

Annual Report 2014

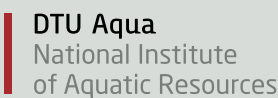
EUROPEAN MARINE BOARD

The European Marine Board provides a 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 was established in 1995 to facilitate enhanced cooperation between European organizations involved in marine science. Today, EMB represents European research funding bodies, leading research institutes and nationally-based consortia of third-level institutes. Through the EMB, these organizations are working together towards a common European vision on the research priorities and strategies for marine science.

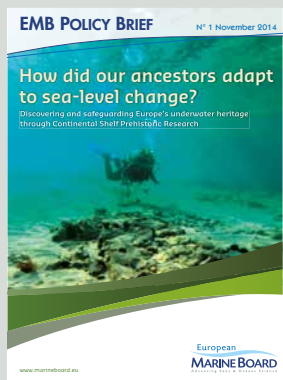
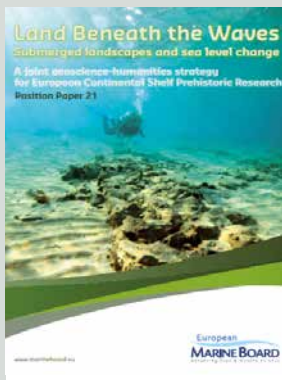
The EMB provides the essential components for transferring knowledge from the scientific community to decision makers, promoting Europe's leadership in marine research and technology. Adopting a strategic role, the EMB provides a unique forum within which marine research policy advice to national agencies and to the European Institutions is developed, with the objective of promoting the establishment of the European Marine Research Area.

www.marineboard.eu



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Highlights 2014

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- 2 **EU FP7 STAGES MSFD stakeholder workshop**, 12 February, Brussels (page 28)

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- 4 **EU FP7 SEAS-ERA 3rd Forum and launch of the Pan-EU Analysis of the sea basin Strategic Research Agendas**, 25 February, Brussels (page 28)

- 5 **4th EMB Open Forum, Arctic 2050: Towards ecosystem-based management in a changing Arctic Ocean**, 12 March, Brussels (page 31)

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Message from the Chair

Prof. Jan Mees, EMB Chair



Welcome to the 2014 European Marine Board Annual Report. This is the first report I will present as Chair and there are many events and developments to reflect on during another busy year for the EMB. It is difficult to look back on 2014, however, without first remembering the loss of my predecessor as Chair, Kostas Nittis. Kostas held the position of Chair until May 2014 and was still engaging remotely with the EMB Secretariat and colleagues until just a few months before his untimely passing. 2014 will always be overshadowed by this great loss. A tribute to Kostas can be found on page 10 of this report.

I would like to thank my fellow EMB delegates for the opportunity to take on the role of Chair. It is an honour to hold this position, especially at such a critical time as we move closer to a decision on the future legal status of EMB which must be made in 2015. Either we will stay as part of a newly reorganized European Science Foundation (subject to this going ahead) or

we will look at other options, including the possibility of becoming an independent legal entity. One of the early priorities of my Chairmanship is to ensure that the interests of our members are well represented throughout this process and that developments are clearly communicated, both to our members, and to wider stakeholders. EMB is in a very healthy situation with a committed membership, strong finances and a stable Secretariat. This process should not, therefore, be seen as a threat, but rather as an opportunity to establish a solid platform for EMB to continue its important work in the future.

This report describes the numerous EMB highlights and outputs of 2014 and there is not enough space here to reflect on them all. I will focus on the few very important days in Rome in October during which we had a highly successful EurOCEAN 2014 conference and the adoption of the Rome Declaration. The Rome Declaration followed a very broad consultation over a six month period leading up to the EurOCEAN 2014 conference. It represents the collective voice of the marine community across Europe and should have a strong influence on the marine research agenda in the coming years.

Many people worked tirelessly to deliver these achievements. I must offer my thanks and congratulations to the Italian EMB members who hosted the EuroOCEAN 2014 conference and played such an important role in making it a success. Specifically, I thank Enrico Brugnoli of CNR (our hosts for the conference and for the autumn plenary meeting), Alessandro Crise of OGS, and Ferdinando Boero of CoNISMa, and the numerous colleagues from all three organizations whose commitment and hard work made for such a productive few days in Rome. I also thank the members of the Marine Resources Unit of the European Commission DG Research and Innovation, in particular Sigi Gruber and Ana Teresa Caetano, for their strong support for the conference. Finally, I thank the members of the Rome Declaration drafting group, led by Ed Hill of the UK National Oceanography Centre.

The EMB plenary meetings are of the highest importance for our network as they are the two times each year that our members come together to exchange knowledge and information, and set the future actions and priorities for EMB towards advancing marine science in Europe. By necessity, the Rome plenary in autumn was foreshortened, coming as it did immediately after the EuroOCEAN conference, but it was still a great success, and clearly benefitted from the positive spirit of the conference. The spring meeting in Brest was also a great success. I extend my thanks to Yves-Marie Paulet and Dominique Simon of IUEM and the French Marine Universities consortium for their support in hosting an excellent meeting in the outstanding surroundings of the Brest Technopole. The welcome in Brest was exceptional, including a reception dedicated to EMB, hosted by the Mayor's office in the city hall.

As a side event to the EuroOCEAN 2014 conference, EMB celebrated its 15th anniversary. At this signal event I outlined what I believe to be the three pillars that underpin the success of EMB: a committed and active membership, well-established and rigorous procedures in science foresight, and a committed and professional Secretariat. I would like to finish by thanking the staff of our excellent Secretariat for their hard work and dedication throughout 2014. All of the EMB successes benefit from the detailed planning that takes place behind the scenes. With this solid platform, and a host of planned strategic activities and initiatives, I look forward with enthusiasm to another successful year for EMB in 2015.

Executive Secretary's report

Dr. Niall McDonough, EMB Executive Secretary



It gives me great pleasure to present the EMB 2014 Annual Report. The report provides the reader with a review of the activities, outputs and major achievements of the Board in 2014. This was certainly a landmark year for EMB as it contained both an EMB Forum, held in March, and a EurOCEAN conference in October. In addition, the EMB published one major position paper and an associated policy brief, supported the work of four expert working groups, concluded the extensive workload associated with two EU Framework Programme contracts, participated in three Horizon 2020 bids, held two highly productive plenary meetings, and delivered on many other commitments too numerous to mention. I invite you to find out more detail in the pages of this report. Here I will mention just a few of these highlights.

The 4th EMB Forum focused on the challenges presented by a rapidly changing Arctic Ocean. The Forum was designed to support a dialogue on the key science questions for developing a greater understanding of the Arctic Ocean ecosystem and informing sustainable management of human activities in the Arctic. The Forum event itself was an unqualified success and delivered some key messages which were included in a Forum Message, a short policy briefing that was disseminated broadly by the Secretariat in the weeks following the event. Further detail can be found on page 31.

Another significant achievement in 2014 was the publication of EMB position paper 21, *Land Beneath the Waves: Submerged Landscapes and Sea Level Change*. The position paper has generated a great level of interest among a broad and interdisciplinary research community, national research funding agencies, cultural heritage agencies and policy makers. This was the first position paper for which the EMB has published a short policy brief as a summary document: EMB Policy Brief No. 1, *How did our ancestors adapt to sea-level change?* In the future, it will be standard practice to follow the publication of the position paper with that of a short policy brief. I pay particular tribute to Dr. Nic Flemming, Chair of WG SUBLAND,

and my secretariat colleague, Dr. Nan-Chin Chu, for their tireless work in delivering these important EMB publications.

Although the EMB Position Paper 19, *Linking Oceans and Human Health, A Strategic research priority for Europe*, was published at the end of 2013, 2014 was a very busy year for optimizing the impact of this paper through a number of follow-up activities, described in more detail on page 25 of this report. By the end of 2014, there was a strong indication that Oceans and Human Health topics would be included in the first drafts of the Horizon 2020 Societal Challenge 2 work programme for 2016-2017. Oceans and Human Health has also been included as one of the ten priority areas in the JPI Oceans Strategic Research and Innovation Agenda. This represents a clear impact for the work of EMB in this area.

2014 saw some positive developments for the EMB Secretariat. In February, two new Science Officers, Dr. Veronica French and Ms. Noemie Wouters, joined the team, raising the staff complement to six. In addition, we hosted two internships during the summer months which added further to the effort. In December 2014, Dr. Kate Larkin accepted the new role of Senior Science Officer and Deputy Executive Secretary, a well-deserved promotion that gives Kate some management responsibilities. I would like to take this opportunity to thank all of my Secretariat colleagues for their dedication and hard work throughout 2014. Their commitment is outstanding and I feel privileged to work with these excellent colleagues on a daily basis.

Finally, I would like to pay tribute to Kostas Nittis who stepped down as EMB Chair in May 2014 and tragically passed away just a few months later. I am grateful to have had the opportunity to work with Kostas and found him to be an astute, wise and diplomatic Chair and an individual with the highest values and integrity. All of the members of the Secretariat were greatly saddened by the news of his passing in July 2014.

We have been fortunate that the Board has elected someone of the calibre of Prof. Jan Mees as Kostas's successor to the role of EMB Chair. Jan has always been a great supporter of the EMB and I very much look forward to working with him, with the ExCom and Board members, and with my Secretariat colleagues to make 2015 another successful year for EMB.

Kostas Nittis 1964-2014

IN MEMORIAM

The members and Secretariat of EMB were greatly saddened by the untimely passing of our former Chair, Dr. Kostas Nittis, in July 2014. Representing his home institution, the Hellenic Centre for Marine Research in Greece, Kostas was an active EMB delegate for many years



and served as chair from May 2011 till May 2014. Among his many achievements, he led the complex process of drafting the Ostend Declaration (2010) and delivery of the Navigating the Future IV position paper (2013). A distinguished oceanographer, Kostas was appointed Secretary General of EuroGOOS in 2012, but his sphere of influence extended well beyond his own research field. Through participation in multiple projects and networks, he was a leading figure in Europe for the promotion of marine science and setting the marine research agenda. Those fortunate to have known and worked with Kostas will remember his wisdom, integrity, diplomacy and a steady calmness that concealed a determination to effect positive change. Tributes were paid to Kostas at EuroOCEAN 2014 and a special session on European Ocean Observing System was held in his honour.



EMB'S 15TH ANNIVERSARY

EMB's 15th anniversary was celebrated as an official side-event of EuroOCEAN 2014 on 7 October 2014 in Rome. The important role of the Board at the European marine science policy interface was commended in talks by Sigi Gruber, Head of the Marine Resources Unit at the European Commission DG Research and Innovation, and Geoffrey O'Sullivan, former EMB vice-chair and one of the Board's founding members. Speakers highlighted the EMB's strategic positioning as a unique pan-European forum connecting various stakeholders, spanning science, policy and industry. Since its establishment in the early 1990s and the move to a stand-alone organization in 1999, EMB has gained recognition and respect from national and international marine research strategic planners, users and the marine community itself.

Speakers particularly commended EMB on its Navigating the Future series which provides a periodic review of the European research and a blueprint for policymakers to develop future research and funding programmes. Quoting her colleagues, Sigi Gruber shared that the latest Navigating the Future IV is used as a text book in the developing of Horizon 2020 topics.

The most recent EMB position paper, *Land Beneath the Waves: Research strategies in submerged landscapes and sea level change*, was presented by the working group Chair, Dr. Nicholas Flemming, representing the UK's National Oceanography Centre. The paper is featured on page 21 of this report.

EMB outputs not only promote scientific priorities on policy agenda, but also channel the policy needs to the scientific community, thus creating an efficient science-policy interface for the European seas and oceans.

EMB mission, structure and governance

WHAT IS EMB?

The European Marine Board (EMB) provides an independent platform for organizations involved in supporting, delivering and using marine research and technology to promote common positions on research priorities and strategies in Europe.

EMB is a unique marine science forum which develops scientific foresight by initiating state-of-the-art analyses and studies and translating them into clear policy recommendations to national agencies and governments as well as to European institutions.

Where the EMB identifies a topic of strategic interest as the basis for a new activity, it applies one of a range of instruments to deliver a tailored impact. Targeted at European and national research programme managers, strategy developers, policymakers and the marine research community, EMB outputs drive future European and national marine research agendas, programmes and supporting strategies and policies.

EMB bridges the gap between science and policy, transferring and translating scientific knowledge to policymakers, and channelling the policy needs back to the research community.

STRUCTURE AND GOVERNANCE

The European Marine Board is a pan-European partnership of national organizations which are either research funding organizations, RFOs (e.g. research councils or ministries), research performing organizations, RPOs (e.g. national marine research institutes) or nationally-based consortia of universities. EMB activities and the operation of its secretariat are funded through annual member contributions and EMB external contracts. In 2014, EMB represented 35 organizations from 18 European countries. A full list of EMB member organizations and delegates is available on the EMB website: www.marineboard.eu/members, and in Annex 1 of this report.

EMB DELEGATES

Representing the major organizations involved in marine research in Europe, the Board's member organization delegates (i) provide a high-level overview of national science policy priorities, (ii) guarantee a multidisciplinary and high-quality scientific expertise in support of the Board's activities, and (iii) ensure uptake of the Board's strategic recommendations at national and European levels.

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

EMB delegates meet twice a year at plenary meetings to share knowledge, to define common priorities, and to agree on activities and outputs. The European Commission and the UNESCO's Intergovernmental Oceanographic Commission are permanent observers at EMB plenary meetings.



EMB Spring 2014 Plenary Meeting (14 May 2014, Brest, France)

EXECUTIVE COMMITTEE

EMB operations are overseen by the Executive Committee (ExCom). The ExCom meets three times per year to follow up on the implementation of the actions agreed by the Board at plenary meetings, to make operational and financial decisions and to give strategic guidance to the Board and Secretariat.

ExCom members and their mandates as of October:



Jan Mees – Chair
Flanders Marine Institute/Research
Foundation – Flanders, Belgium
May 2014-May 2017



Alessandro Crise - vice-Chair
National Institute of Oceanography and
Experimental Geophysics (OGS), Italy
May 2012-May 2015



Gilles Lericolais – vice-Chair
French Research Institute for the
Exploitation of the Sea (Ifremer), France
October 2013-October 2016



Erlend Moksness - vice-Chair
Institute of Marine Research,
Norway
May 2014-May 2017



Ricardo Santos – vice-Chair
Member of European Parliament,
Science and Technology Foundation
(FCT), Portugal
May 2012-May 2015



Tarmo Soomere - vice-Chair
Estonian Academy of Sciences,
Estonia
May 2012-May 2015



Jacky Wood – vice-Chair
National Environment Research
Council (NERC), United Kingdom
May 2012-October 2014



**Niall McDonough - Executive
Secretary**
Head of EMB Secretariat
ex officio member

SECRETARIAT

The strategic and operational decisions and activities proposed by the Board and ExCom are implemented by the Secretariat, based at the EMB offices in Ostend, Belgium. A full list of the current EMB Secretariat team is available on the website: www.marineboard.eu/about/secretariat and in Annex 10 of this report.



The European Marine Board Secretariat team from left to right: Noémie Wouters, Dina Eparkhina, Veronica French, Nan-Chin Chu, Kate Larkin and Niall McDonough

© Trevor Waldron



Plenary meetings 2014

European Marine Board plenary meetings, held twice a year in spring and autumn, gather EMB member organizations to reflect and agree on topical marine science and technology issues, and propose future strategic actions. During these meetings, EMB delegates also benefit from interactions with invited speakers and guests and with plenary observers from the European Commission and the UNESCO's Intergovernmental Oceanographic Commission.

SPRING PLENARY MEETING (14-15 MAY, BREST, FRANCE)

The Spring Plenary Meeting was hosted by the French Marine Universities Consortium, Univesités Marines, at the European Institute for Marine Studies (IUEM) in Brest. The meeting was attended by 21 EMB delegates, two observers, three invited speakers and five guests. The EMB Communications Panel joined the science session of the meeting (see participants list in Annex 2). Jan Mees and Erlend Moksness were elected as chair and vice-chair, respectively, of the EMB at this meeting.

The open session of the meeting welcomed EMB stakeholders, observers and partners. The programme included talks by Pascal Olivard, President of the University of Western Brittany, and Yves-Marie Paulet, IUEM Director. EMB activities in deep-sea research were presented by the chair of EMB working group Deep-Sea, Prof. Alex Rogers of the University of Oxford. In his presentation, Prof. Rogers highlighted some initial working group recommendations for future deep-sea research in the context of societal challenges and policy needs. Open session participants also received the latest updates on Horizon 2020 developments presented by the EMB Observer, Ana Teresa Caetano of the European Commission; as well as the activities of the EuroMarine and POGO networks, with whom EMB collaborates on topics including marine research infrastructures and marine graduate training. EMB delegate and coordinating lead chapter author of the IPCC Fifth Assessment Report, Michael Schulz of MARUM, Germany, summarized the key messages from the Intergovernmental Panel on Climate Change AR5. At the end of the day, participants were invited to a drinks reception organized on the occasion of the EMB plenary by the Mayor of Brest.



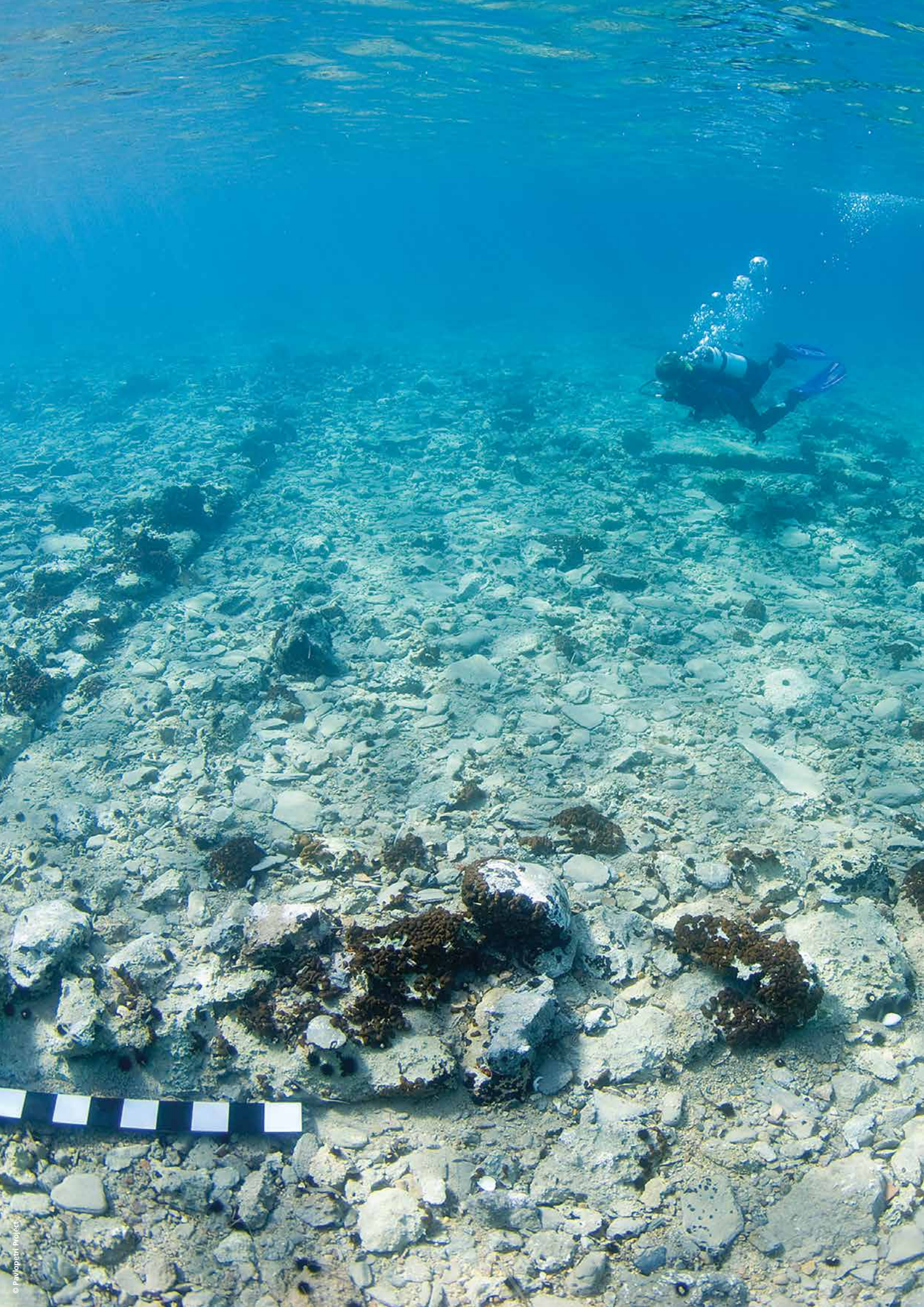
AUTUMN PLENARY MEETING (09-10 OCTOBER 2014, ROME)

The Autumn Plenary Meeting took place in Rome, back to back with EuroOCEAN 2014. The meeting was hosted by the Italian National Research Council (CNR). The meeting was attended by 25 EMB delegates, three observers from the European Commission and Intergovernmental Oceanographic Commission of UNESCO and two guests (see participants list in Annex 2).

The open session of the meeting acknowledged the success of the EuroOCEAN 2014 conference and discussed the dissemination of the Rome Declaration (see also page 32 of this report). Furthermore, the session included the Commission's updates on the Transatlantic Ocean Research Alliance working group and Horizon 2020 work programme, from Sigi Gruber and Ana Teresa Caetano of DG Research and Innovation. Robert Gagosian presented the activities of the US Consortium of Ocean Leadership and areas of future cooperation were discussed.



EMB Autumn 2014 Plenary Meeting (9 October 2014, Rome, Italy)



Science policy activities

DISCOVERING AND SAFEGUARDING EUROPE'S UNDERWATER HERITAGE

During the successive ice ages of the last 1 million years, the sea level dropped at times by 120 metres, adding the equivalent of 40% to the land mass of Europe. Today, large areas of the European continental shelf hide precious information on prehistoric settlements, migration patterns and lifestyles of the people that occupied these areas. This hidden historical heritage is being threatened by both natural erosion and commercial maritime activities.

The EMB working group SUBLAND (Sept. 2013 to Sept. 2014) brought together interdisciplinary experts to deliver a position paper on the recent progress in European submerged heritage research and identify key research questions and policy priorities necessary to support this research in the future. The position paper was prepared in consultation with the European Archaeological Council and several national cultural departments and agencies as well as the SPLASHCOS COST Action community. In June 2014, the SUBLAND working group and EMB Secretariat transmitted the main recommendations of the position paper to the European Commission through the public consultation on the Horizon 2020 Societal Challenge 5, 'Climate action, environment, resource efficiency and raw materials'. As a result, the Commission has retained Continental Shelf Prehistoric Research as a new trans-disciplinary domain for collaborative research in its initial strategic scoping analysis.

Launched at the EurOCEAN 2014 conference in October, the position paper generated a large stakeholder interest, as well as wide media coverage (40 tracked entries in print and online media). In November, EMB published a summarized version of the position paper as a policy brief.

Key enablers:

- Increased support for research and education to advance knowledge and build capacity in institutes and laboratories engaged in Continental Shelf Prehistoric Research;
- Access to technology and data from research and commercial sources for site discovery and analysis, and landscape reconstruction;
- A coordinated partnership with industry to reports finds, to transfer technologies and to optimize project planning for offshore commercial activities;
- A multi-stakholder mechanism for sustainable exploration, in compliance with treaties and legislation, to support best practice in Maritime Spatial Planning.

DEEP-SEA RESEARCH FOR SOCIETAL CHALLENGES AND POLICY NEEDS

Beyond the continental shelf lies the vast under-explored open ocean spanning surface waters to the deep seafloor and sub-seafloor. It comprises the major habitable volume on Earth and holds a substantial and valuable repository of the biological diversity and geological resources of the planet. Deep-sea environments provide us with important goods and services that range from fish, to bioactive molecules (with potential for development of pharmaceuticals and industrial products and processes) and mineral resources. Furthermore, the deep sea plays a major role in the regulation of global biogeochemical and nutrient cycles that are crucial to the functioning of the planet. However, the immense size and remoteness, coupled with a relatively small research effort, means that the deep-sea ecosystem remains poorly understood.

With the increasing commercial interest and capability to exploit the deep ocean, EMB identified a strong need for a vision based on an ecosystem approach to support a sustainable development and ocean health in the deep sea. The EMB working group Deep Sea was launched in January 2014 as a platform for cross-sector interdisciplinary dialogue to deliver recommendations for future deep-sea research in the context of societal challenges and policy needs.

Europe should position itself as a front-runner in matching economic opportunities with best science and governance associated with the emerging exploitation of biological and mineral resources from the deep ocean.



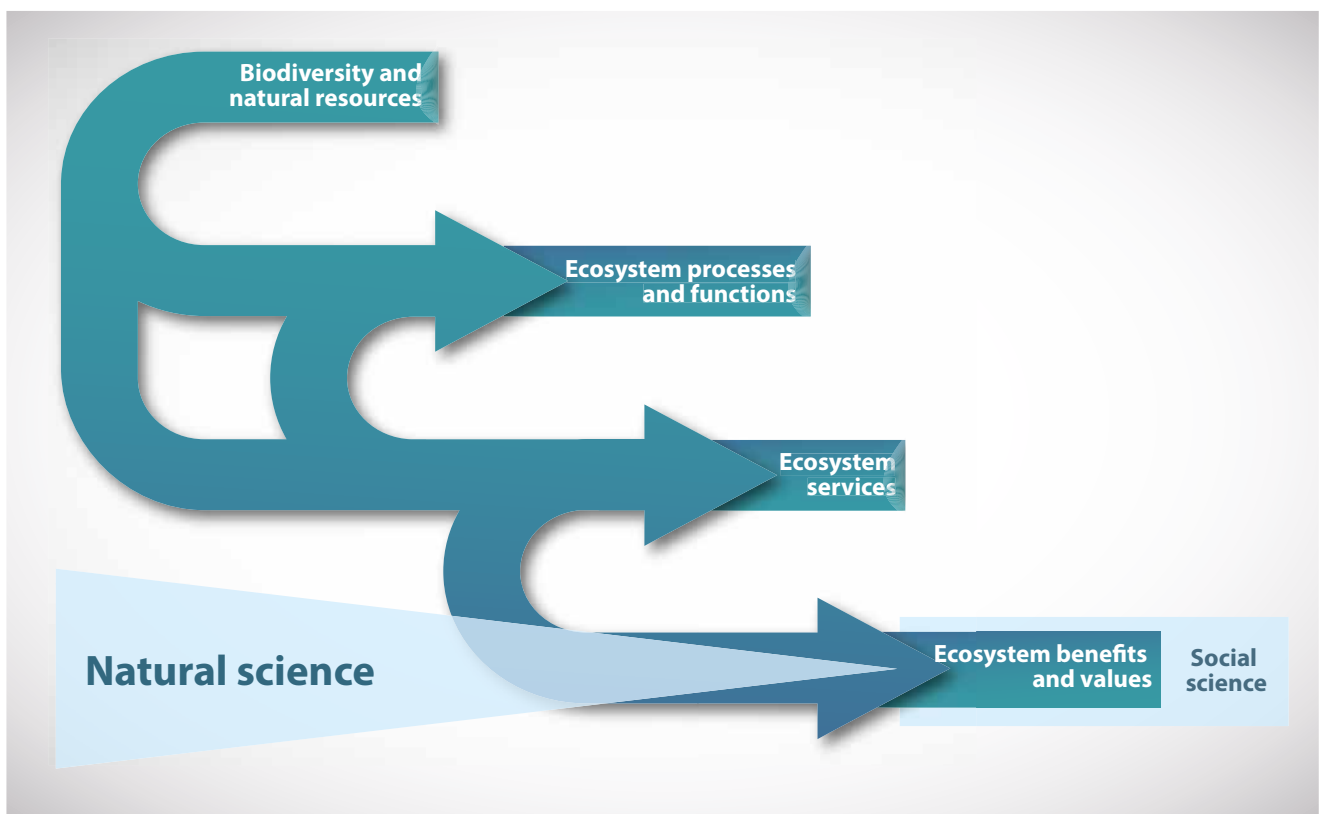
In the course of its activities, this EMB working group engaged with industry (e.g. deep-sea mining, oil and gas, marine biotechnology and fisheries) and wider stakeholders through dedicated consultative workshops.

Furthermore, EMB conducted a stakeholder survey on public and private investments and funding in deep-sea research, spanning basic research to commercial activities. The consultation demonstrated a clear need for fundamental scientific knowledge for establishing baselines, informing Environmental Impact Assessments and monitoring impact of commercial activities on deep-sea ecosystems. Preliminary results of the working group activities were submitted to the European Commission as a response to the DG MARE 2014 consultation on seabed mining and communicated to EC DG Research and Innovation and Horizon 2020 Programme Committee for Societal Challenges 2 and 5.

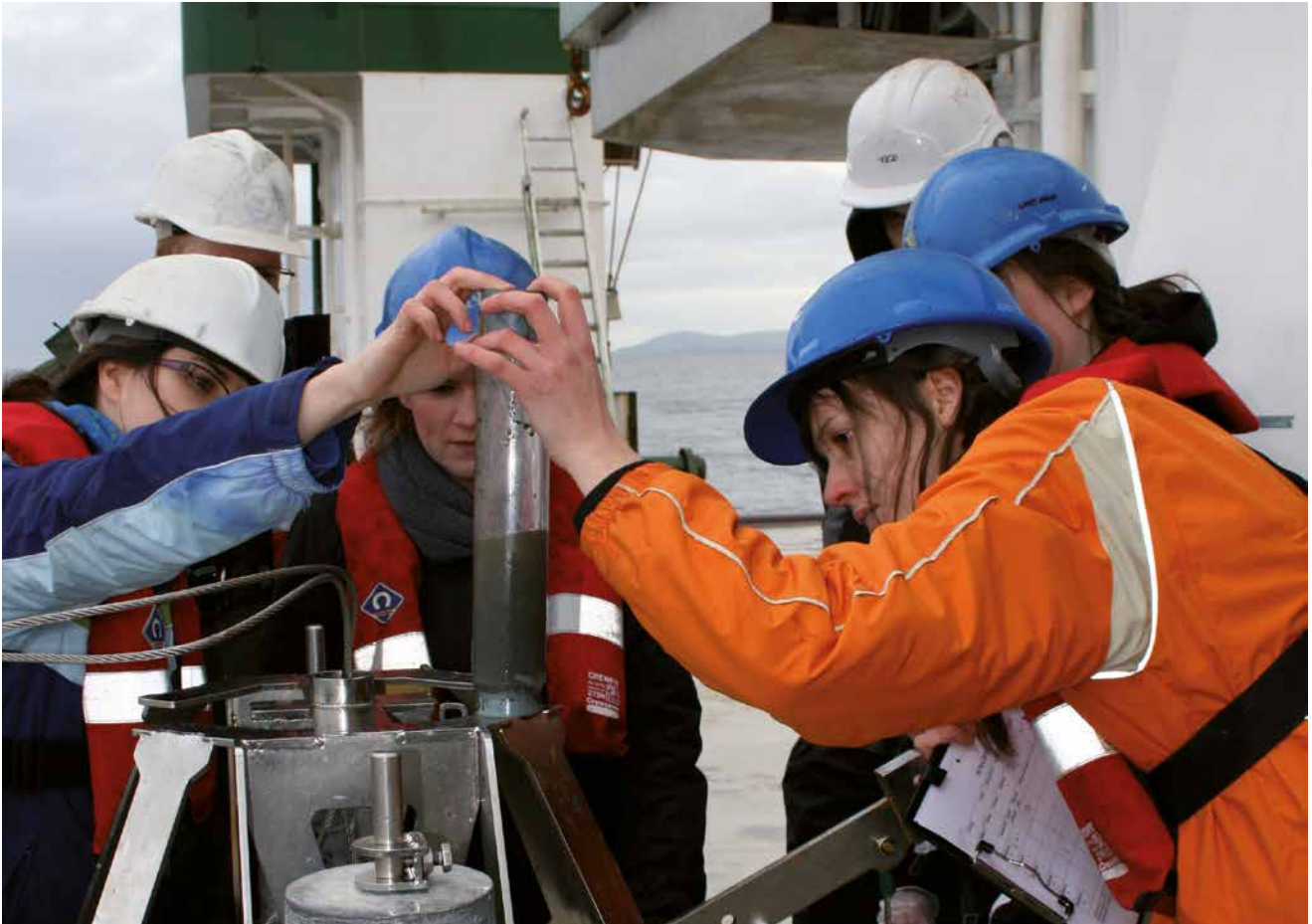
VALUING MARINE ECOSYSTEMS

Marine research has traditionally focused on physical, chemical and biological processes in the sea and its boundaries, whereas the socio-economic aspects related to marine research are often neglected. Understanding the mechanisms and ways by which humans utilize marine resources and space directly or indirectly is essential for an integrated assessment and management of the coasts, seas and ocean, and will require an innovative interdisciplinary research approach. It is also an intrinsic requirement for achieving a genuine ecosystem approach to the management of marine resources.

The EMB working group VALMARE (launched in May 2013) specifically targets the development of methods and tools for the valuation of marine ecosystem services and their benefits to facilitate decision-making processes for sustainable environmental management.



Adapted from Austen M.C. Hattam C. Börger T. (in press). Typology of ecosystem services. In: Crowe TP and Frid CLJ (eds) Marine ecosystems: human impacts on biodiversity, functioning and services. Cambridge University Press.



TRAINING THE NEXT GENERATION OF MARINE SCIENTISTS

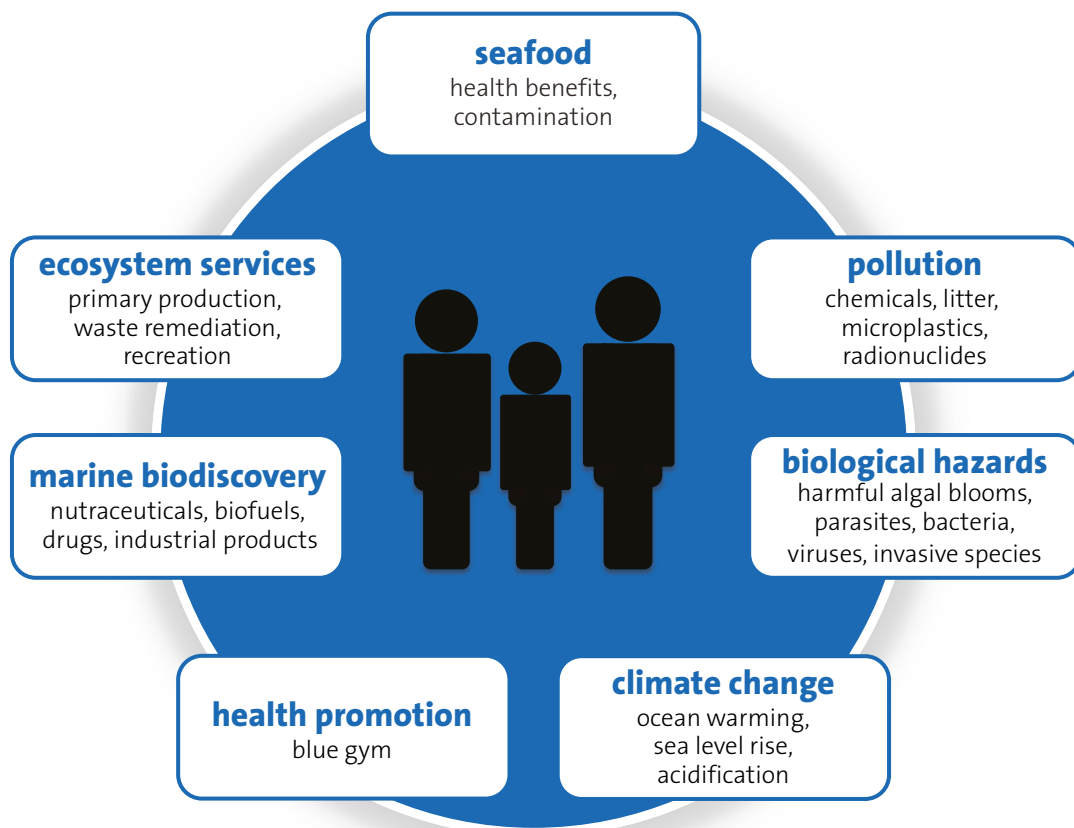
Today's marine science graduates will have to tackle complex societal challenges and the future needs of science, policy and industry. Education and research are, therefore, central components of the EU Blue Growth Strategy and it is recognized that training is part of the engine that drives innovation and technology development in maritime sectors.

The EMB working group Training (launched in Sept. 2014) is developing a vision for the future of marine science education. It examines the current European educational landscape identifying the key issues and challenges faced by educators and students. The working group is also examining how scientists and engineers can work together to address marine issues across scientific, environmental and social systems.

EMBEDDING OCEANS AND HUMAN HEALTH IN EUROPEAN MARITIME SCIENCE POLICY

The field of Oceans and Human Health (OHH) research addresses complex interactions between the marine environment and human health. In December 2013, EMB released a position paper entitled, *Linking Oceans & Human Health: A Strategic Research Priority for Europe*, the output of EMB WG OHH, chaired by Michael Moore (European Centre for Environment and Human Health, University of Exeter, UK). In March 2014, a science-policy workshop on OHH was convened in Bedruthan (Cornwall, UK) bringing together 50 experts from a diverse range of scientific disciplines (co-organized by the European Marine Board and the European Centre for Environment and Human Health with support from Ifremer, SAMS and PML). As a result of this workshop, EMB led the delivery of the *Message from Bedruthan*, calling for 'a coordinated, transnational and interdisciplinary Oceans and Human Health research programme in Europe'. An additional output of the conference was a review paper published in the scientific journal, *Marine Environmental Research*, on the challenges and opportunities for OHH in Europe¹.

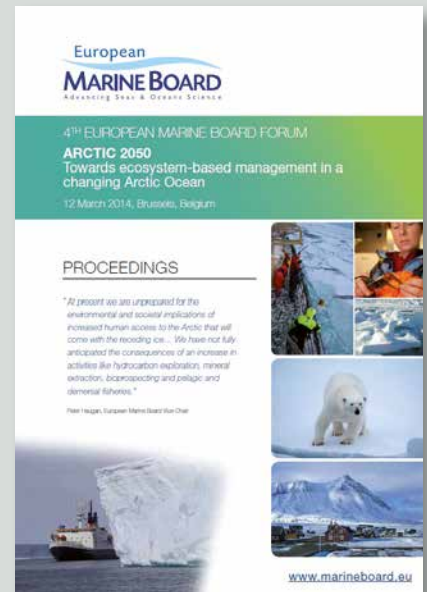
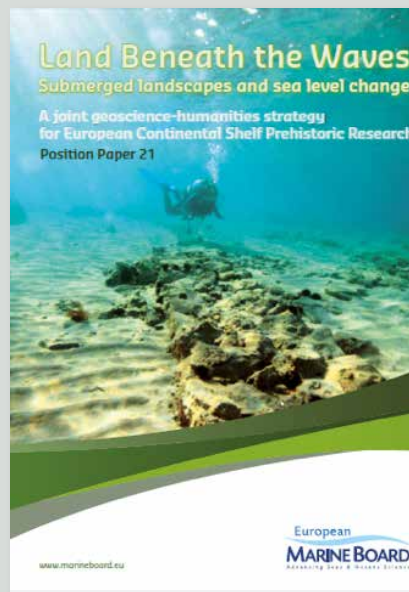
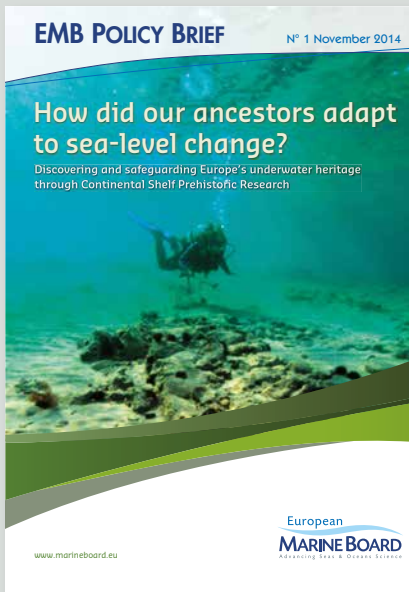
The EMB further presented its vision of OHH at both EurOCEAN 2014 (October 2014, Rome, Italy) and the 4th Gordon Research Conference on Oceans and Human Health (June 2014, Maine, USA). Since then, EMB's science policy work on OHH has been taken up in funding programmes and coordination mechanisms including Horizon 2020 and JPI Oceans Strategic Research and Innovation Agenda.



¹ Fleming, L.E., McDonough, N., Austen, M., Mee, L., Moore, M., Hess, P., Depledge, M.H., White, M., Phillipart, K., Bradbrook, P. and Smalley, A. (2014). Oceans and Human Health: A rising tide of challenges and opportunities for Europe. *Marine Environmental Research*, 99 (2014) 16-19.

EMB PUBLICATIONS

Download at:
www.marineboard.eu/publication



In October 2014, EMB published its 21st position paper addressing the need for interdisciplinary humanities and geosciences research on Europe's continental shelf prehistoric heritage. In November 2014, a summary version was released as EMB Policy Brief No. 1.

The Proceedings of the 4th EMB Forum were also published in 2014.

EU PROJECT PUBLICATIONS BY EMB

Download at:
www.seas-era.eu
www.stagesproject.eu



The EMB Secretariat participated as work package leader in two European Commission projects, SEAS-ERA and STAGES. Both projects were completed during 2014.

EMB led the development of strategic deliverables supporting progress towards a European Research Area for marine science and technology.

EU PROJECTS

The **SEAS-ERA project (EU FP7, 2010-2014)** provided a platform for national marine research funding agencies from 18 European countries across three sea basins; the Atlantic, the Mediterranean and the Black Sea. The EMB was the work package leader on the analysis of the regional research strategies. As part of this work, EMB held three annual stakeholder forums during the life-time of the project. The 2014 forum focused on the SEAS-ERA vision and legacy, reviewing the successes and lessons learnt from the project which ended in April 2014. The main recommendations of the forum included a support to sustain this network. A need for stronger links between national research funding organizations and industry was also highlighted.

As a result of the analysis of regional research strategies and the three stakeholder forums, EMB published a synthesis report *Pan-European Analysis of the SEAS-ERA Sea Basin Strategic Research Agendas* with a set of priorities identified at both sea-basin and pan-European level.

The **STAGES project (EU FP7, 2012-2014)** addressed ways to optimize the science-policy interface in support of the Marine Strategy Framework Directive (MSFD). The MSFD obliges the member states to deliver Good Environmental Status in EU marine waters by 2020. In its role as work package leader, the EMB examined the current status regarding the science-policy interactions among MSFD stakeholders and delivered a comprehensive set of recommendations on how to design and build an efficient Science-Policy Interface (SPI) to support MSFD implementation. The EMB proposal identified the need for the SPI to build on existing initiatives and to focus on developing four key areas, namely: (i) harnessing MSFD-relevant knowledge through a strategic approach to knowledge management; (ii) timely scientific and technical advice to policymakers; (iii) expert evaluation and synthesis of scientific knowledge to assess research needs and gaps and inform foresight activities and research agendas; and (iv) knowledge brokerage which lacks recognition and requires specialized skills spanning science, policy and communication. The proposal was presented at the STAGES final conference in June 2014 and at the request of DG Environment to its MSFD Project Coordination Group, to discuss how these recommendations could be implemented.

LINKING WITH TRANSATLANTIC PARTNERS

In 2014, in light of the EU moves to implement a closer cooperation between the EU, the USA and Canada on Atlantic Ocean research, the EMB and the US-based Consortium of Ocean Leadership (COL) decided to develop closer links. Both organizations represent, in their respective areas, a large part of the marine research community and both work to influence the research funding landscape to ensure that research is supported to meet key societal challenges related to the seas and ocean.

In June, EMB Executive Secretary, Niall McDonough, met with Bob Gagosian, COL President, and Kristen Yarincik, Director of Education and Research Programmes, to discuss areas of common interest. The meeting was hosted by Graham Shimmield, Director of the Bigelow Laboratory at the Bigelow facility in Boothbay Harbour, Maine. Discussions focused on how the two networks can jointly contribute to the process of implementing the goals of the Galway Statement.

At the invitation of EMB, Bob Gagosian and Kristen Yarincik attended EuroOCEAN 2014 in Rome and the open session of the EMB Autumn plenary meeting. Dr. Gagosian gave a presentation on the work of Ocean Leadership and a discussion followed on ways of developing cooperation. One of the topics carried forward was the proposal for a 5th EMB Forum on Ocean and Climate to take place in October 2015.

Furthermore, the Secretariat represents the Board on the Stakeholder Group for the Galway Statement, managed by the Marine Resources Unit of the European Commission DG Research & Innovation. The Stakeholder Group is designed as a two-way interface between the implementing agencies (EC, NOAA, DFO Canada) and stakeholders to support progress in the transatlantic ocean research alliance.



Graham Shimmield (Director of the Bigelow Laboratory at the Bigelow facility in Boothbay Harbour, Maine), Kristen Yarincik (Director of Education and Research Programmes, Consortium of Ocean Leadership) and Bob Gagosian (President, Consortium of Ocean Leadership)



Conferences

4TH EMB FORUM: ARCTIC 2050 TOWARDS ECOSYSTEM-BASED MANAGEMENT IN A CHANGING ARCTIC OCEAN

On 12 March 2014, representatives of 64 organizations gathered at the 4th EMB Forum to discuss how to best manage the consequences of a changing Arctic Ocean. Convening this flagship event, EMB called on industry and science to work together towards sustainable and responsible management of Arctic resources. Organized in collaboration with the European Polar Board, the 4th EMB Forum was recognized as an official ICARP III event (Third International Conference on Arctic Research Planning).

Moderated by BBC Science Editor, David Shukman, the forum highlighted the dramatic changes, largely attributed to anthropogenic activity, that have taken place in the Arctic in recent decades: melting of glaciers and sea ice, altered oceanic current patterns, movement and accumulation of contaminants and range shifts in many species. As a result, the Arctic region is being transformed, with wide-ranging impacts on the livelihoods of Arctic-dwelling peoples and on global climate and weather patterns. Many opportunities are also presented by these changes including the potential for ice-free shipping routes and increased oil and gas exploration. Ensuring that the science needed to support sustainable activities in the Arctic keeps pace with industrial interest and development was identified as a key theme of the forum.



The event was encapsulated in five concrete strategic goals:

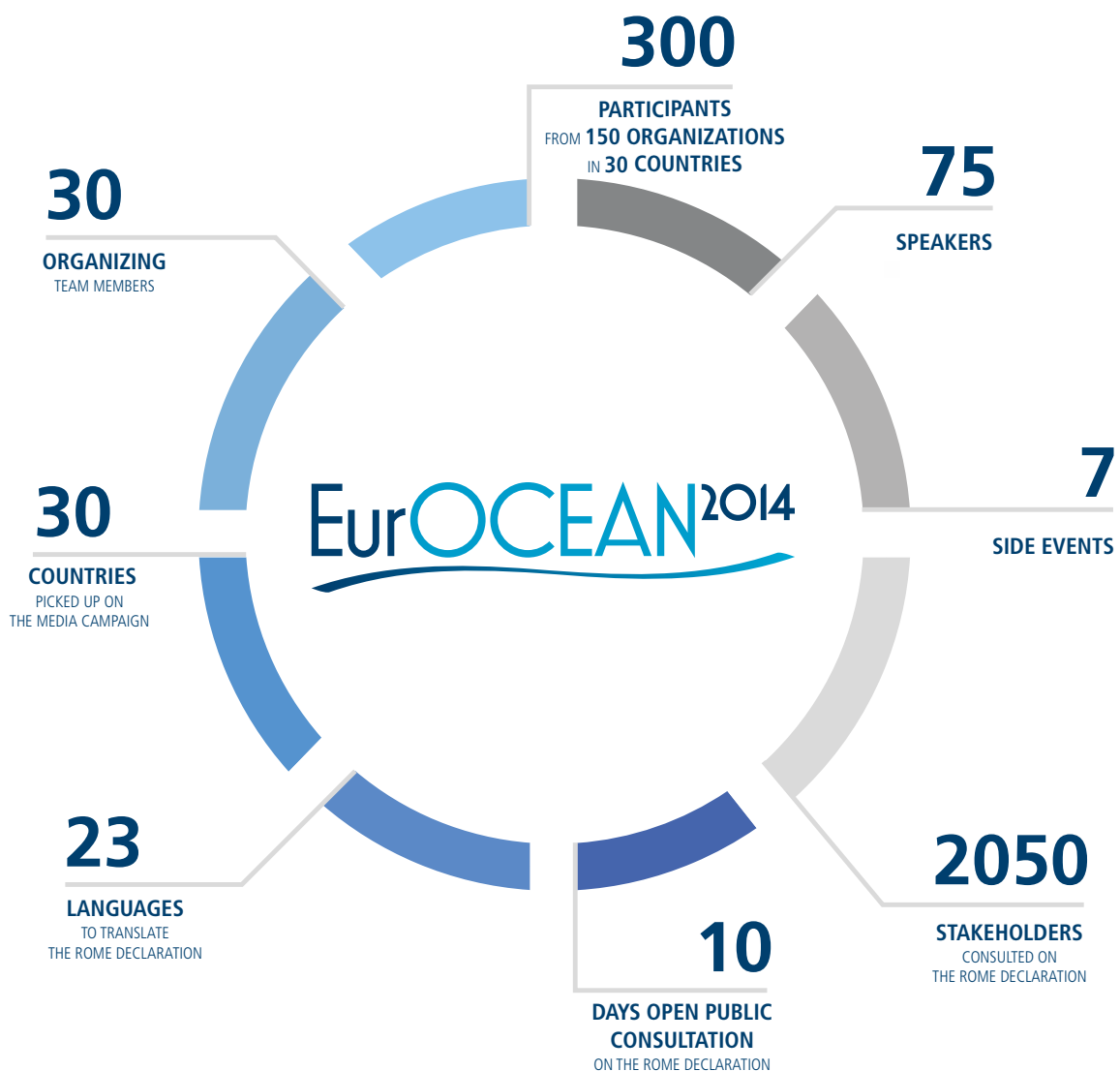
- A strategic plan for data collection in the Arctic Ocean, along with new observation technologies.
- Development of a marine spatial plan for the Arctic and protection of biodiversity hotspots.
- Engagement of Indigenous communities in citizen science for data collection and ecological management.
- Multidisciplinary and cross-sector partnerships for securing long-term strategic funding.
- Anticipating changes in the Arctic rather than responding to them.

EUROCEAN 2014: CONNECTING SCIENCE, POLICY AND PEOPLE

EuroOCEAN conferences are major European marine science policy conferences. They provide a forum for the marine and maritime research community and wider stakeholders to interact with European and Member State policymakers and strategic planners, to consider, discuss and respond to new marine science and technology developments, challenges and opportunities. EuroOCEAN conferences are organized in partnership by the EMB, the European Commission and local organizing members. EMB coordinates an overarching website for the series: <http://www.euroceanconferences.eu>

EuroOCEAN 2014 took place in Rome on 07-09 October 2014 and was an official event of the Italian EU Presidency. It was co-organized by the EMB, the European Commission, the Italian National Research Council (CNR), National Inter-university Consortium for Ocean Science (CoNISMa) and the National Institute of Oceanography and Experimental Geophysics (OGS). Hosted at the CNR headquarters, EuroOCEAN 2014 brought together 300 European scientists, policymakers and industry experts representing over 150 organizations from 30 countries.





The main output of the conference was the Rome Declaration. It was adopted on 08 October after the conference horizon-scanning session moderated by Quentin Cooper of BBC, and a further open floor discussion chaired by the Declaration drafting group chair, Prof. Ed Hill (National Oceanography Centre, UK). The conference draft of the declaration was prepared by a dedicated drafting group further to an extensive stakeholder consultation. The Rome Declaration sets out a vision for seas and ocean science to deliver impact, global leadership and sustainable blue growth for Europe. Specifically, the Declaration proposes that collaborative and cross-disciplinary European research is the key to providing the knowledge and tools that we need to achieve ecosystem-based management and protection of precious marine resources and services.

EMB's EurOCEAN 2014 media campaign achieved a wide coverage. Press releases and follow-up interviews with speakers appeared online, in print or on air across 30 countries. Additionally, the European Commission translated the Rome Declaration into all official EU languages: <http://eurocean2014.eu/declaration/>

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 and running costs and equipment at the InnovOcean site in Ostend, as well as the employment cost 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.

The figures used to prepare the financial report provided below were supplied by the ESF Department of Administration and Finance and at the time of publishing are subject to final audit and closure of 2014 accounts.

AVAILABLE FUNDS 2014

All figures in Euro '000s

Member Contributions	437
FP drawdown on employment costs (estimate)	117.3
Staff time related to the external projects	
Special contributions	8
Towards 4 th EMB Forum	
Interest on cash investment	0.5
Total available funds 2014	562.8

EXPENDITURE 2014

Secretariat employment costs	397.8
Meeting costs	95.6
Staff travel and meeting logistics	
Publications and dissemination	89.5
Running expenses	18.5
Overhead to the ESF	21.8
Other	9.3
Total expenditure 2014	632.5

RESERVE FUND¹

Available funds 2014	562.8
Expenditure 2014	632.5
Total 2014 balance	-69.7
2013 carry over	594.5
Total reserve fund as of 31/12/2014	524.8

¹ In 2010, the EMB created a reserve fund by setting aside any annual balance of income over expenditure, designed to provide a contingency against any future reduction of income.

Annexes

ANNEX 1:

Member organizations, delegates and alternates

BELGIUM

Belgian Science Policy Office (BELSPO)
David Cox

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 (EMB Chair from May 2014)

CROATIA

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

Institut Ruđer Bošković (IRB)
Ruđer Bošković Institute
Sandi Orlić

CYPRUS

Ωκεανογραφικού Κέντρου Κύπρου
Cyprus Oceanography Centre
Georgios Georgiou
George Zodiatis

DENMARK

Institut for Akvatiske Ressourcer (DTU Aqua)
National Institute for Aquatic Resources
Fritz Köster

ESTONIA

Eesti Teaduste Akadeemia
Estonian Academy of Sciences
Tarmo Soomere (EMB vice-Chair)

FRANCE

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

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

Marine Universities of France
Yves-Marie Paulet

GERMANY

Deutsche Forschungsgemeinschaft (DFG)
German Research Foundation
Michael Schulz

Helmholtz Gemeinschaft (HGF)
Helmholtz Association
Peter Herzig

Konsortium Deutsche Meeresforschung (KDM)
German Marine Research Consortium
Jan-Stefan Fritz
Rolf Peinert

GREECE

Ελληνικό Κέντρο Θαλάσσιων Ερευνών
Hellenic Centre for Marine Research (HCMR)
Kostas Nittis (EMB Chair until May 2014)
Vasileios Lykousis

IRELAND

Marine Institute
Michael Gillooly
Fiona Grant

Irish Marine Universities Consortium
Jeremy Gault
Anthony Grehan

ITALY

Consiglio Nazionale delle Ricerche (CNR)
National Research Council
Enrico Brugnoli

Istituto Nazionale di Oceanografia e di Geofisica
Sperimentale (OGS)
National Institute of Oceanography and Experimental
Geophysics
Alessandro Crise (EMB vice-Chair)

Consorzio Nazionale Interuniversitario per le
Scienze del Mare (CoNISMa)
National Inter-University Consortium for Marine
Sciences
Ferdinando Boero

THE NETHERLANDS

Nederlandse Organisatie voor Wetenschappelijk
Onderzoek (NWO)
Netherlands Organisation for Scientific Research
Josef F. Stuefer

Royal Netherlands Institute for Sea Research (NIOZ)
Henk Brinkhuis

NORWAY

Havforskningsinstituttet
Institute of Marine Research (IMR)
Erlend Moksness (EMB vice-Chair since May 2014)
Tore Nepstad

Norges forskningsrad
The Research Council of Norway (RCN)
Lars Horn

Universitetet i Bergen (UiB)
Marine Strategic Board | University of Bergen
Peter Haugan (EMB vice-Chair until May 2014)
Helga Flesche Kleiven

POLAND

Instytut Oceanologii Polskiej Akademii Nauk
(IO-PAN)
Institute of Oceanology of the Polish Academy of
Sciences
Slawomir Sagan

PORTUGAL

Centro de Investigação Marinha e Ambiental
(CIMAR)
Centre of Marine and Environmental Research
Vitor Vasconcelos

Fundação para a Ciência e a Tecnologia (FCT)
Science and Technology Foundation
Ricardo Santos (EMB vice-Chair)
Mario Ruivo

ROMANIA

Institutul National de Cercetare - Dezvoltare
Marina "Grigore Antipa"
National Institute for Marine Research and
Development "Grigore Antipa"
Vasile Patrascu

SPAIN

Consejo Superior de Investigaciones Cientificas
(CSIC)
Spanish National Research Council

Instituto Espanol de Oceanografía (IEO)
Spanish Institute of Oceanography
Demetrio De Armas

TURKEY

Türkiye Bilimsel ve Teknik Arastirma Kurumu
(TUBITAK)
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)
Jacky Wood (EMB vice-Chair)
Mike Webb

ANNEX 2: Secretariat

Permanent team:

Niall McDonough, Executive Secretary
Kate Larkin, Senior Science Officer
Dina Eparkhina, Administration and Coordination Officer
Nan-Chin Chu, Science Officer
Veronica French, Science Officer
Noémie Wouters, Science Officer

Student interns:

Audrey Legat (June – October 2014)
Karen Donaldson (June – August 2014)

ANNEX 3: Working group members 2014

Working Group Valuing Marine Ecosystems (WG VALMARE)

Working Group Members:

- Melanie Austen, Plymouth Marine Laboratory (PML), UK - WG Chair
- Peder Andersen, University of Copenhagen, Denmark
- Claire Armstrong, University of Tromsø, Norway
- Ralf Döring, TI-Institute of Sea Fisheries, Germany
- Stephen Hynes, National University of Ireland, Galway, Ireland
- Harold Levrel, French Research Institute for Exploitation of the Sea (Ifremer), France
- Adriana Resurreição, University of the Azores, Portugal
- Soile Kulmala, Finnish Environment Institute (SYKE), Finland

EMB Secretariat Support:

Science Officer: Veronica French
Manager: Niall McDonough

Working Group Submerged Landscapes (WG SUBLAND)

Working Group Members:

- Nicholas Flemming, affiliated with NOC, UK - WG Chair
- Namık Çağatay, Istanbul Technical University, Turkey
- Nena Galanidou, University of Crete, Greece
- Hauke Jöns, Lower Saxony Institute for Historical Coastal Research, Germany
- Francesco Latino Chiocci, University of Rome La Sapienza, Italy
- Gilles Lericolais, French Research Institute for Exploration of the Sea, France
- Tine Missiaen, Ghent University, Belgium
- Fionnbarr Moore, National Monuments Service Department of Arts, Heritage and Gaeltacht, Ireland
- Alar Rosentau, University of Tartu, Estonia
- Dimitris Sakellariou, Hellenic Centre for Marine Research, Greece
- Birgitte Skar, Norwegian University of Science and Technology, Norway
- Alan Stevenson, British Geological Survey, UK
- Henk Weerts, Cultural Heritage Agency, Netherlands

EMB Secretariat Support:

Manager: Niall McDonough
Science Officer: Nan-Chin Chu

Working Group Deep-Sea Research (WG Deep-Sea)

Working Group Members:

- Alex Rogers, University of Oxford, UK - WG Chair
- Antje Boetius, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), Germany
- Andy Brierley, University of St. Andrews, UK
- Peter Croot, National University of Ireland, Galway, Ireland
- Marina Cunha, University of Aveiro, Portugal
- Roberto Danavaro, Polytechnic University of Marche, Italy
- Colin Devey, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany
- Alf Haakon Hoel, Institute of Marine Research (IMR), Norway
- Henry Ruhl, National Oceanography Institute (NOI), UK
- Pierre-Marie Sarradin, French Research Institute for Exploration of the Sea (Ifremer), France
- Seline Trevisanut, University of Utrecht, Netherlands
- Helena Vieira, University of Lisbon - formerly at Bioalvo (SME), Portugal
- Martin Visbeck, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany
- Sybille van den Hove, MEDIAN SCP (SME), Spain

EMB Secretariat Support:

Manager: Niall McDonough

Science Officer: Kate Larkin

Working Group Marine Graduate Training (WG Training)

Working Group Members:

- Magda Vincx, Marine Biology Section, University Ghent, Belgium - WG Chair
- Øyvind Fiksen, University of Bergen, Norway
- Guillaume Rouillet, Université de Bretagne Occidentale - IUEM, France
- Avan Antia, University of Kiel, Germany
- Marja Koski, Technical University of Denmark, Denmark
- Pauhla McGrane, Galway-Mayo Institute of Technology, Ireland
- Bev Mackenzie, Institute of Marine Engineering, Science & Technology, UK
- Luís Menezes Pinheiro, University of Aveiro, Portugal
- Maurizio Ribera d'Alcalà, Stazione Zoologica Anton Dohrn, Italy
- Jeanine Olsen, University of Groningen, Netherlands
- Tim Deprez, Marine Biology Section, University Ghent, Belgium

EMB Secretariat Support:

Managers: Niall McDonough, Kate Larkin

Science Officer: Noémie Wouters

ANNEX 4: Panel members 2014

European Marine Board Communications Panel (EMBCP)

Panel Members:

- Jan Seys, Flanders Marine Institute (VLIZ), Belgium - Panel Chair
- Ferdinando Boero, National Inter-University Consortium for Marine Sciences (CoNISMa), Italy
- Jan Boon, Royal Netherlands Institute for Sea Research (NIOZ), The Netherlands
- Anne Ditlefsen, Research Council of Norway, Norway
- Marco Faimali, National Research Council, Institute of Marine Sciences (ISMAR, CNR), Italy
- Géraldine Fauville, University of Gothenburg, Sweden
- Lisa Fitzpatrick, Marine Institute, Ireland
- Albert Gerdes, Centre for Marine Environmental Sciences (MARUM), Germany
- Anouck Hubert, Institut Universitaire Européen de la Mer (IUEM), France
- Thomas Isaak, French Research Institute for Exploitation of the Sea (Ifremer), France
- Sigrid Maebe, Royal Belgian Institute of Natural Sciences (RBINS), Belgium
- Kjartan Mæstad, Institute of Marine Research (IMR), Norway
- Kim Marshall-Brown, National Oceanography Centre (NOC), United Kingdom
- Martha Papathanassiou, Hellenic Centre for Marine Research (HCMR), Greece
- Francesca Petrera, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Joanna Piwowarczyk, Institute of Oceanology of the Polish Academy of Sciences (IO-PAN), Poland
- Line Reeh, National Institute of Aquatic Resources (DTU Aqua), Denmark
- Ralf Roechert, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), Germany
- Joana Saiote, Centre of Marine and Environmental Research (CIIMAR), Portugal
- Yianna Samuel-Rhoads, Cyprus Oceanography Centre, Cyprus
- Andreas Villwock, Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany

EMB Secretariat Support:

Manager: Niall McDonough

Science Officer: Veronica French

European Scientific Diving Panel (ESDP)

Panel Members:

- Martin Sayer, National Environment Research Council (NERC), United Kingdom - panel chair
- Jean-Pierre Feral, National Centre for Scientific Research (CNRS), France
- Philipp Fisher, Alfred Wegener Institute for Polar and Marine Research (AWI), Germany
- Giorgio Caramanna, Italian Association of Scientific Divers (AIOSS), Italy
- Jouni Leinikki, Finnish Scientific Diving Steering Association, Finland
- Maria Asplund, Sven Loven Center for marine research, Sweden
- Alain Norro, Management Unit of the North Sea Mathematical Models (MUMM) - Royal Belgian Institute of Natural Sciences (RBINS), Belgium

EMB Secretariat Support:

Manager: Niall McDonough

Science Officer: Noémie Wouters

ANNEX 5: Participants of EMB plenary meetings 2014

Spring 2014 Plenary Meeting, 14-15 May 2014, Brest, France

EMB DELEGATES

Representative	Member Organization
FERDINANDO BOERO	National Inter-University Consortium for Marine Sciences (CONISMA), Italy
ENRICO BRUGNOLI	National Research Council (CNR), Italy
ALESSANDRO CRISE	National Institute of Oceanography and Experimental Geophysics (OGS), Italy
DEMETRIO DE ARMAS	Spanish Institute of Oceanography (IEO), Spain
JEAN-MARIE FLAUD	National Center for Scientific Research (CNRS), France
JAN-STEFAN FRITZ	German Marine Research Consortium (KDM), Germany
PETER HAUGAN PLENARY CHAIR	Marine Strategic Board - University of Bergen (UIB), Norway
LARS HORN	Research Council of Norway (RCN), Norway
MARK JAMES	Marine Alliance for Science and Technology for Scotland (MASTS), United Kingdom
GILLES LERICOLAIS	French Research Institute for Exploration of The Sea (Ifremer), France
JAN MEES	Fund for Scientific Research – Flanders (FWO), Belgium
ERLEND MOKSNESS	Institute of Marine Research (IMR), Norway
FIONA GRANT	Marine Institute, Ireland
ANTHONY GREHAN	Irish Marine Universities Consortium, Ireland
YVES-MARIE PAULET	Marine Universities of France
GERT-JAN REICHART	Royal Netherlands Institute for Sea Research (NIOZ), Netherlands
RICARDO SANTOS	Science and Technology Foundation (FCT), Portugal
MICHAEL SCHULZ SPEAKER TO THE OPEN SESSION	German Research Foundation (DFG), Germany
TARMO SOOMERE	Estonian Academy of Sciences, Estonia
IVICA VILIBIC	Institute of Oceanography And Fisheries (IZOR), Croatia
JACKY WOOD	Natural Environment Research Council (NERC), United Kingdom

EMB OBSERVERS

ANA TERESA CAETANO SPEAKER TO THE OPEN SESSION	National Inter-University Consortium for Marine Sciences (CONISMA), Italy
WENDY WATSON WRIGHT	Intergovernmental Oceanographic Commission of Unesco

INVITED SPEAKERS ATTENDING THE OPEN SESSION

Name	Organization
CATHERINE BOYEN	Euromarine / Station Biologique de Roscoff, CNRS, France
ALEX ROGERS	EMB WG Deep-Sea Chair / University of Oxford, UK
SOPHIE SEEYAVE	Partnership for Observation of the Global Oceans (POGO)

INVITED GUESTS ATTENDING THE OPEN SESSION

LAURENT CHAUVAUD	Observation Cotiere, OSU-IUEM, CNRS, France
ANTOINE DOSDAT	Ifremer Centre de Bretagne, France
PASCAL OLIVARD	President of Universite de Bretagne Occidentale, France
PASCAL GENTE	Vice-President of Universite de Bretagne Occidentale, France
PIERRE KARLESKIND	Vice-President of Bretagne Region Council, France

EMBCP MEMBERS ATTENDING THE OPEN SESSION

JAN SEYS – PANEL CHAIR	Flanders Marine Institute (VLIZ), Belgium
LUCY CALVERT	National Oceanography Centre (NOC), United Kingdom
GÉRALDINE FAUVILLE	University of Gothenburg, Sweden
LISA FITZPATRICK	Marine Institute, Ireland
ALBERT GERDES	Centre for Marine Environmental Sciences (MARUM), Germany
THOMAS ISAAK	French Research Institute for Exploitation of the Sea (Ifremer), France
KJARTAN MAESTAD	Institute of Marine Research (IMR), Norway
MARTHA PAPATHANASSIOU	Hellenic Centre for Marine Research (HCMR), Greece
JOANA SAIOTE	Centre of Marine and Environmental Research (CIMAR), Portugal
ANDREAS VILLWOCK	Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany

EMB SECRETARIAT

NIALL MCDONOUGH	EMB Executive Secretary
NAN-CHIN CHU	EMB Secretariat
DINA EPARKHINA	EMB Secretariat
VERONICA FRENCH	EMB Secretariat
KATE LARKIN	EMB Secretariat
NOEMIE WOUTERS	EMB Secretariat

Autumn 2014 Plenary Meeting, 09-10 October 2014, Rome, Italy

EMB DELEGATES

Representative	Member Organization
JAN MEES - CHAIR	Fund for Scientific Research – Flanders (FWO), Belgium
FERDINANDO BOERO	National Inter-University Consortium for Marine Sciences (CONISMA), Italy
ENRICO BRUGNOLI	National Research Council (CNR), Italy
DAVID COX	Belgian Science Policy Office (BELSPO), Belgium
ALESSANDRO CRISE	National Institute of Oceanography and Experimental Geophysics (OGS), Italy
DEMETRIO DE ARMAS	Spanish Institute of Oceanography (IEO), Spain
NED DWYER	Irish Marine Universities Consortium, Ireland
JEAN-MARIE FLAUD	National Center for Scientific Research (CNRS), France
FIONA GRANT	Marine Institute, Ireland
ED HILL	National Oceanography Centre (NOC), Uk
LARS HORN	Research Council of Norway (RCN), Norway
MARK JAMES	Marine Alliance For Science and Technology for Scotland (MASTS), United Kingdom
HELGA F. KLEIVEN	University of Bergen (UIB), Norway
GILLES LERICOLAIS	French Research Institute for Exploitation of The Sea (Ifremer), France
PATRIZIO MARIANI	National Institute for Aquatic Resources (DTU Aqua), Denmark
ERLEND MOKSNESS	Institute of Marine Research (IMR), Norway
YVES-MARIE PAULET	Marine Universities of France
GERT-JAN REICHART	Royal Netherlands Institute for Sea Research (NIOZ), Netherlands
MÁRIO RUIVO	Fundação Para a Ciência e Tecnologia (FCT), Portugal
SLAWOMIR SAGAN	Institute of Oceanology, Polish Academy of Sciences (IO-PAN), Poland
TARMO SOOMERE	Estonian Academy of Sciences, Estonia
JOSEF STUEFER	Netherlands Organisation for Scientific Research (NWO)
VITOR VASCONCELOS	Centre of Marine And Environmental Research (CIMAR), Portugal
IVICA VILIBIC	Institute of Oceanography and Fisheries (IZOR), Croatia
JACKY WOOD	Natural Environment Research Council (NERC), United Kingdom

SPEAKERS, OBSERVERS AND GUESTS TO THE OPEN SESSION

Name	Organization
ANA TERESA CAETANO	European Commission DG R&I
WENDY BONNE	JPI Oceans
ROBERT GAGOSIAN	Consortium of Ocean Leadership (COL), USA
SIGI GRUBER	European Commission DG R&I
LUIS VALDES	UNESCO Intergovernmental Oceanographic Commission (IOC)
EMB SECRETARIAT	
NIALL MCDONOUGH	EMB Executive Secretary
NAN-CHIN CHU	EMB Secretariat
DINA EPARKHINA	EMB Secretariat
VERONICA FRENCH	EMB Secretariat
KATE LARKIN	EMB Secretariat
NOEMIE WOUTERS	EMB Secretariat
AUDREY LEGAT	Intern at EMB Secretariat

ANNEX 6: Meetings and events organized in 2014 (including jointly)

Date	Event and Venue
14-15/01/2014	EMB WG Deep-Sea kick-off meeting, Brussels
17/01/2014	3 rd EurOCEAN 2014 Organizing Committee meeting, Brussels
30/01/2014	EMB ExCom meeting, Brussels
12/02/2014	EU FP7 STAGES WP4 Stakeholder Workshop, Brussels
20/02/2014	EMB WG VALMARE wrap-up meeting, London
25/02/2014	3 rd EU FP7 SEAS-ERA Strategic Forum, Brussels
12/03/2014	4 th EMB Forum, Arctic 2050, Brussels
20/03/2014	12 th ESDP meeting, Crete
20-21/03/2014	Oceans and Human Health Workshop, Cornwall
01/04/2014	EMB WG SUBLAND wrap-up meeting, Athens
24-25/04/2014	EMB WG Deep-Sea 2 nd meeting, Oxford
13/05/2014	EMB ExCom meeting, Brest
13/05/2014	EurOCEAN 2014 Rome Declaration Drafting Group meeting, Brest
14-15/05/2014	EMB Spring Plenary, Brest
15/05/2014	EMBCP meeting, Brest
15/05/2014	EurOCEAN 2014 Organizing Committee meeting, Brest
05/09/2014	EMB ExCom meeting, Brussels
05/09/2014	EurOCEAN 2014 Rome Declaration Drafting Group meeting, Brussels
10/09/2014	EMBCP meeting, Porto
11/09/2014	EurOCEAN 2014 organizing team meeting, Rome
15-16/09/2014	EMB WG Training kick-off meeting, Ghent
07-09/10/2014	EurOCEAN 2014, Rome
07/10/2014	EMB 15 th anniversary and launch of Position Paper 21 (EurOCEAN 2014 side-event)
09/10/2014	CoNISMa round table and Faranda Prize, Rome (EuroCEAN 2014 side event)
09-10/10/2014	EMB Autumn Plenary, Rome (EurOCEAN 2014 side event)
15/10/2014	EMB ESDP meeting, Brussels
13-14/11/2014	EMB WG Deep Sea wrap-up meeting, Lisbon

ANNEX 7: Member contributions 2014

EMB Member	Country	Contribution 2014 / €
National Centre for Scientific Research, CNRS	France	17.000
French Research Institute for Exploitation of the Sea, IFREMER	France	17.000
Universités Marines	France	17.000
German Research Foundation, DFG	Germany	17.000
Association of National Research Centres, HGF	Germany	17.000
German Marine Research Consortium, KDM	Germany	17.000
National Research Council, CNR	Italy	17.000
National Institute of Oceanography and Experimental Geophysics, OGS	Italy	17.000
National Inter-University Consortium for Marine Sciences, CoNISMa	Italy	17.000
Natural Environment Research Council, NERC (+ NOC)	UK	34.000
Marine Alliance of Science and Technology Scotland, MASTS	UK	17.000
National Fund for Scientific Research, FNRS	Belgium	12.000
Fund for Scientific Research – Flanders, FWO	Belgium	12.000
Belgian Science Policy Office, BELSPO	Belgium	12.000
DTU Aqua	Denmark	12.000
Marine Institute, MI	Ireland	12.000
Irish Marine Universities Consortium	Ireland	12.000
Netherlands Organisation for Scientific Research, NWO	Netherlands	12.000
Royal Netherlands Institute for Sea Research, NIOZ	Netherlands	12.000
University of Bergen, UiB	Norway	12.000
Research Council of Norway, RCN (+IMR)	Norway	24.000
Spanish Institute of Oceanography, IEO	Spain	12.000
Council for Scientific Research, CSIC	Spain	12.000
Swedish Institute for the Marine Environment	Sweden	12.000
Cyprus Oceanography Centre	Cyprus	3.000*
Estonian Academy of Sciences	Estonia	8.000
Hellenic Centre for Marine Research, HCMR	Greece	8.000
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, CIMAR	Portugal	8.000
National Institute for Marine Research and Development "Grigore Antipa"	Romania	8.000
Scientific and Technological Research Council of Turkey, TÜBİTAK	Turkey	8.000
Institute of Oceanography and Fisheries, IZOR	Croatia	3.000
Institute Ruđer Bošković, IRB	Croatia	3.000
Total Call for Contributions 2014		€ 437.000

* A reduced category fee was applied to COC as an exceptional measure in 2014

ANNEX 8:

Full list of EMB publications

MARINE BOARD POSITION PAPERS:

- Flemming N.C. *et al.* **Land beneath the waves: State of the art, key opportunities and recommendations to advance the European Continental Shelf Prehistoric Research. European Marine Board Position Paper 21.** McDonough N, Chu, NC (Eds). European Marine Board, Ostend, Belgium, 2014.
Coordinating author: Nicholas C. Flemming; Contributing authors: M. Namik Çağatay, Francesco Latino Chiocci, Nena Galanidou, Gilles Lericolais, Hauke Jöns, Tine Missiaen, Fionnarr Moore, Alar Rosentau, Dimitris Sakellariou, Birgitte Skar, Alan Stevenson, and Henk Weerts. Special Contributions: Geoff Bailey and Deukalion Planning Group (Annex 2), Anders Fischer, Sunhild Kleingärtner and Ian Oxley
- European Marine Board (2013). **Navigating the Future IV. Position Paper 20 of the European Marine Board**, Ostend, Belgium. ISBN: 9789082093100, 203pp.
- Michael N. Moore *et al.* **Linking Oceans and Human Health: A Strategic Research Priority for Europe. European Marine Board Position Paper 19.** McDonough N., Evrard M., Calewaert JB., French V. (Eds). European Marine Board, Ostend, Belgium. 2013.
Contributing authors: Michael N. Moore, Craig Baker-Austin, Michael H. Depledge, Lora Fleming, Philipp Hess, David Lees, Paul Leonard, Lise Madsen, Richard Owen, Hans Pirlet, Mathew White, Vitor Vasconcelos, Nicholas Boase, Nicholas Osborne, Aldo Viarengo
- Olsen EM *et al.* **Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities. Marine Board Position Paper 18.** Larkin, KE and McDonough N (Eds.). European Marine Board, Ostend, Belgium. 2013.
Coordinating author: Esben Moland Olsen; Contributing authors: Luciano Fonseca, Raquel Goñi, David Johnson, Stelios Katsanevakis, Enrique Macpherson, Esben Moland Olsen, Dominique Pelletier, Marijn Rabaut, Marta Chantal Ribeiro, Phil Weaver, Tania Zaharia; External editorial support was provided by David Johnson of Seascape Consultants Ltd. Editors: Kate Larkin, Maud Evrard, Aurélien Carbonnière
- Glöckner F.O. *et al.* **Marine Microbial Diversity and its role in Ecosystem Functioning and Environmental Change. Marine Board Position Paper 17.** Calewaert, J.B., McDonough N. (Eds). European Marine Board, Ostend, Belgium. 2012. ISBN 978-2-918428-71-8, 80pp.
Coordinating author: Frank Oliver Glöckner. Contributing authors: Frank Oliver Glöckner (Chair), Lucas J. Stal (Coordinator Chapter 2), Ruth-Anne Sandaa (Coordinator Chapter 3), Josep Maria Gasol (Coordinator Chapter 4), Fergal O’Gara, Francisco Hernandez, Matthias M. Labrenz, Elena Stoica, Marta Varela Rozados, Adriano Bordalo, Paraskevi Pitta. Special contributions: Frede Thingstad, Marcel Kuypers
- Roose P. *et al.* **Monitoring chemical pollution in Europe’s Seas - programmes, practices and priorities for research. Marine Board Position Paper 16.** Calewaert, J.B., McDonough N. (Eds). Marine Board, Ostend, Belgium. 2011. ISBN 978-2-918428-57-2, 104pp.
Coordinating authors: Patrick Roose and Colin Janssen. Contributing authors: Joan Albaigés, Maria João Bebianno, Kees Camphuysen, Margot Cronin, Jan de Leeuw, Geir Wing Gabrielsen, Thomas Hutchinson, Ketil Hylland, Colin Janssen, Bo Jansson, Bjørn Munro Jenssen, Patrick Roose, Detlef Schulz-Bull, Piotr Szefer. Case study lead authors: Kees Camphuysen (Chapter 5) and Ketil Hylland (Chapter 6). Special contributions: Lynda Webster and Torgeir Bakke.
- Querellou J. *et al.* **Marine Biotechnology: A Vision and New Strategy for Europe. Marine Board Position Paper 15.** McDonough N., Calewaert J-B. (Eds.). Marine Board-ESF, Ostend, Belgium. 2010. ISBN 978-2-918428-26-8, 94pp.
Contributing authors: Torger Borresen, Catherine Boyen, Alan Dobson, Manfred Hofle, Adrianna Ianora, Marcel Jaspars, Anake Kijjoa, Jan Olafsen, Joel Querellou, George Rigos, Rene Wijffels. Special contributions: Chantal Compere, Michel Magot, Jeanine Olsen, Philippe Potin, Filip Volckaert.
- Rice J. *et al.* **Science Dimensions of an Ecosystem Approach to Management of Biotic Ocean Resources, SEAMBOR. Marine Board Position Paper 14.** McDonough N., Carbonnière A. (Eds). Marine Board-ESF, Ostend, Belgium. 2010. ISBN 978-2-918428-10-7, 90pp.
Contributing authors: Maria de Fátima Borges, Anthony Grehan, Andrew Kenny, Harald Loeng, Francesc Maynou,

Jake Rice, Ricardo Serrão Santos, Hein Rune, Skjoldal, Olivier Thébaud, Vassiliki Vassilopoulou, Filip Volckaert. External contributions: Olivier Curtil, Harold Levelle.

- Boyd I. *et al.* **The Effects of Anthropogenic Sounds on Marine Mammals. Marine Board Position Paper 13.** Connolly N., Calewaert J-B. (Eds). Marine Board-ESF, Ostend, Belgium. 2008. ISBN 2-912049-85-7, 94pp.
Coordinating authors: Ian Boyd, Bob Brownell, Doug Cato, Chris Clark, Dan Costa, Peter Evans, Jason Gedamke, Roger Gentry, Bob Gisinier, Jonathan Gordon, Paul Jepson, Patrick Miller, Luke Rendell, Mark Tasker, Peter Tyack, Erin Vos, Hal Whitehead, Doug Wartzok, Walter Zimmer.
- Robinson I.S. *et al.* **Remote Sensing of Shelf Sea Ecosystems. Marine Board Position Paper 12.** Connolly N., Walter N., Calewaert J-B. (Eds). Marine Board-ESF, Strasbourg, France. 2008. ISBN 2-912049-77-6, 62pp.
Contributing authors: David Antoine, Mirosław Darecki, Patrick Gorringer, Lasse Pettersson, Ian S. Robinson, Kevin Ruddick, Rosalia Santoleri, Herbert Siegel, Patrick Vincent, Marcel R. Wernand, Guy Westbrook, Giuseppe Zibordi.
- Connolly N. *et al.* (Eds). **Marine Board Responses to the European Commission's Green Papers: (i) Towards a future Maritime Policy for the Union: A European vision for the oceans and seas and (ii) The European Research Area: New Perspectives EC's Green Papers on: Maritime Policy, and the ERA. Marine Board Position Paper 11.** Marine Board-ESF, Strasbourg, France. 2007. ISBN 2-912049-73-3, 46pp.
Developed from existing Marine Board-ESF publications and discussions with Marine Board Delegates and Executive Committee.
- Binot J. *et al.* **European Ocean Research Fleets – Towards a Common Strategy and Enhanced Use. Marine Board Position Paper 10.** Connolly N., Carbonnière A. (Eds). Marine Board-ESF, Strasbourg, France. 2007. ISBN 2-912049-62-8, 62pp.
Contributing authors: Jacques Binot, Juanjo Dañobeitia, Thomas Muller, Per Wilhelm Nieuwejaar, Marieke J. Rietveld, Paul Stone. Special contributions: Massimiliano di Bitteto, John Breslin, Klaus von Broeckel, Joao Coimbra, Dimitris Georgopoulos, Mick Gillooly, Hannu Gronvall, Jan Piechura, Frans Veenstra.
- Philippart C.J.M. *et al.* **Impacts of Climate Change on the European Marine and Coastal Environment – Ecosystems Approach. Marine Board Position Paper 9.** Connolly N., Walter N. (Eds). Marine Board-ESF, Strasbourg, France. 2007. ISBN 2-912049-63-6, 84pp.
Contributing authors: Ricardo Anadón, Roberto Danovaro, Joachim W. Dippner, Kenneth F. Drinkwater, Stephen J. Hawkins, Geoffrey O'Sullivan, Temel Oguz, Catharina J.M. Philippart, Philip C. Reid.
- Minster J-F., Connolly N. *et al.* (Eds). **Navigating the Future III. Marine Board Position Paper 8.** Marine Board-ESF, Strasbourg, France. 2006. ISBN 2-912049-59-8, 69pp.
Contributing editors: Aurélien Carbonnière, Niamh Connolly, Jan de Leeuw, Maud Evrard, Jan Mees, Jean-François Minster, Kostas Nittis, Geoffrey O'Sullivan, Nicolas Walter.
- Prandle D. *et al.* **Modelling in Coastal and Shelf Seas – European Challenges. Marine Board Position Paper 7.** Connolly N., Walter N. (Eds). Marine Board-ESF, Strasbourg, France. 2005. 30pp.
Contributing authors: João Gomes Ferreira, Wolfgang Fennel, Michael Hartnett, Peter Herman, Michiel Knaapen, Hans Los, Morten Pejrup, Thomas Pohlmann, David Prandle, Roger Proctor, Yann-Hervé de Roeck, Karline Soetaert, Takvor Soukissian, Tapani Stipa, Georg Umgieser, Waldemar Walczowski.
- Mantoura F., Boissonnas J., d'Ozouville L., Connolly N. **Navigating the Future II - Summary of Integrating Marine Science in Europe. Marine Board Position Paper 6.** Minster J-F. *et al.* (Eds). Marine Board-ESF, Strasbourg, France. 2003. 24pp.
Editors: John Marks, Jean-François Minster, Mario Ruivo, Silvana Vallerga; Other Contributors: Avan Antia, Laura Castellucci, Juanjo Dañobeitia, Jens Degett, Bob Dickson, Graham Edgar, Paul Galvin, David Griffith, Gwyn Griffiths, Harlyn Halvorson, Carlo Heip, Jean-Pierre Henriot, Catherine Jeandel, Frank Lamy, Jacques Legrand, Han Lindeboom, Karin Lochte, Jens Meincke, Geoffrey O'Sullivan, Nadia Pinardi, Gérard Riou, Douglas Wallace, Gerold Wefer, John Woods.
- Mantoura F., Boissonnas J., d'Ozouville L., Connolly N. **Integrating Marine Science in Europe. Marine Board Position**

Paper 5. Minster J-F. et al (Eds). Marine Board-ESF, Strasbourg, France. 2002. 148pp.

Editors: John Marks, Jean-François Minster, Mario Ruivo, Silvana Vallerga; Other Contributors: Avan Antia, Laura Castellucci, Juanjo Dañobeitia, Jens Degett, Bob Dickson, Graham Edgar, Paul Galvin, David Griffith, Gwyn Griffiths, Harlyn Halvorson, Carlo Heip, Jean-Pierre Henriët, Catherine Jeandel, Frank Lamy, Jacques Legrand, Han Lindeboom, Karin Lochte, Jens Meincke, Geoffrey O’Sullivan, Nadia Pinarði, Gérard Riou, Douglas Wallace, Gerold Wefer, John Woods.

- Halvorson H. *et al.* **Marine Biotechnology – A European Strategy for Marine Biotechnology. Marine Board Position Paper 4.** Mantoura F. (Ed). Marine Board-ESF, Strasbourg, France. 2001. ISBN 2-912049-29-6, 30pp.
Contributing authors: Maria Alexis, Grant Burgess, Joao Coimbra, Yves le Gal, Maura Greal, David Gutnick, Harlyn Halvorson, Manfred Höfle, Zuzana Smolenicka, Bernt Walther, Roman Wenne; Special consultant: Jan A. Olafsen.
- Boissonnas J., d’Ozouville L. *et al.* **Navigating the Future – Towards a Marine European Research Area. Marine Board Position Paper 3.** Marine Board-ESF, Strasbourg, France. 2001. 14pp.
Core Drafting Group: J. Boissonnas, O.R. Godø, C. Jeandel, J.W. de Leeuw, K. Lochte, R.F.C. Mantoura, J. Marks, J.F. Minster, G. O’Sullivan, L. d’Ozouville, S. Vallerga, G. Wefer; Other contributors: H. Halvorson, C. Heip, B. B. Jørgensen.
- Boissonnas J., d’Ozouville L. *et al.* **Towards a European Marine Research Area. Marine Board Position Paper 2.** Marine Board-ESF, Strasbourg, France. 2000. 54pp.
Core Drafting Group: J. Boissonnas, O.R. Godø, C. Jeandel, J.W. de Leeuw, K. Lochte, R.F.C. Mantoura, J. Marks, J.F. Minster, G. O’Sullivan, L. d’Ozouville, S. Vallerga, G. Wefer; Other contributors: H. Halvorson, C. Heip, B. B. Jørgensen.
- Heip C., Hummel H. **Establishing a Framework for the Implementation of Marine Biodiversity Research in Europe. Marine Board Position Paper 1.** Mantoura F. (Ed). Marine Board-ESF, Strasbourg, France. 2000. ISBN 2-912049-13-X, 50pp.

SPECIAL REPORTS:

- Heip C., *et al.* **Climate Change and Marine Ecosystem Research: Synthesis of European Research on the Effects of Climate Change on Marine Environments. Marine Board – CLAMER Special Report.** Calewaert J.B., Heip C., McDonough N., Philippart C. (Eds). Marine Board, Ostend, Belgium. 2011. 154pp.
Coordinating author: Carlo Heip. CLAMER Scientific Expert Panel Contributors: Carlo Heip, Manuel Barange, Roberto Danovaro, Marion Gehlen, Anthony Grehan, Filip Meysman, Temel Oguz, Vangelis Papathanassiou, Catharina Philippart, Jun She, Paul Treguer, Rachel Warren, Paul Wassmann, Phil Weaver, Rita Yu. Other Contributors: Justus van Beusekom, Philip Boyd, Andrew Cooper, Hein de Baar, Henk de Haas, Felix Janssen, Wolfgang Ludwig, Leif Toudal Pedersen, Michael Tsimplis, Hans Von Storch.

MARINE BOARD FUTURE SCIENCE BRIEFS:

- Heip C., McDonough N. **Marine Biodiversity: A Science Roadmap for Europe. Marine Board Future Science Brief 1.** European Marine Board, Ostend, Belgium. 2012. ISBN 978-2-918428-75-6, 32pp.

MARINE BOARD POLICY BRIEFS:

- Chu, N.C., McDonough, N., Flemming, N.C. (2014) **How did our ancestors adapt to sea-level change? Safeguard European underwater heritage through Continental Shelf Prehistoric Research**, EMB Policy Brief No.1, European Marine Board, Ostend, Belgium. ISSN 0778-3590

MARINE BOARD SCIENCE COMMENTARIES:

- Haugan P. **Getting Ready for an Ice-free Arctic. European Marine Board Science Commentary 1.** European Marine Board, Ostend, Belgium. 2013

MARINE BOARD VISION DOCUMENTS:

- Le Boulluec M. *et al.* **Marine Renewable Energy – Research Challenges and Opportunities for a New Energy Era in Europe. Marine Board Vision Document 2.** McDonough N., Evrard M. (Eds). Marine Board-ESF, Ostend, Belgium. 2010. ISBN: 978-2-918428-27-5, 12pp.

Contributing Authors: Augusto Barata da Rocha, Cibran Camba Rey, Marc Le Boulluec, John Dalen, Henry Jeffrey, Finn Gunnar Nielsen, Geoffrey O’Sullivan, Nathalie Rousseau, Eoin Sweeney, Judith Wolf.

- Dosdat A., Ryder P. *et al.* **Marine Board – EuroGOOS Vision Document on EMODNET, The European Marine Observation and Data Network. Marine Board Vision Document 1.** Ryder P., Connolly N., Evrard M. (Eds). Marine Board-ESF, Ostend, Belgium. 2008. 10pp.
Contributing authors: Patrick Berthou, Taco de Bruin, Howard Cattle, Franciscus Colijn, Antoine Dosdat, Michael Gillooly, Johnny Johannessen, Juha Markku Leppanen, Giuseppe Manzella, Geoffrey O’Sullivan, Sylvie Pouliquen, Roger Proctor, Peter Ryder, Dick Schaap.

MARINE BOARD FORA:

- French, V. *et al.* (Eds) **4th European Marine Board Forum, Arctic 2050: Towards ecosystem-based management in a changing Arctic Ocean. (12 March 2014, Brussels). Forum Proceedings.** European Marine Board, Ostend, Belgium. 2014. Proceedings prepared and edited by Marine Board Secretariat: Veronica French, Nan-Chin Chu, Dina Eparkhina, Kate Larkin, Noémie Wouters, Niall McDonough
- Chu N. *et al.* (Eds) **3rd European Marine Board Forum, New Technologies for a Blue Future (18 April 2012, Brussels). Forum Proceedings.** European Marine Board, Ostend, Belgium. 2014 Proceedings prepared and edited by the European Marine Board Secretariat: Nan-Chin Chu, Kate Larkin, Dina Eparkhina and Niall McDonough
- Larkin K. *et al.* (Eds). **2nd Marine Board Forum, Towards a European Network of Marine Observatories for Monitoring and Research (16 September 2010, Brussels). Forum Proceedings.** Marine Board, Ostend, Belgium. 2012. Proceedings prepared and edited by Marine Board Secretariat: Kate Larkin, Aurélien Carbonnière, Dina Eparkhina, Jan-Bart Calewaert, Maud Evrard and Niall McDonough
- Connolly N., Evrard M. (Eds). **1st Marine Board Forum, Marine Data Challenges: from Observation to Information (15 May 2008, Ostend). Forum Proceedings.** Marine Board-ESF, Ostend, Belgium. 2008. ISBN 2-912049-97-0, 36pp.
Forum rapporteurs: Erlend Moksness, Jacky Wood

MARINE BOARD ANNUAL REPORTS:

- McDonough N., Eparkhina D. **European Marine Board Annual Report 2014.** European Marine Board, Ostend, Belgium, 2015. ISBN 9789079528288, 52pp.
- McDonough N., Eparkhina D. **European Marine Board Annual Report 2013.** European Marine Board, Ostend, Belgium. 2014. ISBN: 9789079528226, 64pp.
- McDonough N., Eparkhina D. **Marine Board Annual Report 2012.** European Marine Board, Ostend, Belgium. 2013. ISBN: 9789079528196, 64pp.
- McDonough N., Eparkhina D. **Marine Board Annual Activity Report 2011.** Marine Board, Ostend, Belgium. 2012. ISBN 9789079528141, 64pp.
- McDonough N., Eparkhina D. **Marine Board Annual Activity Report 2010.** Marine Board-ESF, Ostend, Belgium. 2011. ISBN 9789079528110, 72pp.
- McDonough N., Eparkhina D., Calewaert J-B. **Marine Board Annual Activity Report 2009.** Marine Board-ESF, Ostend, Belgium. 2010. 50pp.
- Connolly N., Eparkhina D., Calewaert J-B. **Marine Board Annual Activity Report 2008.** Marine Board-ESF, Ostend, Belgium. 2009. 44pp.
- Connolly N. **Marine Board Annual Report 2007.** Eparkhina D., Evrard M., Calewaert J-B., Carbonnière A. (Eds). Marine Board-ESF, Ostend, Belgium. 2009. 28pp.

EUROCEAN CONFERENCE REPORTS:

- McDonough N., Calewaert J-B. (Eds) **EuroOCEAN 2010 Conference Report and Ostend Declaration**. EurOCEAN 2010 – Grand challenges for marine research in the next decade. Thermae Palace, Ostend, Belgium, 12-13 October 2010. Belgian Science Policy Office (BELSPO), Brussels. VLIZ Special Publication 49 – Flanders Marine Institute (VLIZ). Ostend, Belgium. 2011.
ISSN 1377-0950, 60pp.
Conference rapporteurs: Florence Coroner, Jan-Stefan Fritz, Stephen Hall, Nina Hedlund, Jacky Wood.
- O’Sullivan G., Angell-Hansen K., Connolly N. (Eds). **EuroOCEAN 2007 (22 June 2007, Aberdeen, Scotland). Conference Report and Aberdeen Declaration**. Marine Institute, Galway, Ireland. 2007. 18pp.
Conference rapporteurs: Charlotte Jagot, Jacky Wood, Niall McDonough, Stephen Hall.
- Cieslikiewicz, W., Connolly, N., Ollier G., O’Sullivan G. (Eds). **Proceedings of the EuroOCEAN 2004 European Conference on Marine Science and Ocean Technology (10-13 May 2004, Galway, Ireland)**. Luxemburg: Office for Official Publications of the European Communities. 2007. ISBN 92-894-7727-X, 420pp.

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