 2019, this topic continued to receive a lot of interest.

The publication, which is the result of a collaboration with the European Research Vessel Operators (ERVO), presents an overview of the current research fleet, including its capabilities, equipment and management, and gives recommendations on what is necessary to ensure that the European fleet can continue to provide the same high level of support to science in the future. It goes beyond the fleet itself to consider the training of fleet personnel, fleet management, and the role of research vessels in the wider context of ocean observations and the European Ocean Observing System (EOOS). It also explores ways in which greater efficiencies could be achieved at local, regional and European scale, to ensure the best possible use is made of these infrastructures.

Given the importance of the ship building industry, and especially research vessels, in Northern Spain, EMB Member [CETMAR](#) found it opportune to organize a stakeholder meeting together with the [MATES project](#) at CETMAR’s premises in Vigo on 23 January 2020. The event was attended by over 60 participants from Spain and Portugal, with over half coming from industry. EMB Executive Director Sheila Heymans presented the EMB Position Paper on research vessels, and participants had the opportunity to discuss future needs, trends, and challenges.

The topic was also picked up by several trade magazines, such as [EcoMagazine](#) in their Jan/Feb 2020 publication, [Hydro International](#), [Industrias Pesqueras](#) and [Sea Technology Magazine](#).

More information on this working group is available on: <https://www.marineboard.eu/european-research-vessels>



The RV Angeles Avariño in Vigo Harbour © EMB

## MARINE GEOHAZARDS

A geohazard (or geological hazard) is a geological condition which represents - or has the potential to develop into - a situation leading to damage or uncontrolled risk. Marine geohazards have not been considered within the policy landscape in the past, but they can pose serious risks to the Blue Economy and societies in coastal areas. The EMB selected 12 experts to produce a Future Science Brief to make specific recommendations on what can be done to cope with this issue. The Working Group is chaired by Prof. Heidrun Kopp from GEOMAR Helmholtz Centre for Ocean Research in Kiel, Germany and co-chaired by Prof. Francesco Chiocci, University of Rome "Sapienza", Italy. This group is supported by EMB Secretariat Member Ángel Muñiz Piniella and Young Ambassador Alba González Vega is contributing to the document.

The Working Group kick-off meeting took place on 10 & 11 February 2020 in Rome, hosted by the Co-Chair, Prof. Francesco Chiocci. Since then, the Working Group have been developing a draft document and is meeting online regularly. Significant progress has been made on the first chapters, which introduce the topic, describe the most relevant marine geohazards that may have the potential to impact European coasts, and present their distribution by sea basin.

In addition, the EMB Secretariat is working together with graphic design students from the Artevelde Hogeschool in Ghent, Belgium, to develop infographics and promotional videos showing basic definitions (e.g. difference between hazards and risk), the most relevant marine geohazards in Europe and their interactions. The Future Science Brief is expected to be finalised and published in 2021.

More information on this working group is available on: <https://www.marineboard.eu/marine-geohazards-blue-economy>



Members of the Working Group that were able to meet in Rome include (back Left to Right): Francesco Chiocci (University of Rome "Sapienza", Italy), Ángel Muñiz Piniella (EMB Secretariat), Isobel Yeo (National Oceanography Centre, UK), Nabil Sultan (Ifremer, France), Teresa Ferreira (University of the Azores, Portugal), Eulàlia Gràcia (Institute of Marine Sciences - CSIC, Spain), Juana Fortes (National Laboratory for Civil Engineering, Portugal), and Sheila Heymans (EMB Secretariat)

## UNDERWATER NOISE

The EMB Working Group on Underwater Noise kicked off its activities during an online meeting on 8 June 2020. The Working Group is comprised of 13 Members and is led by Frank Thomsen (Chair, DHI, Denmark) and Sonia Mendes (Co-Chair, JNCC, UK). The group is supported by EMB Secretariat Member Paula Kellett, and EMB Young Ambassador Alessandro Cresci is also a Member.

The Working Group is developing a Future Science Brief to outline the current state of knowledge on underwater noise and its impact on marine life. It will highlight the progress made since the publication of EMB Position Paper No. 13 on “The effects of anthropogenic sound on marine mammals” in 2008, as well as priority research gaps and barriers to further progress, and make recommendations for addressing these.

The group is currently working on the opening chapters, which present underwater sound sources, effects on marine life (widening the scope from the previous document which focused only on marine mammals), and what is currently being done to address underwater noise. It is expected that the new document will be published in 2021.

To support the activities of this Working Group and to ensure coherence and relevance of messages, the Working Group have links to ongoing activities in this field, including the European Commission’s TG Noise Technical Group, as well as other ongoing projects and initiatives in Europe and internationally.

More information on this Working Group is available on: <https://www.marineboard.eu/underwater-noise>



Container ship passing Terneuzen, the Netherlands © EMB

## COASTAL RESILIENCE

In spring 2020, the Board approved the Terms of Reference for a new EMB Working Group on Coastal Resilience. Resilient coastlines are our first line of defence against threats from climate change, including rising sea level and storm surges. Despite conservation efforts, ecosystems continue to degrade due to impacts including from human development, resource exploitation, and rising temperatures. The UN Decade of Ocean Science for Sustainable Development and the UN Decade of Ecosystem Restoration will provide significant opportunities to scale-up ecosystem conservation and restoration efforts and for scientists, policymakers, industry, and society to work together to find solutions to sustain the provision of coastal ecosystem services. In March 2020, the European Commission presented its new Biodiversity Strategy and through the European Green Deal “the Commission will consider drafting a nature restoration plan”. Therefore, it is timely to provide adequate scientific input to this “nature restoration plan”, with a focus on developing coastal areas that are well managed and resilient to the interacting pressures of climate change, pollution, and other human activities. The Working Group will take a holistic approach and provide recommendations to increase the resilience of coastlines from ecological, social-economic, and governance perspectives.

A call for nominations for experts for this Working Group was launched during summer 2020, and resulted in 87 nominations from 15 countries. Prof. Sebastian Villasante, from the University of Santiago de Compostela in Spain was selected as Chair of the Working Group, and Dr. Kristin Richter, from NORCE Norwegian Research Centre & Bjerknes Centre for Climate Research in Norway as Co-Chair. The Working Group kicks-off in January 2021 and will aim to publish a Position Paper in 2022. This group is supported by EMB Secretariat Member Britt Alexander.

More information on this working group is available at: <https://www.marineboard.eu/coastal-resilience>



Coastal damage in Ostend, Belgium after storm Odette in September 2020 © EMB

## OCEAN OBSERVING



European  
Ocean  
Observing  
System

Since 2015, EMB and EuroGOOS have been working together to promote and facilitate the establishment of EOOS ([www.eoos-ocean.eu](http://www.eoos-ocean.eu)). Both networks Co-Chair the EOOS Steering Committee, which oversees the strategic planning of EOOS. After the

launch of the EOOS Strategy and Implementation Plan at the [EOOS conference](#) in November 2018, the EOOS Steering Committee worked to implement actions to foster the development of the EOOS vision. This included changes to the governance consisting of the constitution of a permanent Advisory Committee, Operations Committee and Resource Forum.

In spring 2020 the implementation of EOOS governance bodies was advanced through the new EuroGOOS Secretary General (Dr. Inga Lips), the resources provided by the H2020 EuroSea project, and the involvement of JPI Oceans in EOOS. The second meeting of the EOOS Advisory Committee took place in September 2020 under the leadership and support of the EMB Secretariat. The EOOS Operations Committee was officially established during their first meeting in November 2020, and includes the GOOS National Focal Points, and representatives from European Research Infrastructure Networks. This meeting was organised by EuroGOOS and supported by the EMB Secretariat.

At the Autumn Plenary the Board agreed to a Working Group on Sustained Funding for Ocean Observations. Due to the time-critical nature of this issue, an *ad hoc* Working Group was constituted to develop a Policy Brief by summer 2021. The Working Group consists of seven Members, is chaired by the EMB Executive Director, Prof. Sheila Heymans, and supported by EMB Science Officer Ángel Muñoz Piniella.

For more information on this Working Group see: <https://www.marineboard.eu/sustainable-funding-ocean-observations>



Buoy washed up in Oostende after storm Odette, October 2020 © EMB

## MARINE SCIENCE COMMUNICATION

The Working Group on Marine Science Communication is composed of and led by Members of the EMB Communication Panel (EMBCP, see also p34). The goal is to investigate how marine science is communicated to wider and more specific target audiences, such as final-year school students (i.e. the next generation). By sketching and analysing the state of the art and ways in which different marine research organizations frame their communication and outreach, recommendations will be provided. The resulting publication will include successful examples of marine science communication in Europe that have had far-reaching impact, whether in quantity or quality/originality. It will look at lessons learnt during the process of communication, the role of different stakeholders, and the relative costs of marine science communication.

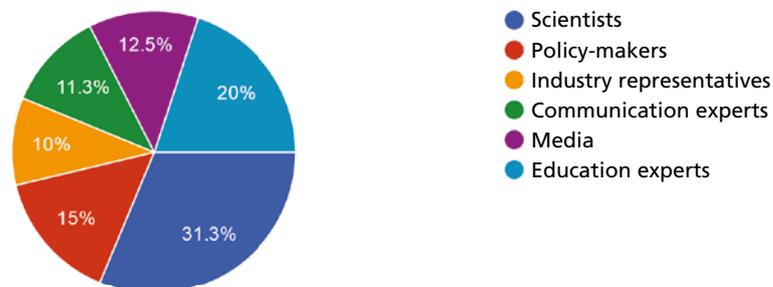
The EMBCP developed two targeted surveys in 2020 that will provide input to the drafting of the publication in 2021. The first is an expert survey that ran from May to June 2020. The second is a student survey that began in September 2020 and was extended until December 2020 due to the implications on schools from the COVID-19 pandemic. These surveys will give an idea of how marine science results find their way towards the wider public in Europe.

The EMBCP are also mapping the current staff efforts and responsibilities within different EMB Member organizations to illustrate the plethora of responsibilities science communication departments have with sometimes limited resources. This analysis will yield recommendations on minimum requirements for Oceanographic Institutes and their communications teams. The final Future Science Brief is expected in 2021.

The figure below shows a preliminary result of the expert survey that received responses from 80 experts all over Europe, well-distributed over the six regional seas.

To which category do you belong. Tick the most appropriate category.

80 responses



# European projects

The EMB participates in externally funded projects and tenders, when these contribute to our Mission and future strategic objectives.



Big Sand, Wester Ross © Dzintra Grinbergs



## Seas, Oceans & Public Health in Europe

In response to the Horizon 2020 framework call BG-06-2017: *Interaction between people, oceans and seas: a strategic approach towards healthcare and well-being*, the EMB Secretariat, together with a consortium of seven partners from the UK, Ireland, the Netherlands, Spain, and Belgium developed a Coordinated Support Action (CSA) proposal entitled “Seas, Oceans and Public Health in Europe (SOPHIE)”. The main aim of the project was to significantly advance the coordination of multidisciplinary research and training in Europe on Oceans and Human Health (OHH) to better manage the risks and opportunities presented by the complex interactions between the marine environment and human health and wellbeing. The project was coordinated by University of Exeter’s European Centre for Environmental and Human Health (ECEHH) and ran from December 2017 until May 2020.

More information about the SOPHIE project can be found at: <https://sophie2020.eu/>

EMB were the leaders for Work Package 6 (WP6): “Building a Future Policy-Relevant Oceans and Human Health Research Effort in Europe” and led the creation of a Strategic Research Agenda (SRA) for Ocean and Human Health in Europe. The structure and main topics of the SRA were defined by an Expert Group of 20 international OHH experts in two dedicated in-person workshops held in Dublin in 2018 and Ostend in 2019. The SRA also gathered input from all of the other SOPHIE project activities and stakeholders. The [SRA](#) was published in March 2020 and was launched at a dedicated webinar on 30 March 2020, which was attended by over 240 people from across the world.



SOPHIE project partners and Expert Group Members at the 2<sup>nd</sup> project meeting and workshop in Ostend, 2019



Target Action Areas for the SOPHIE Strategic Research Agenda

The SRA received significant attention and has already been cited in a number of publications, including in IOC-UNESCO's [Global Ocean Science Report 2020](#). EMB also published its Policy Brief No. 8 on "[Policy Needs for Oceans and Human Health](#)" which summarised the main messages of the SRA. It also included messages from the [SOPHIE Policy Report](#) produced by Seascope Belgium.



A graphic from the SOPHIE policy brief highlighting the positive and negative outcomes for Oceans and Human Health.  
© Jacob Bentley

The project ended in May 2020, but the EMB has continued to communicate the outcomes of this project. To coincide with World Oceans Day on 8 June 2020, EMB and the SOPHIE Project co-organized a webinar with the SEARICA European Parliamentary Intergroup on "How is our health linked to the Ocean?". The EMB and the SOPHIE project also co-organized a webinar with IOC-UNESCO on 5 October 2020 on "The Ocean and Human Health", as part of the Ocean Decade Virtual Series. Both events were well attended and the recordings can be found on the [EMB YouTube Channel](#).

EMB Executive Director Sheila Heymans was invited to Co-Chair a session on 2 December 2020 at the Monaco International Symposium on "[Human Health and the Ocean in a Changing World](#)" and on 8 December 2020 she had the opportunity to repeat the key SOPHIE messages during the Ocean Decade virtual Series event on "[Co-designing the science we need for the ocean we want – Part 2](#)".

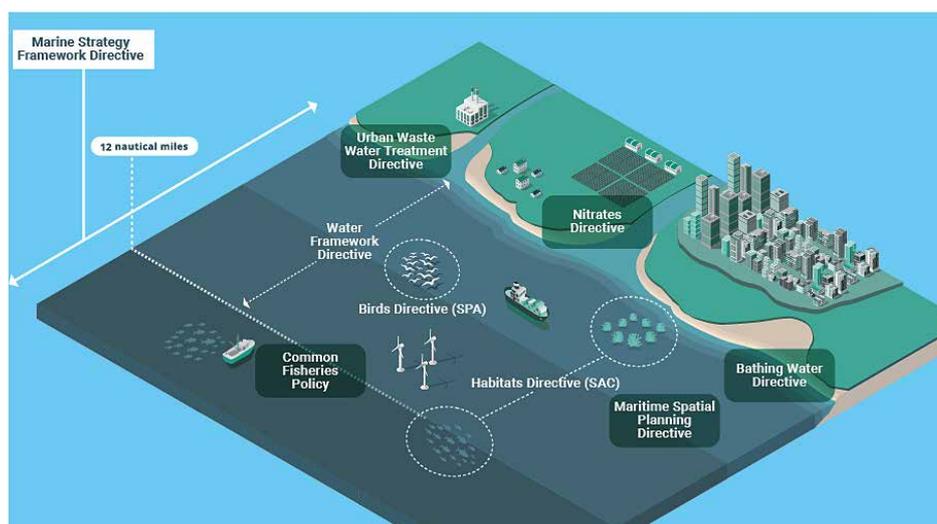


EuroSea “Improving and Integrating European Ocean Observing and Forecasting Systems for Sustainable use of the Oceans” is a €12.6m project funded under the EU Horizon 2020 programme. Coordinated by GEOMAR

Helmholtz Centre for Ocean Research in Kiel, Germany, the project 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 support its partners. EuroSea will increase the Technological Readiness Levels (TRL) of critical components of Ocean observations systems and tools, and in particular the TRL of the integrated Ocean observing system.

EMB is leading the task on Foresight on Ocean Observations in Work Package 1, in collaboration with EuroGOOS, IOC-UNESCO and GEOMAR. The main deliverable was a [report on initiatives, strategies and roadmaps that contribute to foresight in Ocean observation](#), which was finalised in July 2020. This report captures the major foresight initiatives and documents relevant for European Ocean observation and forecasting. It highlights more than 120 initiatives, strategies and roadmaps that contribute to foresight in Ocean observation internationally, at European scale, and regionally at the sea basin scale. This publication is primarily aimed at readers interested in learning more about the international and European Ocean observing and forecasting landscape.

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



European Directives regulating marine-related elements. ©EEA-ETC/ICM, prepared for WISE Marine portal

# EMFF TENDERS

## EMODnet tender in support of EOOS

Since September 2017, the EMB has worked as a partner in the EMODnet Phase 3 contract, led by Seascope Belgium. This tender is directly linked to EMB's work on EOOS as it involves contributing to the design, content planning and follow-up of EOOS activities (such as the EOOS Forum and Conference in 2018), and led to the set-up of the EOOS Advisory Committee, co-chaired by EMB. The initial period of the tender ran until September 2019, and was extended for an additional two-year term in October 2019. EMB will continue to support EOOS and its Call to Action, and will provide support for the EMODnet Conference, foreseen to take place in June 2021.



## International Ocean Governance

EMB is participating in the EASME/EMFF tender to establish an "International Ocean Governance Stakeholder Forum" (IOG Forum) to support the follow-up and further development of the International Ocean Governance Agenda for the Future of our Ocean.



This project aims to continue the advancement of the EU and its Member States in acting more strongly together as leading global actors in International Ocean Governance (IOG). The IOG Forum kicked-off with a series of [webinars](#) in April 2020. The EMB Secretariat wrote the discussion paper on "[Strengthening international Ocean research, data and knowledge](#)", and co-organized and facilitated the launch webinar.

In June and July 2020, the EMB Secretariat co-organized and facilitated a number of targeted online stakeholder workshops to work towards concrete recommendations on the aforementioned topic. During autumn 2020, the Secretariat assembled the key recommendations from these workshops into a discussion paper which formed the basis for the [2<sup>nd</sup> IOG Forum](#), which was held from 14-16 December 2020. The Secretariat facilitated three workshops on the Ocean Knowledge System, which aimed to further consolidate the actions proposed in the discussion paper. The EMB Secretariat are involved in drafting the final recommendations from the IOG Forum, which will be launched in spring 2021 during a high-level online event.

More information on the IOG Forum is available at: <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1469%C2%A0>

## Ocean Literacy

Since December 2019, EMB has participated in a project to implement the European Ocean Literacy Coalition (EU4Ocean). The coalition is made up of three components: a [Platform](#) for organizations and individuals engaged in Ocean Literacy initiatives, a [European Youth Forum](#) for the Ocean for young Ocean changemakers between 16 and 30 years old, and a [Network of European Blue Schools](#), with teachers and staff of education services bringing the Ocean into the classrooms. The EMB facilitates the thematic Working Groups to operationalize the EU4Ocean Platform, to help develop joint partnerships, concrete actions and co-design new Ocean literacy actions. The three Working Groups on Climate and Ocean, Food from the Ocean, and Healthy and Clean Ocean met in September and December 2020. These meetings were organized and facilitated by the EMB Secretariat in collaboration with the Chairs of the Working Groups and other coalition partners. The main aim of these meetings was to find synergies between the Members and explore possibilities to co-develop joint Ocean Literacy activities.



More information about the EU4Ocean Coalition is available at: [www.eu-oceanliteracy.eu](http://www.eu-oceanliteracy.eu)

# EMB panels

## UNIVERSITY CONSORTIUM PANEL

Due to the growing membership within EMB of Higher Education Institution (HEIs) consortia, the University Consortium Panel (EMB UCP) was created to explore areas of mutual interest with regards to research and education in the broadest sense. Key objectives of the Panel include: establishing a forum for HEI consortia; identifying and sharing best practice with respect to the governance and operation of these consortia, and opportunities for HEI consortia to collaborate across the EU or internationally; actively seeking to secure resources and funding to support graduate and PhD student training; promoting the consortia nationally and internationally; and adding value to existing and future EMB activities. This panel did not meet during 2020.

## EUROPEAN MARINE BOARD COMMUNICATION PANEL

The European Marine Board Communications Panel (EMBCP) provides a pan-European platform for marine science communicators to promote EMB activities, to synergize outreach activities, and to advocate Ocean Literacy. In 2020, 20 Members from 14 countries were part of EMBCP.

In 2020, the main activities of the EMBCP focussed on the preparation for the CommoOCEAN 2020 conference, organised online on 1-2 December 2020, and on the information gathering to inform the policy document on Marine Science Communication in Europe (see p28). The EMBCP met online twice in 2020, in March and November. Agenda points included the election of new Steering Group Members, the collaboration with EMB Working Groups, and promotion of the EMB publications, among others.



The CommoOCEAN 2020 conference, organized by the EMBCP, was to take place in Sopot, Poland. During summer 2020, it was decided to organize the conference as a free online event on 1-2 December 2020. The event was very successful, with more than 700 registrations and participants from all over the globe. Eleven breakout sessions showed different marine science communication activities and ocean-inspired art, and eight dedicated workshops extended

the skills of the participants. Attractive plenary sessions included presentations on the UN Decade of Ocean Science for Sustainable Development, nature documentaries, efforts on Ocean Literacy around the Baltic Sea, and tips on how to write an interesting journal article and engage in policy discussions. The conference proceedings and session recordings will be available in early 2021 via this link: <https://commocean.org/commocean-2020-proceedings-and-recordings>.

# 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, an online newsletter, and the EMB website. The EMB Facebook page is mostly used to repost information from Twitter or Instagram.

## 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 is involved in. All of EMB's publications are also available to download from the website free of charge.

In 2020, the website was visited 34,136 times, with visitors from 139 countries. There were 7,930 downloads of EMB documents from the EMB website, of which the top four were: EMB Position Paper No. 25 on "European Research Vessels", EMB Future Science Brief No. 6 "Big Data in Marine Science", EMB Position Paper No. 24 "Navigating the Future V", and EMB Policy Brief No. 8 "Policy Needs for Oceans and Human Health".

## EMB Newsletter

At the end of 2020, there were 1,651 subscribers to the EMB Newsletter, which is an increase of ca. 21% compared to 2019. You can subscribe to the EMB newsletter via the EMB website: <https://www.marineboard.eu/emb-newsletter>

## Twitter

In 2020, the EMB Twitter account (@EMarineBoard) gained ca. 1,200 new followers, leading to a total number of 7,325 followers as of the end of December 2020. 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 EMB to instantly update Member organizations and stakeholders on the events the Secretariat were attending.

## YouTube

The Secretariat has expanded the content of the EMB YouTube Channel significantly in 2020 due to the increase in online events. All public EMB events (i.e. Science webinars, Open Forum) are now live-streamed and available for re-play on the EMB YouTube Channel, along with various other outputs. The EMB YouTube channel had 228 subscribers as of the end of December 2020.

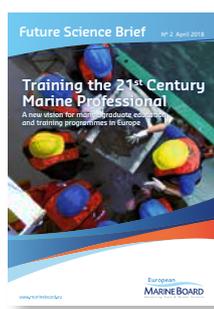
Follow EMB on YouTube at <https://www.youtube.com/channel/UCcBGY9lckBVRijeW-0a1CsQ>

## Instagram

The EMB Instagram account (@emarineboard) predominately aims to reach the marine science youth community and had 405 followers as of the end of December 2020. EMB Young Ambassador, Alba González Vega, initiated the set-up of the account. She also took over the EMB Instagram in the run up to the 7<sup>th</sup> EMB Forum and posted daily content to generate momentum and interest in the Forum.

## IMPACT FROM EMB PUBLICATIONS

The EMB Secretariat tracks the dissemination and impact of all of its documents for a period up to 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 2020.



### **Future Science Brief No. 2 on “Training the 21<sup>st</sup> Century Marine Professional”**

The EMB work on Marine Graduate Training was conducted by a Working Group of 11 Members from 2014 to 2018. The Working Group was chaired by Magda Vincx (Ghent University, Belgium), and the publication was completed with support from consultant Conor O’Carroll, Ireland. This paper was referred to in 11 news articles and was downloaded 2,920 times from the EMB website.



### **Future Science Brief No. 3 on “Strengthening Europe’s Capability in Biological Ocean Observations”.**

The marine biology community has highlighted this Future Science Brief as a good introduction to biological Ocean observation, setting the scene for policy needs and determining key strategic drivers for Ocean observation. It has been cited in the introductory chapters of several scientific papers, and used for university teaching. This document helps to build the case to integrate biological observations as part of projects such as EuroSea and the development of a Digital Twin Ocean. The EOO framework also contributes to this change based on the recommendations of the Future Science Brief. It has been cited in 14 peer reviewed journal articles.



### **Future Science Brief No. 4 on “Enhancing Europe’s Capability in Marine Ecosystem Modelling for Societal Benefit”**

This activity on end-to-end marine ecosystem modelling kicked off with a horizon scanning workshop ‘Shaping Future Research Agendas’ back-to-back with the AMEMR 2017 conference in Plymouth, UK. The Future Science Brief was presented at a number of events including the ICES WKEWIEA workshop on using Ecopath with Ecosim for Integrated Ecosystem Assessments, a SCARFISH meeting, and European Commission events at the Joint Research Centre in Ispra and in Brussels on modelling for policy. The Co-Chair was asked to co-author a book chapter and co-edit a research topic the journal in *Frontiers in Marine Science* based on the publication. It was downloaded 2,741 times from the EMB website and cited in 14 peer reviewed journal articles.

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

# Finances

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

## AVAILABLE FUNDS 2020

	EUR
<b>Member Contributions</b>	428,000
<b>FP drawdown on employment costs</b> Staff time related to the external projects	166,981
<b>Other income</b>	283
<b>In kind contribution from Flemish Government through the Flanders Marine Institute</b>	157,043
<b>Total available funds</b>	<b>752,307</b>

## EXPENDITURE 2020

	EUR
<b>Secretariat employment costs</b>	350,166
<b>Meetings, Travel &amp; Ambassador Programme</b>	13,282
<b>Project costs</b>	18,253
<b>Publications &amp; dissemination</b>	9,466
<b>Running expenses and other costs</b>	14,246
<b>Costs covered by the Flanders Marine Institute</b>	157,043
<b>Total</b>	<b>562,456</b>

## RESERVE FUND

	EUR
Available funds 2020	752,307
Expenditure 2020	562,456
<b>Total 2020 balance</b>	189,845
<b>2019 carry over</b>	386,564
<b>Total</b>	<b>576,409</b>

# Annexes

## ANNEX 1:

### Marine Board Member organizations, Delegates and Alternates

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#### BELGIUM

Belgian Science Policy Office (BELSPO)  
*Koen Lefever*

Fonds National de la Recherche Scientifique (FNRS)  
National Fund for Scientific Research  
*Jean-Marie Beckers*

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

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#### CROATIA

Institut za oceanografiju i ribarstvo (IZOR)  
Institute of Oceanography and Fisheries  
*Ivica Vilibić*

Institut Ruđer Bošković (IRB)  
Ruđer Bošković Institute  
*Martin Pfannkuchen*  
*Daniela Marić Pfannkuchen*

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#### DENMARK

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

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#### ESTONIA

Eesti Teaduste Akadeemia  
Estonian Academy of Sciences  
*Tarmo Soomere*  
*Kalle Olli*

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#### FRANCE

Centre National de la Recherche Scientifique  
(CNRS)  
National Centre for Scientific Research  
*Jean-Marie Flaud*  
*Bruno Blanke*

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

Universités Marines  
Marine Universities of France  
*Yves-Marie Paulet (vice-Chair)*  
*François Lallier*

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#### GERMANY

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

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

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#### GREECE

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

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#### IRELAND

Marine Institute  
*Fiona Grant (vice-Chair)*  
*Niall McDonough*

Irish Marine Universities Consortium  
*Jeremy Gault (vice-Chair)*  
*Anthony Grehan*  
*Colin Brown*

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#### 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 Experimental  
Geophysics  
*Cosimo Solidoro*

Consorzio Nazionale Interuniversitario per le  
Scienze del Mare (CoNISMa)  
National Inter-University Consortium for Marine  
Sciences  
*Ferdinando Boero (vice-Chair)*  
*Lisandro Benedetti-Cecchi*

Stazione Zoologica Anton Dohrn (SZN)  
Anton Dohrn Marine Station  
*Roberto Danovaro*  
*Adriana Zingone*

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## THE NETHERLANDS

Koninklijk Nederlands Instituut voor Onderzoek der Zee

Royal Netherlands Institute for Sea Research (NIOZ)

*Henk Brinkhuis*

*Gert-Jan Reichart*

**Deltares**

*Bianca Peters*

*Sharon Tatman*

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## NORWAY

Havforskningsinstituttet

Institute of Marine Research (IMR)

*Henning Wehde*

*Karin Kroon Boxaspen*

**Norges forskningsrad**

The Research Council of Norway (RCN)

*Christina Abildgaard*

**Norsk Marint Universitetskonsortium**

Norwegian Marine University Consortium

*Susanna Pakkasmaa*

*Nils Gunnar Kvamstø*

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## POLAND

Instytut Oceanologii Polskiej Akademii Nauk (IO-PAN)

Institute of Oceanology of the Polish Academy of Sciences

*Sławomir Sagan*

*Monika Kedra*

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## PORTUGAL

Centro de Investigação Marinha e Ambiental (CIMAR)

Centre of Marine and Environmental Research

*Vitor Vasconcelos*

*Adelino Canario*

**Fundação para a Ciência e a Tecnologia (FCT)**

Foundation for Science and Technology

*Sofia Cordeiro*

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## ROMANIA

Romanian Black Sea Research Cluster

*Vasile Patrascu*

*Elena Stoica*

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## SPAIN

Instituto Espanol de Oceanografia (IEO)

Spanish Institute of Oceanography

*Carlos Garcia Soto (vice-Chair)*

**Centro Tecnológico del Mar (CETMAR)**

Technological center of the Sea

*Rosa Fernández*

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## SWEDEN

Göteborgs universitet

University of Gothenburg (UGOT)

*Per Hall*

*Per Åberg*

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## TURKEY

Türkiye Bilimsel ve Teknik Arastirma Kurumu

TÜBİTAK

Scientific and Technological Research Council of Turkey

*Leyla Tolun*

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## UNITED KINGDOM

Marine Alliance for Science and Technology

Scotland (MASTS)

*Mark James (vice-Chair)*

*David Paterson*

**National Oceanography Centre (NOC)**

*Edward Hill*

**Natural Environment Research Council (NERC)**

*Mike Webb*

*Alan Evans (vice-Chair)*

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## ANNEX 2:

### Participants of EMB plenary meetings 2020

#### Spring Plenary Meeting, 27-28 May 2020, Online

##### EMB DELEGATES

Representative	Member Organization
ALAN EVANS	Natural Environment Research Council
ALEXANDRA DROSSOU-BERENDES	Helmholtz Centre For Ocean Research Kiel
AMUND MÅGE	Norwegian Marine University Consortium
BIANCA PETERS	Deltares
CARLOS GARCIA-SOTO	Instituto Español de Oceanografía
CHRISTINA ABILDGAARD	The Research Council of Norway
DOMINIQUE SIMON	Marine Universities Consortium France
ED HILL	National Oceanography Centre
FERDINANDO BOERO	National Inter-University Consortium for Marine Sciences
FIONA GRANT	Marine Institute
FRANÇOIS LALLIER	Marine Universities Consortium France
GEORGE PETIHAKIS	Hellenic Centre for Marine Research
GERT-JAN REICHART	Royal Netherlands Institute for Sea Research
GILLES LERICOLAIS (CHAIR)	French Institute for the Exploitation of the Sea
HENNING WEHDE	Institute of Marine Research
ISABEL SOUSA-PINTO	Centre for Marine and Environmental Research
IVICA VILIBIĆ	Institute of Oceanography and Fisheries
JAN MEES	Research Foundation Flanders
JAN-STEFAN FRITZ	German Marine Research Consortium
JEREMY GAULT	Irish University Consortium
KATRIN SCHROEDER	National Research Council Italy
KOEN LEFEVER	Belgian Science Policy Office
LENA GIPPERTH	University of Gothenburg
MARK JAMES	Marine Alliance for Science & Technology for Scotland
PATRIZIO MARIANI	National Institute for Aquatic Resources
PER HALL	University of Gothenburg
RALPH SCHNEIDER	German Marine Research Consortium
ROBERTO DANOVARO	Stazione Zoologica di Napoli
ROSA FERNÁNDEZ	Centro Tecnológico del Mar
SHARON TATMAN	Deltares
SLAWOMIR SAGAN	Institute of Oceanology Polish Academy of Sciences
SUSANNA PAKKASMAA	Norwegian Marine University Consortium
TARMO SOOMERE	Estonian Academy of Sciences
VASILE PATRASCU	Romanian Black Sea Research Cluster
YVES-MARIE PAULET	Marine Universities Consortium France

## OBSERVERS, SPEAKERS AND GUESTS

<b>Representative</b>	<b>Organization</b>
<b>LIAM LACHS</b>	EMB Young Ambassador
<b>ALBA GONZÁLEZ VEGA</b>	EMB Young Ambassador
<b>NATALIJA DUNIĆ</b>	EMB Young Ambassador
<b>ALESSANDRO CRESCI</b>	EMB Young Ambassador
<b>ALENA PETRIKOVICOVA</b>	DG MARE
<b>ANDREEA STRACHINESCU</b>	DG MARE
<b>NICOLAS SEGEBARTH</b>	DG RTD
<b>INGA LIPS</b>	EuroGOOS

## Autumn Plenary Meeting, 4-5 November 2020, Online

### EMB DELEGATES

Representative	Member Organization
ADRIANA ZINGONE	Stazione Zoologica di Napoli 'Anton Dohrn
ALAN EVANS	National Oceanography Centre
ALEXANDRA DROSSOU-BERENDES	Helmholtz Centre For Ocean Research Kiel
AMUND MÂGE	Norwegian Marine University Consortium
CARLOS GARCIA-SOTO	Instituto Español de Oceanografía
CHRISTIAN RIISAGER-SIMONSEN	DTU Aqua
CHRISTINA ABILDGAARD	Research Council Norway
DANIELA MARIC PFANNKUCHEN	Ruder Boskovic Institute
DOMINIQUE SIMON	Marine Universities Consortium France
ED HILL	National Oceanography Centre
ELENA STOICA	Romanian Black Sea Research Consortium
FIONA GRANT	Marine Institute
FRANÇOIS LALLIER	Marine Universities Consortium France
GEORGE PETIHAKIS	Hellenic Centre for Marine Research
GERT-JAN REICHART	Royal Netherlands Institute for Sea Research
GILLES LERICOLAIS (CHAIR)	French Institute for the Exploitation Of The Sea
FRANÇOIS LALLIER	Marine Universities Consortium France
GEORGE PETIHAKIS	Hellenic Centre for Marine Research
IVICA VILIBIĆ	Institute of Oceanography and Fisheries
JAN MEES	Flanders Marine Institute
JEAN-MARIE FLAUD	CNRS
JEREMY GAULT	Irish University Consortium
KATJA MATTHES	Helmholtz Centre for Ocean Research Kiel
KATRIN SCHROEDER	National Research Council Italy
LENA GIPPERTH	University of Gothenburg
LEYLA TOLUN	TÜBITAK
LISANDRO BENEDETTI-CECCHI	CoNISMa
MARK JAMES	Marine Alliance for Science & Technology for Scotland
MARTIN PFANNKUCHEN	Ruder Boskovic Institute
PER ÅBERG	University of Gothenburg
RALPH SCHNEIDER	German Marine Research Consortium
ROSA FERNÁNDEZ	Centro Tecnológico del Mar
SHARON TATMAN	DELTARES
SLAWOMIR SAGAN	Institute Of Oceanology Polish Academy Of Sciences
SOFIA CORDEIRO	FCT
SUSANNA PAKKASMAA	Norwegian Marine University Consortium
TARMO SOOMERE	Estonian Academy of Sciences
TERESA COURINHA	FCT
VASILE PATRASCU	Romanian Black Sea Research Consortium
YVES-MARIE PAULET	Marine Universities Consortium France

## OBSERVERS, SPEAKERS AND GUESTS

<b>Representative</b>	<b>Organization</b>
<b>LIAM LACHS</b>	EMB Young Ambassador
<b>ALBA GONZÁLEZ VEGA</b>	EMB Young Ambassador
<b>NATALIJA DUNIĆ</b>	EMB Young Ambassador
<b>ALESSANDRO CRESCI</b>	EMB Young Ambassador
<b>EMMA HESLOP</b>	IOC-UNESCO
<b>THORSTEN KIEFER</b>	JPI-Oceans
<b>LARISA LORINCZI</b>	DG RTD

## ANNEX 3: WORKING GROUP MEMBERS 2020

### Working Group European Research Vessels

#### Working Group Members:

- Per Nieuwejaar, Institute of Marine Research (IMR), Norway - WG Chair
- Valérie Mazaauric, Ifremer, France - WG Co-Chair
- Christian Betzler, University of Hamburg, Germany
- Mafalda Carapuço, Instituto Português do Mar e da Atmosfera (IMPA), Portugal
- André Cattrijsse, Flanders Marine Institute (VLIZ), Belgium
- Franco Coren, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Italy
- Juanjo Dañobeitia, European Multidisciplinary Seafloor and Water-Column Observatory (EMSO), Italy
- Colin Day, National Oceanographic Centre (NOC), UK
- Aodhan Fitzgerald, Marine Institute, Ireland
- Stefan Florescu, GeoEcoMar, Romania
- Jose Ignacio Diaz, Spanish Institute of Oceanography (IEO), Spain
- Michael Klages, University of Gothenburg, Sweden
- Erica Koning, Netherlands Institute for the Sea (NIOZ-NMF), Netherlands
- Olivier Lefort, Ifremer, France
- Giuseppe Magnifico, Italian National Research Council (CNR), Italy
- Øystein Mikelborg, Norwegian Polar Institute, Norway
- Lieven Naudts, Royal Belgian Institute of Natural Sciences (RBINS - OD Nature), Belgium

#### EMB Secretariat Support:

Paula Kellett

### Working Group Big Data

#### Working Group Members:

- Lionel Guidi, Laboratoire d'Océanographie de Villefranche sur Mer (LOV), France – WG Chair
- Antonio Fernandez-Guerra, Max Planck Institute for Marine Microbiology, Germany – WG Co-Chair
- Matthias Obst, University of Gothenburg, Sweden
- Tara Marshall, University of Aberdeen, Scotland
- Edward Curry, Data Science Institute at NUI Galway, Ireland
- Jean-Olivier Irisson, Laboratoire d'Océanographie de Villefranche sur Mer (LOV), France
- Federica Foglini, CNR (Istituto di Scienze Marine, ISMAR), Italy
- Ketil Malde, University of Bergen & Institute of Marine Research, Norway
- Jerry Tjiputra, NORCE Norwegian Research Centre, Norway
- Carlos Canchaya, University of Vigo, Spain
- Rita Ribeiro, Faculty of Sciences of University of Porto/ INESC TEC – LIAAD, Portugal
- Dorothee Bakker, University of East Anglia, UK

#### EMB Secretariat Support:

Britt Alexander

## Working Group Marine Geohazards

### Working Group Members:

- Heidrun Kopp, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany – WG Chair
- Francesco Chiocci, University of Rome “Sapienza”, Italy – WG Co-Chair
- Nabil Sultan, Ifremer, France
- Christian Berndt, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany
- Mathilde B. Sørensen, Department of Earth Science, University of Bergen, Norway
- Asgeir Sorteberg, Geophysical Institute, Norway
- Teresa Ferreira, University of the Azores, Portugal
- Conceição Fortes, LNEC - National Laboratory for Civil Engineering, Portugal
- Eulàlia Gràcia, ICM-CSIC, Spain
- M. Namik Çağatay, Istanbul Technical University, Turkey
- Isobel Yeo, National Oceanographic Centre (NOC), UK
- Achim Kopf, MARUM, Germany
- Alba Gonzalez Vega, IEO, Spain and EMB Young Ambassador

### EMB Secretariat Support:

Ángel Muñoz Piniella

## Working Group Underwater Noise

### Working Group Members:

- Frank Thomsen, DHI, Denmark – WG Chair
- Sonia Mendes, JNCC, UK – WG Co-Chair
- Carina Juretzek, Federal Maritime and Hydrographic Agency of Germany (BSH), Germany
- Cecile Ducatel, Ifremer, France
- Elena Ciappi, Italian National Research Council (CNR), Italy
- Elisabeth Debusschere, Flanders Marine Institute (VLIZ), Belgium
- Frans-Peter Lam, TNO, Netherlands
- Frederic Bertucci, Laboratoire BOREA, France
- Joanne O’Brien, Galway-Mayo Institute of Technology (GMIT), Ireland
- Manuel dos Santos, ISPA, Portugal
- Monika Breitzke, Germany
- Thomas Folegot, Quiet-Ocean, France
- Alessandro Cresci, Institute of Marine Research, Norway and EMB Young Ambassador

### EMB Secretariat Support:

Paula Kellett

## Working Group Coastal Resilience

### Working Group Members:

- Sebastian Villasante, University of Santiago de Compostella, Spain – WG Chair
- Kristin Richter, NORCE, Norway – WG Co-Chair
- Andres Payo, British Geological Survey, UK
- Donata Melaku Canu, OGS, Italy
- Eugene Farrell, National University Ireland Galway, Ireland
- Frederic Bouchette, Université de Montpellier, France
- Isabel Sousa Pinto, University of Porto, Portugal
- Jennifer Bailey, NTNU, Norway
- Karen Timmermann, DTU Aqua, Denmark
- Margaret Chen, Vrije Universiteit Brussels, Belgium
- Remi Mongruel, Ifremer, France
- Thorsten Blenckner, Stockholm Resilience Center, Sweden
- Tjeerd Bouma, NIOZ, The Netherlands
- Liam Lachs, Newcastle University, UK and EMB Young Ambassador

### EMB Secretariat Support:

Britt Alexander, Joke Coopman

## ANNEX 4: Panel Members 2020

### European Marine Board Communications Panel (EMBCP)

#### Panel Members:

- Lucy Cox, National Oceanography Centre (NOC), United Kingdom – Panel Chair
- Ferdinando Boero, National Inter-University Consortium for Marine Sciences (CoNISMa), Italy
- Sheila Byrnes - Marine Institute (MI), Ireland
- Daria Ezgeta Balic - Institute of Oceanography and Fisheries (IZOR), Croatia
- Marco Faimali - National Research Council, Institute of Marine Sciences (ISMAR, CNR), Italy
- M<sup>a</sup> Carmen García Martínez - Spanish Institute of Oceanography (IEO), Spain
- Géraldine Guillevic - French Research Institute for Exploitation of the Sea (Ifremer), France
- Kathrin Kopke - University College Cork (UCC), Ireland
- Kelle Moreau - Royal Belgian Institute of Natural Sciences (RBINS), Belgium
- Kjartan Mæstad - Institute of Marine Research (IMR), Norway
- Martha Papathanassiou - Hellenic Centre for Marine Research (HCMR), Greece
- Mette Mila - Research Council of Norway (RCN), Norway
- Francesca Petrera - National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Helle Falborg - National Institute of Aquatic Resources (DTU Aqua), Denmark
- José Teixeira - Centre of Marine and Environmental Research (CIIMAR), Portugal
- Kim Sauter - Royal Netherlands Institute for Sea Research (NIOZ), The Netherlands
- Jan Seys, Flanders Marine Institute (VLIZ), Belgium
- Dominique Simon - Réseau des Universités Marines Françaises (Marine Universities of France), France
- Andreas Villwock - Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany
- Tymon Zielinski - Institute of Oceanology of the Polish Academy of Sciences (IO-PAN), Poland

#### EMB Secretariat Support:

Ángel Muñoz Piniella

### University Consortiums Panel

#### Panel Members:

- Mark James, Marine Alliance for Science and Technology for Scotland (MASTS), United Kingdom - Panel Chair
- Yves-Marie Paulet, Universités Marines, France
- Dominique Simon, Universités Marines, France
- Lisandro Benedetti-Cecchi, CoNISMa, Italy
- Jeremy Gault, Irish Marine Universities Consortium, Ireland
- Anthony Grehan, Irish Marine Universities Consortium, Ireland

#### EMB Secretariat Support:

Paula Kellett

## ANNEX 5: Meetings and events organized in 2020 (including jointly)

Date	Event and Venue
22-23/01/2020	CETMAR-MATES stakeholder workshop on European Research Vessels, Vigo
14/01/2020	EMB ExCom meeting, Brussels
14/01/2020	EMB Brown Bag Lunch on Blue Carbon, Brussels
29/01/2020	EMBCP Steering Group meeting, online
10-11/02/2020	EMB WG Marine Geohazards Kick-off meeting, Rome
18/02/2020	Meeting with EFARO, Ostend
04/03/2020	EMBCP Steering Group meeting, online
09/03/2020	EMB Working Group Geohazards Meeting, online
17/03/2020	EMB Young Ambassadors Call, online
17/04/2020	EMB Working Group Geohazards Meeting, online
17/04/2020	EOOS Steering Group Meeting, online
22-24/04/2020	International Ocean Governance Forum Launch, online
29/04/2020	EMB Webinar on Big Data in Marine Science, online
30/04/2020	EMBCP Meeting, online
19/05/2020	EMB Working Group Geohazards Meeting, online
25/05/2020	EMB Young Ambassadors Call, online
26/05/2020	EMB ExCom meeting, online
27-28/05/2020	EMB Spring Plenary Meeting 2020, online
03/06/2020	EMB Working Group Geohazards Meeting, online
08/06/2020	EMB Working Group Underwater Noise Kick-Off Meeting, online
08/06/2020	How is our health linked to the ocean?, online
15/06/2020	EMB ExCom meeting, online
17/06/2020	EMB Working Group Geohazards Meeting, online
30/06/2020	EMB Working Group Underwater Noise Meeting, online
06, 08, 09/07/2020	IOG Forum workshops, online
15/07/2020	EMB Working Group Geohazards Meeting, online
27/07/2020	EMB Young Ambassadors Call, online
20/08/2020	EMB Science Webinar – Marine Ecosystem Modelling, online
01, 02, 03/09/2020	EU4Ocean Working Group Meetings, online
01/09/2020	EMB Working Group Underwater Noise Meeting, online
02/09/2020	EMB Working Group Geohazards Meeting, online
11/09/2020	EMBCP Steering Group meeting, online
14/09/2020	EMB Young Ambassadors Call, online
17/09/2020	EMB Science Webinar – NFV, online
18/09/2020	EOOS Advisory Board Meeting, online

<b>Date</b>	<b>Event and Venue</b>
01/10/2020	EMB Working Group Geohazards Meeting, online
05/10/2020	Ocean Decade Virtual Series OHH Webinar, online
12/10/2020	Sea Tech Week workshop on training, online
15/10/2020	EMB Science Webinar – Prehistoric Underwater Landscapes, online
19/10/2020	EMB Young Ambassadors Call, online
23/10/2020	EMB 7 <sup>th</sup> Forum on Big Data in Marine Science, online
26/10/2020	EMB Working Group Geohazards Meeting, online
27/10/2020	EMB Young Ambassadors Call, online
03/11/2020	EMB ExCom Meeting, online
04-05/11/2020	EMB Autumn Plenary 2020 Meeting, online
05/11/2020	EU4Ocean Working Group Meeting, online
19/11/2020	EMB Science Webinar – Marine Citizen Science, online
19/11/2020	EMB Working Group Underwater Noise Meeting, online
20/11/2020	EMBCP Meeting, online
30/11/2020	EMB Young Ambassadors Call, online
01-02/12/2020	CommOCEAN 2020 Conference, online
09/12/2020	EU4Ocean Working Group Meeting, online
14-16/12/2020	IOG Forum, online
14, 16, 17/12/2020	EMB Working Group Geohazards Meetings, online

## ANNEX 6:

### Presentations to meetings by EMB Secretariat and ExCom Members in 2020

Date	Event and Venue	Speaker(s)
13-14/01/2020	JPI Oceans Underwater noise workshop, Rome	Paula Kellett
14-15/01/2020	Ocean Literacy 4 All Kick-off meeting, Brussels	Sheila Heymans, Ángel Muñoz Piniella
28/01/2020	JPI Oceans Get together, Brussels	Sheila Heymans
30/01/2020	MASTS Leader Conversation Discussion, online	Sheila Heymans
12-13/02/2020	EMSO Conference: Preparations for the Ocean Decade, Athens	Sheila Heymans
12/02/2020	Hack4Oceans Youth Innovation event ideation, Brussels	Ángel Muñoz Piniella
10/03/2020	ECRA-Climate Meeting, Brussels	Sheila Heymans
31/03/2020	People, Health and the Ocean (SOPHIE Project Webinar), online	Sheila Heymans, Paula Kellett
22-24/04/2020	IOG Forum webinars, online	Sheila Heymans, Britt Alexander
08/06/2020	How is our health linked to the ocean?, online	Sheila Heymans
08/06/2020	EMB working group underwater noise kick-off meeting, online	Sheila Heymans, Paula Kellett
11/06/2020	NMU-NOAH Kick-Off Meeting, online	Sheila Heymans
12/06/2020	AirCentre Networking Friday – 25 years of EMB's marine research activities, online	Sheila Heymans
23-24/06/2020	IOG Forum webinar, online	Sheila Heymans, Britt Alexander
02-03/07/2020	IOG Forum webinar, online	Sheila Heymans, Britt Alexander
06-09/07/2020	IOG Forum webinar, online	Sheila Heymans, Britt Alexander, Paula Kellett
10/07/2020	SOPHIE project evaluation meeting, online	Sheila Heymans, Paula Kellett
01-04/09/2020	EU4Ocean Working Group Meetings, online	Ángel Muñoz Piniella, Sheila Heymans, Paula Kellett
18/09/2020	EOOS Advisory Board, online	Sheila Heymans, Ángel Muñoz Piniella
24-25/09/2020	EU4Ocean webinar, online	Ángel Muñoz Piniella, Sheila Heymans, Paula Kellett
02/10/2020	ESA Digital Ocean Twin Workshop, online	Sheila Heymans

<b>Date</b>	<b>Event and Venue</b>	<b>Speaker(s)</b>
<b>05/10/2020</b>	Ocean Decade Virtual Series OHH Webinar, online	Sheila Heymans
<b>12/10/2020</b>	UK Royal Society Ocean Decade meeting, online	Sheila Heymans
<b>12/10/2020</b>	Sea Tech Week workshop on training, online	Sheila Heymans, Gilles Lericolais
<b>27/10/2020</b>	Sustainable Blue Economy event, online	Sheila Heymans
<b>05/11/2020</b>	EU4Ocean working group meeting, online	Ángel Muñoz Piniella
<b>12/11/2020</b>	EOOS Steering Group meeting, online	Sheila Heymans, Paula Kellett
<b>20/11/2020</b>	Business2Sea Forum, online	Sheila Heymans
<b>24-25/11/2020</b>	EOOS Operations Committee, online	Sheila Heymans, Ángel Muñoz Piniella
<b>1-2/12/2020</b>	CommOCEAN 2020 Conference, online	Gilles Lericolais, Ángel Muñoz Piniella
<b>2/12/2020</b>	ICES WGMLEARN Meeting, online	Sheila Heymans
<b>2/12/2020</b>	Monaco OHH Conference, online	Sheila Heymans
<b>8/12/2020</b>	IOC Webinar “Co-designing the science we need for the ocean we want: Part 2”, online	Sheila Heymans
<b>9/12/2020</b>	EU4Ocean working group meeting, online	Ángel Muñoz Piniella
<b>14-16/12/2020</b>	IOG Forum webinar, online	Sheila Heymans, Paula Kellett
<b>16-17/12/2020</b>	EU4Ocean working group meetings, online	Ángel Muñoz Piniella

## ANNEX 7:

### Member contributions 2020

Marine Board Member	Country	Contribution 2020 / €
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, IZOR	Croatia	€ 3.000
Ruder Boskovic Institute, IRB	Croatia	€ 3.000
National Institute for Aquatic Resources, DTU Aqua	Denmark	€ 12.000
Estonian Academy of Sciences, ETA	Estonia	€ 8.000
Universités Marines, UM	France	€ 17.000
French Research Institute for Exploitation of the Sea, IFREMER	France	€ 17.000
National Centre for Scientific Research, CNRS	France	€ 17.000
German Marine Research Consortium, KDM	Germany	€ 17.000
Helmholz Centrum for Ocean Research, 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 Institute of Oceanography and Experimental Geophysics, OGS	Italy	€ 17.000
National Research Council, CNR	Italy	€ 17.000
National Inter-University Consortium for Marine Sciences, CoNISMa	Italy	€ 17.000
Stazione Zoologica Napoli Anton Dorhn, SNZ	Italy	€ 17.000
DELTA <sup>1</sup>	Netherlands	€ 6.000
Royal Netherlands Institute for Sea Research, NIOZ	Netherlands	€ 12.000
Norwegian Marine University Consortium, NMUC	Norway	€ 12.000
Research Council of Norway, RCN	Norway	€ 12.000
Institute of Marine Research, IMR <sup>2</sup>	Norway	€ 12.000
Institute of Oceanology - Polish Academy of Sciences, IO-PAN	Poland	€ 8.000
Science and Technology Foundation, FCT	Portugal	€ 8.000
Centre of Marine and Environmental Research, CIIMAR	Portugal	€ 8.000
Romanian Black Sea Research Cluster, RBSR	Romania	€ 8.000
Spanish Institute of Oceanography, IEO	Spain	€ 12.000
CETMAR	Spain	€ 12.000
University of Gothenburg, UGOT	Sweden	€ 12.000
Scientific and Technological Research Council of Turkey, TÜBİTAK	Turkey	€ 8.000
Natural Environment Research Council, NERC	UK	€ 17.000
National Oceanography Centre, NOC <sup>3</sup>	UK	€ 17.000
Marine Alliance of Science and Technology Scotland, MASTS	UK	€ 17.000
<b>Total</b>	<b>35</b>	<b>€ 428.000</b>

<sup>1</sup> Only 50% of the annual membership fee has to be paid by Members that join during the Spring Plenary meeting

<sup>2</sup> Paid by Research Council of Norway

<sup>3</sup> Paid by NERC

## ANNEX 8:

### Full list of EMB publications

#### PUBLICATIONS IN 2020:

- European Marine Board. **Policy Needs for Oceans and Human Health**. EMB Policy Brief N°. 8, May 2020. ISSN: 0778-3590 ISBN: 9789492043962 DOI: 10.5281/zenodo.3822099
- Guidi, L., Fernandez Guerra, A., Canchaya, C., Curry, E., Foglini, F., Irisson, J.-O., Malde, K., Marshall, C. T., Obst, M., Ribeiro, R. P., Tjiputra, J., Bakker, D. C. E. (2020) **Big Data in Marine Science**. Alexander, B., Heymans, J. J., Muñiz Piniella, A., Kellett, P., Coopman, J. [Eds.] Future Science Brief 6 of the European Marine Board, Ostend, Belgium. ISSN: 2593-5232. ISBN: 9789492043931. DOI: 10.5281/zenodo.3755793
- European Marine Board. **Next Generation European Research Vessels**. EMB Policy Brief N°. 7, March 2020. ISSN: 0778-3590 ISBN: 9789492043870 DOI: 10.5281/zenodo.3639005
- Heymans, J., Coopman, J., Kellett, P., Muñiz Piniella, A., Alexander, B. **European Marine Board Annual Report 2019**. European Marine Board, Ostend, Belgium. 2020. ISSN 2565-7402. 59pp

#### POSITION PAPERS:

- Nieuwejaar, P., *et al.* (2019) **Next Generation European Research Vessels: Current Status and Foreseeable Evolution**. Heymans, JJ., Kellett, P., Viegas, C., Alexander, B., Coopman, J., Muñiz Piniella, Á. [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 Carapuço, Andre Cattrijsse, Franco Coren, Juanjo Danobeitia, Colin Day, Aodhan Fitzgerald, Stefan Florescu, Jose Ignacio Diaz, Michael Klages, Erica Koning, Olivier Lefort, Giuseppe Magnifico, Øystein 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
- Garcia Soto, C., *et al.* (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; Contributing 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 Węszłowski, Oliver Zielinski
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