



ANNUAL ACTIVITY REPORT



2011

The 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 challenges and opportunities.

Marine Board

The Marine Board (established in 1995) facilitates enhanced cooperation between European organizations involved in marine science (research institutes, research funding bodies and nationally-based consortia of third-level institutes) towards development of a common vision on the research priorities and strategies for marine science in Europe. In 2011, the Marine Board represented 35 member organizations from 20 countries.

The Marine Board provides the essential components for transferring knowledge for leadership in European seas and oceans research and technology. Adopting a strategic role, the Marine Board provides a 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.

The Marine Board operates in association with the European Science Foundation.



European Science Foundation

The European Science Foundation (ESF) was established in 1974 to provide a common platform for its Member Organizations to advance European research collaboration and explore new directions for research. It is an independent organisation, owned by 72 member organizations, which are research funding organizations, research performing organizations, academies and learned societies from 30 countries. ESF promotes collaboration in research itself, in funding of research and in science policy activities at the European level.



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A Selection of Key Events and



10-11 January 2011 Brussels

Marine Board Working Group on *Marine Microbial Diversity* meeting (page 31).



21-23 March 2011 Gothenburg

EU FP7 EUROMARINE kick-off meeting – Marine Board represented on the project Advisory Board (page 28).



22 March 2011 Leuven

VLIZ – Marine Board – Westbanks Symposium, *The North Sea field lab for science-based Marine Protection* (page 32).



23 March 2011 Leuven

Marine Board Working Group on *Marine Protected Areas* meeting (page 32).



11 April 2011 Brussels

Marine Board Working Group on *Oceans and Human Health* kick-off meeting (page 33).



19-20 April 2011 Ostend

EU FP7 EMAR²RES marine – maritime workshops, *Identifying Areas of Common Interest*, series 3 (page 24).



10-11 May 2011 Tallinn

Marine Board Spring Plenary Meeting (page 15).



11 May 2011 Tallinn

Marine Board Communications Panel meeting (Chair's presentation at the Marine Board Spring Plenary) (page 19)



20 May 2011 Gdansk

European Maritime Day Stakeholder Day – Marine Board presentation on *Cooperation in Marine Sciences and Technologies*.



24 May 2011 Brussels

EU FP7 SEAS-ERA Final Inventory meeting (convened by the Marine Board as SEAS-ERA partner) (page 26).



6-7 June 2011 Ostend

European Commission Expert Group on Marine Research Infrastructures meeting (hosted by the Marine Board).



8 June 2011 Brussels

Marine Board lunch-time seminar at EC DG MARE (page 38).



15-16 June 2011 Ostend

Marine Board Working Group on *Marine Microbial Diversity* wrap-up meeting (page 31).



17 June 2011 Brussels

Marine Board European Scientific Diving Panel meeting (page 20).

Milestones from the 2011 Calendar

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28 June - 1 July 2011 Brest

Marine Science and European Research Infrastructure Symposium, *The Future of the 21st Century Ocean*. Marine Board presentation - *Navigating the Future: linking research challenges and infrastructure needs* by Kostas Nittis, Marine Board Chair.



30 June 2011 Brussels

Meeting of Marine Board Working Group on *Oceans and Human Health*. (page 33).



7 September 2011 Brussels

EU FP7 SEAS-ERA 1st Strategic Forum, *SEAS-ERA and JPI Oceans: Commonalities and Synergies* (page 38).



8 September 2011 Brussels

EU FP7 MARCOM+ 2nd Forum (page 25).



15 September 2011 Brussels

EU FP7 CLAMER Final Conference, *Living with a Warming Ocean* (page 37).



26-27 September 2011 Brussels

Marine Board Working Group on *Oceans and Human Health* meeting (page 33).



3-4 October 2011 Paris

Marine Board Working Group on *Marine Protected Areas* wrap-up meeting (page 32).



13-14 October 2011 Madrid

Marine Board Autumn 2011 Plenary Meeting (page 16).



20-21 October 2011 Copenhagen

EU FP7 MARINEBIOTECH kick-off meeting (page 27).



25-26 October 2011 Trieste

Marine Board Communications Panel meeting (page 19).



1-3 December 2011 Moscow

The Ocean 2011 conference, *Research and Resources Development of Global Ocean in Russia: Present and Future* – Marine Board presentation, *The Marine Board and Perspectives on Marine and Maritime Science in Europe*, by Niall McDonough, Marine Board Executive Secretary.

Message from the Chair



It is my great pleasure to introduce the 2011 Marine Board Annual Activity Report, my first report as Chair. Since 2007, the Annual Report has provided the opportunity, once a year, to reflect on activities and developments during the previous year. As this is the fifth report, it is fair to say that the Annual Reports now constitute a series in their own right and an important record of membership, activities, achievements and impacts.

2011 saw the Marine Board grow even further with the application for membership and subsequent approval of six new member organizations. At the end of 2011, the Board had 35 members from 20 countries. This is a direct reflection of the strong reputation and profile of the Board as the foremost entity advancing seas and oceans research in Europe. Two of the new members, Marine Universities of France and CONISMA (Italy), conform to the new membership category of national consortia of third level institutes. The welcome addition of these members, joining the existing partnership of Research Performing and Research Funding Organizations, strengthens the Board further by diversifying its membership and providing access to an extensive representation of marine researchers in the countries of origin. Moreover, the creation of the category has, in its own right, provided an impetus in some cases for consortia of Universities to come together where none existed before, as was the case for the French Consortium. Thus it has the potential to contribute to better research coordination at national level.

There is not space enough here to describe the vast range of activities of the Board and its Secretariat in 2011. These are elaborated within the pages of this report. Instead, it is worth mentioning a small selection of highlights. During the year the Board published two high-level strategic reports,

including Marine Board position paper 16 on chemical pollution in Europe's seas and a Marine Board special report on the European research focused on the impact of climate change on the marine environment. The latter was delivered as part of the NIOZ-coordinated CLAMER project which concluded in September 2011 with the excellent *Living in a Warming Ocean* conference in Brussels. New activities were launched on Oceans and Human Health and Marine Biodiversity and a number of other activities continued to make progress, including the running working groups on Marine Protected Areas and Marine Microbial Diversity and the Board's *Navigating the Future IV* position paper.

One of the big "wins" of 2011 was the last minute inclusion of a "marine and maritime research" line in the European Commission legislative proposals for Horizon 2020, just before their publication at the end of November 2011. This was a vindication of multiple efforts by the Board to ensure that seas and oceans research is embedded in the Horizon 2020 proposals in an explicit way, ensuring a dedicated budget line for marine/maritime research under the new €80bn programme (2014-2020). While pressure to achieve this also came from other groups, EC sources have highlighted the major role played by the Marine Board in achieving this outcome.

2011 also saw further developments in the European science landscape which will have implications for the future of the Marine Board. In October, the new Science Europe organization was launched at an inauguration event in Berlin and by the end of the year, Science Europe had 49 member organizations. It is clear that Science Europe, based in Brussels, will be the future "voice of science" in Europe. Meanwhile, ESF as we know it, will be wound down and discontinued by 2015. The Board faces a level of uncertainty regarding a future secure operational base, which has until now been provided by ESF. Whether Science Europe could provide this, or whether a new very different organization will arise from

the ashes of ESF which could fulfil this role, all this remains to be seen. However, while working to address the best path for the Board in 2012, two issues are clear: (i) based on its increasing impact, stable finances and growing membership, the Marine Board is as healthy as ever and has a strong future; and (ii) it will be important for the Board to initiate the process in 2012 of engaging with Science Europe to consider how we can work in a coordinated way on future strategic activities related to seas and oceans research in Europe.

I would like to thank the members of the Secretariat, who continue to do an excellent job in taking care of the Board's operations and strategic activities. They play a central role in ensuring the success and impact of the Board in driving European marine science agendas. I must also acknowledge my predecessor who occupied the Chair's position until the spring plenary meeting in May 2011. During his five year term, Lars Horn made a truly excellent contribution in leading the Board through a period of growth and continual change. On behalf of all of the Marine Board Members, I thank Lars for his work and commitment to the Board and wish him well in the future.

Kostas Nittis, Hellenic Centre for Marine Research,
Greece

A handwritten signature in black ink, appearing to read 'K. Nittis', with a long, sweeping underline that extends to the right.

Chair, Marine Board

Executive Scientific Secretary's Report



On behalf of the Marine Board Secretariat, I am pleased to present the 2011 Marine Board Annual Activity Report. 2011 was, as always, a very busy year for the Marine Board and the Secretariat. The Board continued to deliver strategic advice on seas and oceans research priorities through a combination of its core activities, funded by the member organizations, and participation in strategic external projects.

At the end of 2011, the Marine Board published its 16th position paper, *Monitoring Chemical Pollution in Europe's Seas: Programmes, Practices and Priorities for Research*. The position paper was actively disseminated to stakeholders and has subsequently influenced the 2013 FP7 Environment work programme. The position paper is also designed to assist Member States and the European regional seas conventions to address the issue of more holistic monitoring programmes which take account of emerging chemical pollutants of concern. The Secretariat is grateful for the active contributions of the working group members and, in particular, the valuable work of co-Chair, Patrick Roose, of MUMM, Belgium, in helping to finalize the document.

2011 saw the launch of a new Marine Board working group on *Oceans and Human Health*. This topic generated great interest when presented by the Chair of the Working Group, Professor Mike Moore of the Plymouth Marine Laboratory, UK, at the open session of the Marine Board spring plenary meeting in Tallinn. The Board also agreed during the year to produce a short strategy document on the future of marine biodiversity research in Europe. Meanwhile, the Secretariat continued to facilitate the running of several core activities throughout 2011, including the working groups focused on MPAs and marine microbial diversity and progress on *Navigating the Future IV*.

While the EurOCEAN 2010 conference took place during the previous reporting year, a significant amount of follow-up work continued into 2011. First and foremost, the Secretariat - following a recommendation from the Board members at the October 2010 plenary meeting - took decisive steps to secure the future guardianship of the EurOCEAN conference series. In addition to contacting key stakeholders including the European Commission, the Secretariat, with the excellent technical support of VLIZ, developed and launched a new website dedicated to the EurOCEAN conference series: www.euroceanconferences.eu. The Secretariat also delivered the report of the EurOCEAN 2010 Conference early in 2011. Bearing in mind the need to maximize the impact of such key events, the Secretariat coordinated the dissemination of the report, the Ostend Declaration and news of the new website to a very broad mailing list of European marine science stakeholders.

The Marine Board Secretariat participates on behalf of the Board members in strategic Framework Programme projects. September 2011 saw completion of the *CLAMER* project, which focused on improving the transfer of knowledge from scientists to policy makers and the public, specifically in the area of marine climate change. The Secretariat coordinated the science strategy work package of this project and delivered a Marine Board special report on European research on the impacts of climate change on the marine environment, co-authored by a panel of European experts and chaired by Prof. Carlo Heip, Marine Board vice-Chair and Coordinator of *CLAMER*. Much of the Marine Board contribution to *CLAMER* focused on the science-policy interface. As an organization specializing in transferring advice from science to policy, participation in *CLAMER* provided the opportunity to refine mechanisms and strategies for influencing European research agendas.

Developing an effective European science policy interface, this time focusing on the EC Marine Strategy Framework Directive (MSFD), is also the

focus of the Marine Board-led work package in a new FP7 proposal, submitted to the Commission in November 2011. Coordinated by CETMAR, Spain, the *STAGES (Science and Technology Advancing Governance of Good Environmental Status)* support action, if approved for funding, will assist the Commission and Member States in ensuring that implementation of the MSFD will be based on the best science and that science needs to facilitate MSFD implementation are identified. The Secretariat also continued to represent the Board in the two marine/maritime cooperation projects, *EMAR²RES* and *MARCOM+*. These projects will conclude in 2012 and are described on pages 24-25 of this report.

Looking back on 2011, the Marine Board Secretariat team invested a tremendous effort to keep an extensive range of Marine Board core activities and FP7 projects moving forward. I would like to acknowledge the hard work and commitment of Jan-Bart Calewaert, Aurelien Carbonniere, Dina Eparkhina and Maud Evrard. Special mention must go to Aurelien, who left the Secretariat to take up a new post in September 2011. A Marine Board Science Officer for more than seven years, Aurelien's departure represented a significant loss to the Secretariat and he is missed by all of his Marine Board and Innovocean colleagues. We wish him well in his new post.

Finally, thanks to the previous and current Marine Board Chairs, Lars Horn and Kostas Nittis respectively, for their wise counsel and support. Thanks also to the ExCom for their active contributions and advice and to the Board members, who continue to support and participate actively in Marine Board activities, a factor that is crucial to the success of the Board. The Secretariat is here to serve the members and we never lose sight of that. I look forward to working with all Marine Board members and stakeholders and to a busy and fruitful year in 2012.

Niall McDonough



Executive Scientific Secretary, Marine Board

ABOUT THE MARINE BOARD

Marine Board Objectives and Approaches

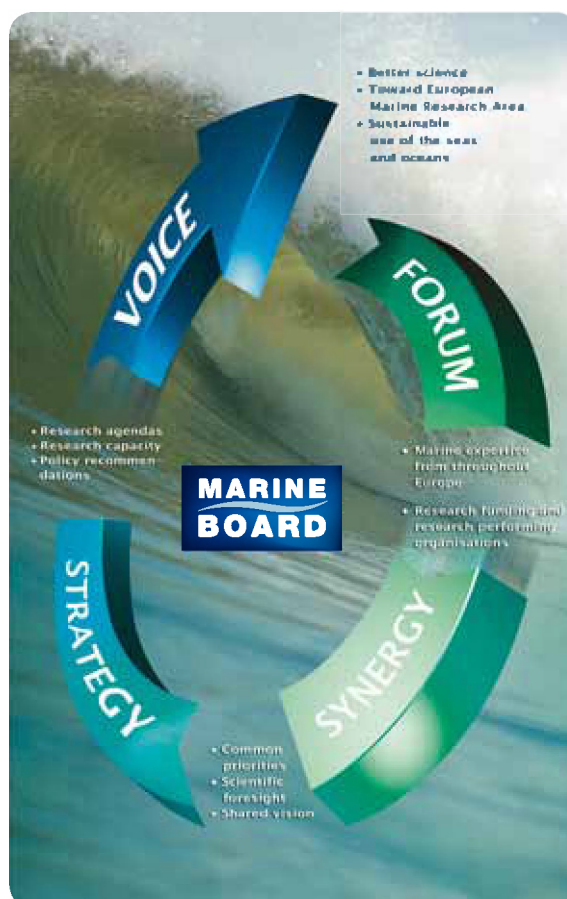
The Marine Board develops common positions on research priorities and strategies for European marine science. It facilitates enhanced cooperation between stakeholders involved in supporting, delivering and using marine research and technology.

Marine Board stakeholders include the Board's members, partner European and international networks, policymakers, strategy developers and programme managers at national and European level as well as the marine and maritime science community at large.

As an independent non-governmental advisory body, the Marine Board 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 Board provides a unique forum to develop marine research foresight. To do this, the Board initiates state-of-the-art analysis and studies and translates them into clear policy recommendations to national agencies and governments as well as to European institutions.

The Marine Board operates via four principle approaches underpinning its main objective of bridging the gap between science and policy:

- **Forum** – bringing together European marine research stakeholders to share knowledge, identify common priorities, develop common positions and collaborate;
- **Synergy** – fostering European added value to national programmes and infrastructures, and promoting collaboration with international programmes and organizations;
- **Strategy** – identifying scientific challenges and opportunities through analysis and studies, and providing high-level recommendations for European and national research funders and policymakers as well as the scientific community;
- **Voice** – expressing a collective vision of European marine research priorities to meet future science and societal challenges and opportunities.



Marine Board Instruments

Where the Marine Board 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.

Working Groups / Position Papers are the principle foresight and priority-setting instrument of the Marine Board. Working groups bring together leading European experts to deliver a multi-disciplinary analysis and to agree future research priorities on a topic of identified strategic importance at European level. A working group will normally prepare a strategic position paper. Position papers provide a thorough analysis of the state-of-the art relevant to the topic at hand, and a roadmap with concrete recommendations for improving the European research effort in this area. Strategically focused at an identified target audience, European and national research programme managers, strategy developers, policymakers and the marine research community, Marine Board position papers drive future European and national marine research agendas, programmes and supporting actions and policies (see page 29).

Vision Groups / Vision Documents are tailored to give impetus to a strategically important topic by emphasizing marine research priorities in a rapidly changing policy landscape. Vision documents are short and highly visual, written and designed with the primary aim of raising the profile and awareness of a topic among an identified target audience.

The Marine Board Biennial Open Forum brings together a wide range of marine science stakeholders (scientists, European and national policymakers, pan-European and regional networks, etc) to discuss and develop a common position on a marine science topic of common concern. The Forum bridges the gap between the scientific community and policymakers and prepares a joint vision and recommendations to advance the issue at hand (see page 18).

Marine Board Panels are open-ended operational pan-European networks of experts focused on a particular research support tool, facilitated by the Marine Board Secretariat (see page 19).

In addition to the above-mentioned instruments, the Marine Board employs a number of **other flexible mechanisms**, implemented on an *ad hoc* basis, to bridge the gap between science and policy, e.g. policy statements, workshops, conferences, etc.

ABOUT THE MARINE BOARD

Marine Board Structure and Governance

The Marine Board is a pan-European partnership of national organizations which are either research funding organizations, RFOs (e.g. research councils, ministries), research performing organizations, RPOs (e.g. national marine research institutes), or nationally-based consortia of third-level institutes.

Marine Board Members

The Marine Board's mixed membership of RPOs, RFOs and national university consortia, ensures its unique capacity to identify science policy priorities and to influence European marine research agendas.

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

Marine Board delegates meet twice a year at plenary meetings to share knowledge, to define common priorities and to agree on activities and outputs which will drive or impact upon European and national marine research agendas.

Marine Board activities and the operation of its Secretariat are funded through annual contributions from Marine Board member organizations and Marine Board external contracts. In 2011, the Marine Board represented 35 organizations from 20 European countries (a list of Marine Board member organizations and delegates is provided in Annex I). The European Commission's Directorate-General for Maritime Affairs and Fisheries and Directorate-General for Research and Innovation have permanent observer status at Marine Board plenary meetings.

Executive Committee

Marine Board operations are overseen by the Executive Committee (ExCom). The ExCom is composed of a Chair, six vice-Chairs and the Executive Scientific Secretary. ExCom members are elected by the Marine Board members for a three-year period, renewable once for two years upon re-election.



Marine Board delegates, invited speakers and guests at the Spring 2011 Plenary Meeting (10-11 May 2011, Tallinn)

ABOUT THE MARINE BOARD

ExCom members and their mandates, as of December 2011:



Kostas Nittis – Chair
Hellenic Centre for Marine Research (HCMR), Greece
May 2011-May 2014



Beatriz Morales-Nin
Spanish National Research Council (CSIC), Spain
May 2009 - May 2012



Antoine Dosdat
French Institute for Exploration of the Sea (IFREMER), France
May 2007 - May 2012



Peter Haugan
University of Bergen / Marine Strategic Board, Norway
May 2011-May 2014



Edward Hill
National Oceanography Centre (NOC), United Kingdom
May 2007 - May 2012



Çolpan Polat-Beken
Scientific and Technological Research Council of Turkey (TUBITAK), Turkey
May 2009 - May 2012



Carlo Heip
Royal Netherlands Institute for Sea Research (NIOZ)
October 2011-October 2014



Niall McDonough
Marine Board Executive Scientific Secretary and Head of Marine Board Secretariat, *ex-officio* member

The following ExCom members stepped down in 2011:



Lars Horn – Chair
Research Council of Norway (RCN), Norway
May 2006 - May 2011



Jan Mees
Flanders Marine Institute (VLIZ), Belgium
May 2006 - May 2011



Geoffrey O'Sullivan
Marine Institute (MI), Ireland
October 2008 - October 2011

The ExCom meets approximately four times per year to follow up on the implementation of the actions agreed by the Board at plenary meetings, make operational and financial decisions and provide strategic guidance to the Board and Secretariat.

Secretariat

The strategic and operational decisions and activities proposed by the Marine Board and ExCom are implemented by the Secretariat. Based at the Marine Board offices in Ostend, the Secretariat is composed of five staff members headed by the Marine Board Executive Scientific Secretary, who is also a member of the ExCom.

The Secretariat works to support day-to-day operations of the Marine Board, advance Marine Board objectives and promote the Board's activities and outputs.

In September 2011, Aurélien Carbonnière left the Secretariat, having served seven years as a Science Officer. The process of recruiting a new Science Officer was completed before the end of 2011.



Marine Board Secretariat as of September 2011, from left: Aurélien Carbonnière, Maud Evrard and Jan-Bart Calewaert (Science Officers), Dina Eparkhina (Administration and Coordination Officer) and Niall McDonough (Executive Scientific Secretary)

ABOUT THE MARINE BOARD

2011 IN A NUTSHELL

Marine Board Impact in 2011

- Publication of the Marine Board-CLAMER Special Report, *Synthesis of European Research Results on the Effects of Climate Change on European Marine Environments* (p. 34)
- Marine Board launches a new working group on *Oceans and Human Health* (p. 33)
- EU FP7 MARINEBIOTECH project starts in October 2011, aiming to deliver strategic actions in preparation for a future ERA-NET on marine biotechnology (p. 27)
- EU FP7 SEAS-ERA 1st Forum identifies synergies and opportunities for strategic collaboration with the JPI Oceans and other marine/environmental ERA-NETs (p. 38)
- Marine Board delivers lunch-time seminar at the European Commission's, DG MARE (p. 38)
- Marine Board involved in the high-level CLAMER conference, *Living with a Warming Ocean*, which highlights key scientific priorities and the importance of an effective science-policy interface (p. 37)
- Six new member organizations join the Marine Board (p. 15-16)

Marine Board 2011 in Figures

Member Organizations	35
Countries represented	20
Working Groups and Panels running	6
Experts of running Working Groups and Panels	65
New Working Groups in preparation	1
Meetings organized, incl. jointly	37
Presentations at meetings	28
Represented at meetings (total)	97
Represented at stakeholder panels	13
EC Framework Programme projects running, incl. one Associated Partnership	6
Total partner organizations in Marine Board EC FP projects (excl. Marine Board)	82
Publications and leaflets prepared and published	6
Publications disseminated (approx., excl. leaflets)	4020
Booths at conferences and events	9
Secretariat staff	5

FORUM

The Marine Board brings together European marine research stakeholders, representatives of the marine science community, funding agencies and national and European science institutions, to promote and advance seas and oceans research in Europe and globally.

Marine Board Plenary Meetings

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

Spring 2011 Plenary Meeting (10-11 May 2011, Tallinn, Estonia)

The Spring Plenary Meeting was hosted by the Estonian Academy of Sciences.

The meeting was attended by 27 Marine Board delegates, seven invited speakers and nine guests (see participants list in Annex II).



Marine Board Spring 2011 Plenary Meeting (10-11 May 2011, Tallinn)

Key decisions and highlights of the Spring Plenary included:

ExCom and membership

- Lars Horn (Research Council of Norway) stepped down after completion of a five year term as Marine Board Chair. Kostas Nittis (Hellenic Centre for Marine Research, Greece) was elected for a three-year term.
- Jan Mees (Flanders Marine Institute, Belgium) stepped down having completed five years as a Marine Board vice-Chair. Peter Haugan (University of Bergen / Marine Strategic Board, Norway) was elected for a three-year term.
- The Board approved four membership applications from:
 - Royal Netherlands Institute for Sea Research (NIOZ);
 - Belgian Science Policy Office (BELSPO);
 - Marine Universities of France consortium;
 - Croatian Institute of Oceanography and Fisheries (IZOR).



Outgoing Marine Board Chair, Lars Horn, makes a speech during the Marine Board spring plenary meeting dinner (10 May 2011, Tallinn).

Strategic activities

- The Board agreed the text of a response to the European Commission consultation on the new Common Strategic Framework, later named Horizon 2020 (see p. 35).
- The Board approved the final draft of Marine Board position paper 16 on Chemical Pollutants (see p. 30).
- The topic and focus of the 3rd Marine Board Forum were agreed (see p. 18).

Open Session

The open session of the meeting welcomed Marine Board invited speakers, observers and partners. The following presentations were given:

- *Marine Board in the European Science Policy Landscape* by Niall McDonough, Marine Board Executive Scientific Secretary;
- *Environmental research in FP7 and beyond* by Arnoldas Milukas, Head of Unit-Management of Natural Resources, Environment Directorate, EC DG Research and Innovation;
- *Marine Board Working Group on Oceans and Human Health* by Michael Moore, WG Chair, Plymouth Marine Laboratory / Peninsula Medical School, United Kingdom;
- *Marine Board Science Policy Briefing on Marine Biodiversity* by Carlo Heip, Lead Author, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands;
- *Integration of European marine research networks of excellence, EuroMarine* by Carlo Heip, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands;
- *Marine Board Communications Panel* by Jan Seys, Panel Chair, Flanders Marine Institute (VLIZ), Belgium;
- *European Marine Biological Resource Centre, EMBRC (ESFRI RI)* by Roberto Di Lauro, EMBRC Coordinator, President of Stazione Zoologica Anton Dohrn, Italy;
- *Marine Knowledge 2020* by Iain Shepherd, Atlantic and Outermost Regions and Arctic Directorate, EC DG Maritime Affairs and Fisheries;
- *Research in Support of the EC Marine Strategy Framework Directive* by Anna Cheilari, Water, Marine Environment and Chemicals Directorate, EC DG Environment.



Iain Shepherd (EC DG Maritime Affairs and Fisheries) presenting the EC Communication on Marine Knowledge 2020 to the Marine Board plenary in Tallinn on 11 May 2011.

Autumn 2011 Plenary Meeting (13-14 October 2011, Madrid)

The Autumn Plenary Meeting was hosted by the Spanish National Research Council (CSIC).

The meeting was attended by 27 Marine Board delegates and eight invited speakers (see participants list in Annex II).

Key decisions and highlights of the Autumn Plenary included:

ExCom and membership

- Geoffrey O'Sullivan (Irish Marine Institute) stepped down after completion of three years as Marine Board vice-Chair. Carlo Heip (Royal Netherlands Institute for Sea Research) was elected for a three-year term.
- The Board approved two membership applications from:
 - National Inter-University Consortium for Marine Sciences (CoNISMa), Italy; and
 - National Institute for Aquatic Resources (DTU Aqua), Denmark.

Strategic activities

- The Board agreed the text of a Marine Board letter to the EU Commissioners for Research and Innovation and for Maritime Affairs and Fisheries, to promote the importance of marine and maritime research to be well supported in the EC proposals on Horizon 2020 agenda.
- The Board agreed on a proposal to develop a new Marine Board website (see p. 40).

Open Session

The open session of the meeting welcomed Marine Board invited speakers, observers and partners. The following presentations were given:

- *Welcome Address* by Marian Gomez (National Research Council, CSIC, Spain);
- *Spanish National Marine Research Plan* by Fidel Echevarria (Ministry of Science and Innovation, MICINN, Spain);
- *Marine Board European Scientific Diving Panel Activities and Future Perspectives* by Jean-Pierre Feral (Panel Chair / DIMAR, France);
- *European Consortium for Ocean Research Drilling (ECORD)* by Catherine Mevel (ECORD Director / CNRS - Institute of Earth Physics of Paris, France);
- *Magma, metals, giants and weird beasts: the Moytirra hydrothermal vent discovery* by Andrew Wheeler (University College Cork, UCC, Ireland);
- *"Life in a Changing Ocean" Programme* by Paul Snelgrove (Memorial University Newfoundland, Canada);
- *Marine Research Infrastructures Expert Group - Towards an Integrated European Ocean Observing System* by Waddah Saab (European Commission, DG Research & Innovation);
- *Future Developments of Horizon 2020* by Arnoldas Milukas (European Commission, DG Research & Innovation);

- JPI 'Oceans' Activities and Future Perspectives by Kathrine Angell-Hansen (JPI Oceans).



Marine Board plenary open session (14 October 2011, Madrid)



Kathrine Angell-Hansen presents an update on the JPI Oceans to the Marine Board delegates (14 October 2011, Madrid)



Marine Board Autumn 2011 Plenary Meeting (13-14 October 2011, Madrid)

FORUM: Providing a European platform for marine sciences

Marine Board Biennial Forum

The Marine Board Biennial Forum provides a platform for Marine Board members, partner organizations, scientists and European and national policymakers to interact on a particular topic or theme of strategic importance for European marine science.

For each selected topic or theme, the Marine Board Forum aims to:

- Provide a focal meeting point for discussion among scientists, policymakers and other relevant stakeholders;
- Facilitate the exchange of information and ideas and agree a common position;
- Enhance collaboration and reduce fragmentation and/or duplication in the European research effort.

The main messages, discussions and decisions from Marine Board fora are recorded and published as proceedings. Presentations and outputs of the fora are available on: www.marineboard.eu/fora.

3rd Marine Board Forum, *New Technologies for a Blue Future*

In 2011, preparations were initiated for the 3rd Marine Board Forum, to take place on 18 April 2012 at the Royal Flemish Academy of Belgium for Sciences and the Arts in Brussels. The Forum will examine future or emerging 'Blue Technologies'; those technologies which are either used in or drawn from the seas and oceans and which



2nd Marine Board Forum, *Towards a European Network of Marine Observatories for Monitoring and Research*, 16 September 2010, Brussels.

can potentially make a significant contribution to marine science and society at large.

The Forum will bring together policymakers, researchers and technology developers to discuss, not only some existing and emerging blue technologies, but also how the development of such technologies can be better supported through European cooperation, knowledge transfer and innovation funding.

Further information is available on the 3rd Forum webpage: www.marineboard.eu/fora/3rd-marine-board-forum



1st Marine Board Forum, *Marine Data Challenges: From Observation to Information*, 15 May 2008, Ostend

Marine Board Panels

Marine Board Panels are established on an open-basis to address operational issues in areas where the panel members, and by extension their institutions, benefit from interacting with each other and with the Marine Board.

Active Marine Board Panels in 2011 included:

- Marine Board Communications Panel (MBCP); and
- Marine Board European Scientific Diving Panel (ESDP).

Marine Board Communications Panel (MBCP)

Established in 2002, this panel brings together professional science communicators from a number of Marine Board member organizations to promote and discuss best practice in marine science communication in Europe.

In 2011, the MBCP included 15 members from 12 countries (see membership in Annex IV).

The panel is chaired by Jan Seys of the Flanders Marine Institute (VLIZ), Belgium, and its operation is facilitated by the Marine Board Secretariat.

The MBCP aims to:

- Share communication and outreach experience and ideas;
- Support the Marine Board in disseminating the results of its strategic publications;
- Explore ways in which to stimulate and improve ocean literacy in Europe.



Members of Marine Board Communications Panel at their meeting in Trieste on 25-26 October 2011, from left: Myriam Altius (French Research Institute for Exploration of the Sea), Kjartan Mæstad (Institute for Marine Research, Norway), Maud Evrard (Marine Board), Christina Serra (National Institute of Oceanography and Experimental Geophysics, Italy), Joanna Piwowarczyk (Institute of Oceanology of the Polish Academy of Sciences), Fiona Crouch (Marine Biological Association, UK), Géraldine Fauville (Univ. Gothenburg, Sweden) and Jan Seys (Panel Chair/Flanders Marine Institute, Belgium)

MBCP in 2011

- 11 May 2011, Tallinn, Estonia (back-to-back with the Marine Board Spring Plenary): Prof. Michael Moore (Plymouth Marine Laboratory, United Kingdom), Chair of the Marine Board Working Group on *Oceans and Human Health* discussed the working group communication matters with the MBCP members at their spring meeting;
- July 2011: MBCP submitted a proposal for a session “Ocean Literacy – A Grand Challenge for Marine Science Communication and Education” at the EuroScience Open Forum (ESOF) 2012 in Dublin. The session was subsequently approved and is scheduled to take place on 12 July 2012 as part of the ESOF 2012 official programme.
- 25-26 October 2011, Trieste, Italy: Fiona Crouch (Marine Biological Association, United Kingdom) announced the establishment of the European Marine Science Educators Association (EMSEA) at the MBCP autumn meeting hosted by the Italian National Institute of Oceanography and Experimental Geophysics (OGS). EMSEA was established in response to the early identification by the MBCP of a lack of a coordinated approach in addressing marine science education in Europe.
- November 2011: MBCP prepared its contribution to the Ocean Literacy chapter of the Marine Board *Navigating the Future IV* foresight position paper.

Further information on the panel is available on the Marine Board website: www.marineboard.eu/MBCP

European Scientific Diving Panel (ESDP)

Established in 2008, this panel aims to improve networking and exchange of knowledge and best practice in the field of scientific diving, promoting diving as an important marine research tool.

In 2011, the panel included seven members from seven countries (see membership in Annex IV).

The panel is chaired by Jean-Pierre Féral of the Institut Méditerranéen de Biodiversité et d'Ecologie Marine et Continentale, France, and is facilitated by the Marine Board Secretariat.

The panel aims to:

- Promote best practice in scientific diving in Europe as a tool for scientific research for improved observation and monitoring of the coastal environment;
- Initiate and develop synergies with other operational scientific networks, exchanging knowledge and facilitating a pan-European dialogue;
- Promote links with interdisciplinary research and industry;
- Promote international collaboration.

ESDP in 2011

- May 2011: MB ESDP released its Consultation Document 2, *The delivery of science through diving: a review of recent scientific highlights and the framework for occupational scientific diving in Europe*. The document is the main output of the joint MB ESDP - COST workshop, Strengthening Synergy and Excellence in Diving Supported Science across Europe (27-28/09/2010, Brussels).
- ESDP meetings were held in Brussels on 20 January and 17 June 2011. Key actions included the development of databases for compiling information on scientific diving literature and research vessels supporting scientific diving.

- Updates on the panel membership during 2011 included the promotion of a new national committee for Scientific Diving in Slovenia and further links with Lithuania and Estonia.
- 14 October 2011, Madrid: Jean-Pierre Féral (panel Chair) presented the panel's work plan at the Marine Board Autumn 2011 Plenary Meeting.
- 9-12 November 2011, Lecce, Italy: the panel organized the 3rd International Symposium on Occupational Scientific Diving. The special emphasis of the Symposium was placed on methods, techniques and instrumentation in underwater fieldwork.
- December 2011: MB ESDP released its Consultation Document 3, *Guidelines for Scientific Diving from large research vessels*.
- On the basis of a Memorandum of Understanding agreed between MB ESDP and the American Academy of Underwater Sciences (AAUS), the panel began preparations to co-host and convene a AAUS/ESDP Scientific Diving Symposium, which will take place in Curaçao, Dutch Antilles, on 21-28 October 2013.



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Scientific divers making environmental measurements under ice.

Further information on the panel is available on the Marine Board website: www.marineboard.eu/ESDP; and on the ESDP dedicated website: www.scientific-diving.eu

Periodic Review of Marine Board panels

In September 2011, the Marine Board invited both panels to participate in a periodic panel review. In support of this process, the panel chairs were asked to prepare self evaluation reports. The reports were submitted by both panels in November 2011. A review committee, convened by the Marine Board, will review the panel activities early in 2012 and make recommendations on their continuation and strategic operation. The panel review reports will be submitted for the Marine Board approval.

SYNERGY

The Marine Board works to enhance interactions and collaborations among European marine and maritime research stakeholders, exchange knowledge and expertise, promote joint identification of priorities and shared use of infrastructures, and avoid duplication of efforts.

Framework Programme Projects

CLAMER: Climate Change Impacts on the Marine Environment - Research Results and Public Perception

Type: EC FP7 CSA
Duration: 18 months (April 2010-Sept.2011)
Budget: € 1M
Consortium: 17 partners from 10 countries
Coordinator: NIOZ, The Netherlands
Website: www.clamer.eu
Marine Board role: Work Package Leader



Climate change affects everyone. But how much do the public and decision makers actually know about the impacts of climate change and their socio-economic consequences? CLAMER investigated the gap between the scientific knowledge of climate change impacts on the marine environment, and that of policymakers and public. The project was based on the clear understanding that this gap must be reduced in order to facilitate potentially difficult future decisions on appropriate and sustainable adaptation strategies.

In CLAMER, the Marine Board synthesized scientific knowledge on climate change impacts on the marine environment from past and ongoing European research, through a number of publications and reports.

Key CLAMER outputs

Marine Board-CLAMER Special Report- *Climate Change and Marine Ecosystem Research: Synthesis of European Research on the Effects of Climate Change on Marine Environments*, September 2011.

The development of the report was coordinated by the Marine Board Secretariat based on contributions from the members of the CLAMER

Scientific Expert Panel (SEP) and additional invited experts. The SEP included some of the researchers and coordinators involved in key European marine ecosystem research activities during the past decade and several former contributors (incl. the coordinating author) to Marine Board Position Paper 9, *Impacts of Climate Change on the European Marine and Coastal Environment* (2007).



The resulting report, launched at the CLAMER Conference (see below and on p. 37), was welcomed by the research community as a unique and up-to-date synthesis of the state-of-the-art in European marine climate change research.

CLAMER Inventory Report of European Marine Climate Change Research



This deliverable of the CLAMER project provides an inventory of EU-funded projects related to marine climate change research and their results, starting from the beginning of FP5 (1998). The 245-page report developed by the Marine Board Secretariat provided

important baseline information for all CLAMER outputs.

In particular, the inventory allowed the development of an on-line database of the EU-funded projects related to climate change research in the period 1998-2011. The database, which will continue beyond the project's lifetime, is available at: www.clamer.eu/expertise.

CLAMER Policy Fact Sheets

The CLAMER Policy Fact Sheets, prepared by the Marine Board Secretariat, present a selection of five of the key marine climate change impacts: (i) Sea-level rise; (ii) Eutrophication; (iii) Hypoxia; (iv) Temperature Change; and (v) Thermohaline Circulation Changes. The fact sheets were presented to the CLAMER conference participants and disseminated after the project's completion.



The CLAMER Conference, *Living with a Warming Ocean: European Research and Public Perception of Climate Change Impacts in the Marine Environment*, 15 September 2011 (also see p. 37)

The CLAMER conference was organized as an international high-level event on 15 September 2011, Brussels.

The Marine Board contributed to the elaboration of the programme and running of the Conference which was coordinated by Flanders Marine Institute (VLIZ). In addition, the Marine Board Secretariat moderated one of the breakout workshops held during the afternoon of the conference on how to improve the two-way communication between marine climate change science and policy.

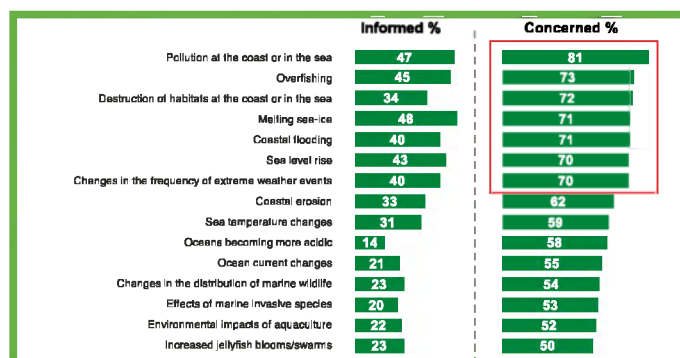
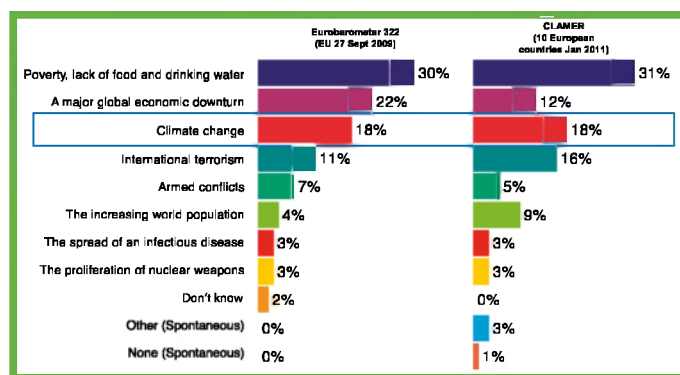
Moderated by Quentin Cooper (BBC Radio 4), the Conference attracted 145 participants, including IPCC vice-Chair Jean-Pascal van Ypersele and Prince Laurent of Belgium.



Other CLAMER Outputs

The CLAMER project also delivered the first European poll of public perception of climate change in the marine environment. Over 10,000 people from nine European countries participated in the poll by completing an online questionnaire.

The poll indicated that European citizens consider climate change among the most serious problems facing the world. Coastal and sea pollution were at the top of the list of marine environmental issues which most concerned participants.



Graphs extracted from: CLAMER (2011) Sea change: public views on marine climate change impacts in Europe. Eds. Buckley, P., Pinnegar, J.K., Terry, G., Chilvers, J., Lorenzoni, I., Gelcich, S., Dudek, D. and Arquati, A. WP2 Summary Report, Climate Change and Marine Ecosystem Research (CLAMER)

Quentin Cooper (BBC Radio 4) moderating the international CLAMER conference *Living with a Warming Ocean: European Research and Public Perception of Climate Change Impacts in the Marine Environment* (15 September 2011, Brussels)

CLAMER also facilitated a series of events to raise the profile of marine climate change impacts among the general public. Thirty European aquaria and marine institutes in fifteen European countries took part in special sessions where scientists met with interested members of the public to discuss climate change impacts in the marine environment.



All CLAMER outputs are available for download from the project website: www.clamer.eu

EMAR²RES: Cooperation between the Communities of European MARine and MARitime REsearch and Science

Type: EC FP7 CSA
Duration: 30 months (Nov. 2009-April 2012)
Budget: € 0.5M
Consortium: 5 pan-European partners
Coordinator: Community of European Shipyards' Associations (CESA)
Website: www.emar2res.eu
Marine Board role: Work Package Leader

Participants at the EU FP7 EMAR²RES workshop on *Identifying Areas of Common Interest*, series 3 (19-20 April 2011) in front of the Marine Board offices



EMAR²RES

EMAR²RES involves the European associations representing major waterborne R&D stakeholders and the Marine Board, representing the marine science research community. The project aims to identify common research needs to develop long-term cooperation between the marine and maritime research communities. In coordination with another FP7 partnership project, MARCOM+ (see p. 25), EMAR²RES investigates a structure for an efficient research cooperation between marine and maritime communities towards sustainable maritime activities.

In EMAR²RES, the Marine Board works to bridge the gap between the marine and maritime science communities via topical workshops on areas of common interest. The Board's activities in this project contribute to the broader aim of fostering marine and maritime stakeholder dialogue.

EMAR²RES in 2011

In 2011, based on the outputs of two previous EMAR²RES workshop series (2010), the Marine Board and EMAR²RES partners brought together selected representatives of the marine and maritime research communities for a final EMAR²RES workshop series (18-19/04/2011, Ostend), in order to:

- Refine progress in key thematic areas towards a more effective marine and maritime research cooperation;
- Deliver strategic recommendations for future research and/or policy priorities in the areas of arctic shipping and underwater noise; and
- Investigate proposals for the establishment of a future structure to deliver consolidated advice on research priorities.

MARCOM+: Towards an Integrated Marine and Maritime Science Community

Type: EC FP7 CSA

Duration: 28 months (Jan. 2010-April 2012)

Budget: € 1M

Consortium: 10 partners

Coordinator: ICES

Website: www.marinemaritimescienceforum.eu

Marine Board role: Work Package Leader



MARCOM+ brings together representatives of the marine and maritime science communities to test mechanisms for a European marine and maritime research partnership.

In MARCOM+, the Marine Board delivers strategic actions to advance progress towards a sustainable dialogue between relevant marine and maritime stakeholders.

MARCOM+ in 2011

MARCOM+ Panels

In 2011, the MARCOM+ partners convened five pan-European expert panels to consider mechanisms to support interdisciplinary dialogue, the science-policy interface, technology transfer, infrastructure development, and foresight. An outcome of these panel meetings was the identification of thematic areas of common interest, as listed below:

- Aquatic living resources (sustainability, coastal and sea-based aquaculture, capture fisheries)
- Ocean energy (synergies between ocean energy/fisheries and aquaculture, green off-shore installations, cost-effectiveness);
- Ocean resources for blue biotechnology (pharmaceuticals, material research for maritime products);
- Impact of climate change on maritime activities;
- Human activities and impact on ecosystems (resilience, vulnerability, marine litter);
- Maritime spatial planning (including building with nature, coastal architecture and maintenance);
- Human health and wellness (from the oceans);

- Non-living sea resources (including extraction technologies);
- Maritime transports and bioinvasions.

2nd MARCOM+ Forum

The Marine Board facilitated dialogue with the wider marine and maritime community by organizing the 2nd MARCOM+ Open Forum on 08 September 2011 in Brussels. At the Forum, Isabella Lövin (Member of the European Parliament and Vice-Chair of EP Intergroup for Seas and Coastal Areas) provided a political perspective on the need for consolidated science advice in policy making.



At the 2nd MARCOM+ Forum, from left: Niall McDonough (Executive Secretary, Marine Board), Isabella Lövin (Member of the European Parliament / Vice-Chair of EP Intergroup for Seas and Coastal areas), Paul Holthus (Executive Director, World Ocean Council, USA) and Kathrine Angel-Hansen (Director, JPI Oceans)

SEAS-ERA: Towards Integrated Marine Research Strategy and Programmes

Type: EC FP7 ERA-NET
Duration: 48 months (May 2010–April 2014)
Budget: € 2M
Consortium: 21 partners in 18 countries
Coordinator: MINECO, Spain
Website: www.seas-era.eu
Marine Board role: Work Package Leader



The vast majority of publicly funded research investment in Europe is made at Member State level. The SEAS-ERA project is designed to foster cooperation and integration between national marine research funding agencies in Europe to promote the European Research Area for marine science and technology.

SEAS-ERA focuses on:

- Developing strategic planning and the preparation of strategic research agendas for the European sea basins.
- Facilitating joint research activities through the launch of common programmes and joint calls.
- Delivering proposals towards a better and sustainable use of existing marine research infrastructures.
- Promoting human capacity building activities.
- Enhancing public awareness of marine and maritime scientific and policy issues in Europe.

In SEAS-ERA, the Marine Board is leading and supporting a range of strategic activities.

SEAS-ERA in 2011

In 2011, SEAS-ERA proposed methodologies and a cooperation framework for building a regionally-based pan-European marine research strategy.

In 2011, the Marine Board delivered:

Synthesis report on existing (sub)national (marine) science and technology strategies (September 2011)



This report presented the results of the SEAS-ERA inventory and analysis of existing national and sub-national science and technology strategies. The report will inform the development of the (i) Sea Basin Strategic Research Agendas and (ii) Common

Programmes and Joint Calls. The report was prepared by the Marine Board Secretariat based on the responses to a dedicated questionnaire and the outcomes of a series of consultative meetings with SEAS-ERA partners.

The **1st SEAS-ERA Strategic Forum SEAS-ERA & JPI Oceans: commonalities and synergies** (see also p. 38), was organized by the Marine Board on 07 September 2011, Brussels. The Forum tackled the issue of a durable support to EU marine and maritime research. Updates were presented on related initiatives, including the Joint Programming Initiative on *Healthy and Productive Seas and Oceans* and relevant marine/environmental Framework Programme ERA-NETs. The Forum clearly identified the need for improved communication amongst marine and environmental ERA-NETs. The success of the event was acknowledged during the project external review facilitated by the European Commission and the Forum series was highlighted as one of the key instruments which should be strengthened during the remainder of SEAS-ERA lifetime.



Speakers at the 1st SEAS-ERA Strategic Forum, from left: Kathrine Angel-Hansen (JPI Oceans), Rudy Herman (Flemish Ministry Department for Economy, Science and Innovation / JPI Oceans Chair), Niall McDonough (Marine Board) and Joan Albaiges (Spanish Ministry of Economy and Competitiveness / SEAS-ERA Coordinator)

MARINEBIOTECH: ERA-NET Preparatory Action in Marine Biotechnology

Type: EU FP7 Coordination and Support Action
Duration: 18 months (Oct. 2011-March 2013)
Budget: € 1M
Consortium: 11 partners
Coordinator: Research Council of Norway (RCN)
Website: www.marinebiotech.eu
Marine Board role: Work Package Leader



Marine biotechnology has the potential to provide a major contribution towards addressing some of the most pressing societal challenges, including environmental degradation, human health and delivering sustainable supplies of food and energy. A sound strategy and a concerted coordination of relevant national and regional RTDI programmes in Europe are urgently needed to allow this potential to be realized. The main goal of the MARINEBIOTECH project is to reduce current fragmentation and duplication, and pave the way for common programmes and cooperation through a future ERA-NET in marine biotechnology.

The project aims to achieve this, through:

- Mobilization of funding agencies and key stakeholders in the field of marine biotechnology;
- Gaining a better understanding of the marine biotechnology landscape in Europe and beyond;
- Investigating the potential for future cooperation between funding agencies in the area of marine biotechnology; and
- Developing a common vision for marine biotechnology RTDI.

In MARINEBIOTECH, the Marine Board leads a work package on mapping the Marine Biotechnology RTDI landscape.

EUROFLEETS: Towards an Alliance of European Research Fleets

Type: EC FP7 I3 project
Duration: 48 months (Sept. 2009–Aug. 2013)
Budget: € 7.2M
Consortium: 24 partners in 16 countries
Coordinator: IFREMER, France
Website: www.eurofleets.eu
Marine Board role: Associated Partner



EUROFLEETS aims to define a common strategic vision for European research fleets and associated heavy equipment. By bringing together marine research vessel operating agencies, EUROFLEETS is enhancing coordination between operators and promoting the cost-effective use of their equipment. Among its activities, EUROFLEETS supports outstanding research projects via fully-funded ship time on a range of European research vessels.

EUROFLEETS was developed directly from the recommendations of Marine Board Position Paper 10, *Ocean Research Fleets - Towards a Common Strategy and Enhanced Use* (March 2007), in accordance with the EurOCEAN 2007 Aberdeen Declaration (June 2007) and developments within the EU FP6 ERA-NET, MarinERA, and the European Research Vessels Operators, ERVO.

In EUROFLEETS, the Marine Board provides advice and support on scientific matters, including identification of scientific experts, maintaining interactions with other marine and maritime research organizations and disseminating project information and outputs.

Other Framework Programme Projects

In 2011, the Marine Board also provided support to five further FP7 projects as a non-partner, including:



HERMIONE: Hotspot Ecosystem Research and Man's Impact on European Seas (EU FP7 IP, April 2009 - March 2012), as member of the Science Policy Panel. Website: www.eu-hermione.net/



MEECE: Marine Ecosystem Evolution in a Changing Environment (EU FP7 IP, Sept. 2008 - Aug. 2012), as member of the User Advisory Group. Website: www.meece.eu/



EuroMarine: Integration of European Research Networks of Excellence (EU FP7 CSA, Feb. 2011-Jan. 2013), as member of the Advisory Board. Website: www.euromarineconsortium.eu/



EMBRC: European Marine Biological Resource Centre (EU FP7 Infrastructures project, Feb. 2011 - Jan. 2014), as a member of the User Reference Group. Website: www.embrc.eu



MERIL: Mapping of European Research Infrastructure Landscape, (EU FP7 SA Oct. 2010-Sept. 2012), as advisor to the project coordinator – European Science Foundation. Website: www.meril.eu

The Marine Board is also involved in other stakeholder collaborations, see p. 39.

InnovOcean Site

The InnovOcean site in the harbour of Ostend was established by the Flemish Government of Belgium as a hub for marine and maritime science and development. The site houses seven marine research organizations, including the UNESCO International Oceanographic Commission's project office for International Oceanographic Data and Information Exchange (IODE), the Flanders Marine Institute (VLIZ) and the Marine Board.



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The organizations located at the InnovOcean site not only share use of meeting facilities and equipment but also benefit from an increased pool of expertise and a regular exchange of information and best practice. In 2011, the Marine Board collaborated with InnovOcean colleagues on several activities and events.

The Marine Board meeting facilities at the InnovOcean site allow it to frequently organize or host pan-European meetings (Framework Project meetings, thematic workshops, fora, etc.).



EU FP7 EMAR²RES workshop on 'Identifying Areas of Common Interest', series 3 (19-20 April 2011) at the Marine Board offices at the InnovOcean site

STRATEGY

The Marine Board delivers its strategic vision and science foresight through high-level publications and statements, targeted both at the research community and policymakers.

Marine Board publications connect science and policy by:

- Highlighting urgent marine science issues, challenges and opportunities and identifying the corresponding research priorities and policy needs necessary to address them;
- Providing high-level recommendations ready to be taken up by programme developers and policymakers;
- Proposing a vision and strategy for the topic at hand to guide the scientific community and EU decision makers towards delivering the goals of the European Research Area through increased excellence, coordination and competitiveness in European science.

A full list of Marine Board publications is provided in Annex IX. All publications are available for download from: www.marineboard.eu/publications

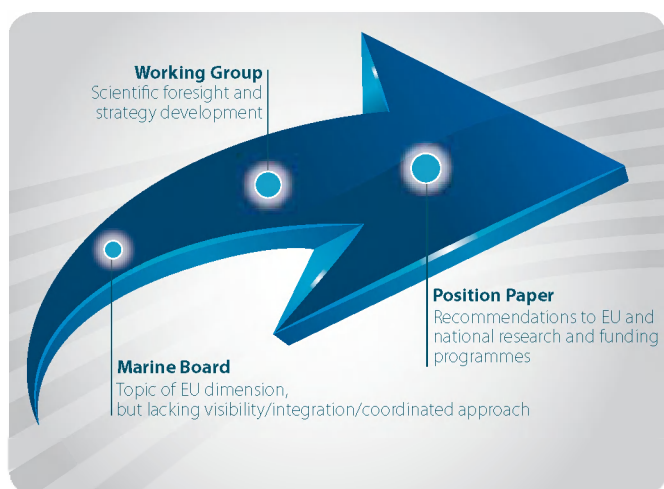
Marine Board Position Papers

Position papers are the Marine Board's primary science foresight and priority-setting instrument. They are prepared by international working groups of experts convened by the Marine Board to address critical matters of strategic importance for marine science and technology as well as society at large.

Marine Board position papers directly impact European research agendas, bridging the gap between scientific priorities and policy requirements. Marine Board position papers have influenced Framework Programme Work Programmes and calls as well as national marine research programmes and initiatives.

At the end of 2011 the Marine Board has published 16 position papers on a wide variety of marine research related topics (a full list is available in Annex IX).

In 2011, the Marine Board published a new position paper on *Monitoring Chemical Pollution in Europe's Seas: Programmes, Practices and Priorities for Research* (see below). One new working group, on Oceans and Human Health, was launched and two working groups, on Marine Protected Areas and Marine Microbial Diversity, continued their work throughout the year (see p. 31 and 32).



Position Paper 16: *Monitoring Chemical Pollution in Europe's Seas: Programmes, Practices and Priorities for Research*, November 2011

Working Group Acronym: WG POL

Membership: 14 experts from 10 countries

Duration: January 2008 - November 2011

Output: Marine Board Position Paper 16

Monitoring Chemical Pollution in Europe's Seas: Programmes, Practices and Priorities for Research (November 2011)

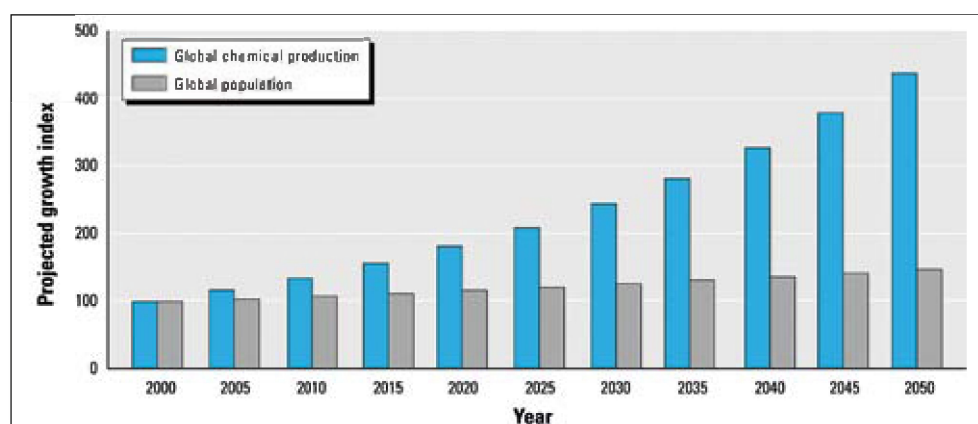


About 30,000 of the chemicals currently on the EU market have a production volume higher than one tonne per year. Increasing numbers of these substances end up in rivers, estuaries and seas with potentially damaging effects on marine organisms, ecosystems and processes.

This Marine Board position paper shows that regulatory frameworks and monitoring programmes do not address the full range of potentially damaging pollutants and completely overlook many of the “new” pollutants which have entered use in recent years. The position paper provides an overview of the existing monitoring and assessment frameworks, a critical evaluation of current monitoring practices, and examples of emerging chemicals of concern and mechanisms to include them in monitoring programmes.

The primary conclusions and recommendations of this position paper are to:

- Fully implement state-of-the-art environmental risk assessment procedures (combining exposure and effects assessment) to evaluate the full impact of chemical substances on the different compartments of coastal and open sea systems.
- Further improve coordination, cooperation and harmonization between existing monitoring efforts and those under development, to avoid duplication of effort, loss of expertise and a reduced willingness to fulfil obligations towards regional conventions.
- Ensure that the development and implementation of monitoring programmes for the assessment of chemicals in marine and coastal environment follows a science-based and dynamic progress.
- Apply more resources targeted at developing appropriate approaches, tools and practices (education and training) to improve the acquisition and management of monitoring data.



It is projected that growth in global chemical production will significantly outpace the global population growth. Image credit: Wilson and Schwarzman 2009; extract from the Marine Board position paper *Monitoring Chemical Pollution in Europe's Seas*.

Working Group on Marine Microbial Diversity

Working Group Acronym: WG MICROCEAN

Membership: 12 experts from 10 countries

Start date: March 2010

Output: Strategic Position Paper
(publication foreseen: May 2012)

Recent scientific research illustrates that marine microbes represent the most important and diverse biological grouping on Earth. The marine microbial biomass contributes significantly to all global cycles of matter and energy.

A number of major European and international projects have made significant progress in addressing marine microbial diversity, e.g. the FP6 Networks of Excellence, *Marine Genomics Europe* (MGE) and *Marine Biodiversity and Ecosystem Functioning* (MarBEF), as well as the international initiatives, *Census of Marine Life* (CoML) and the *International Census of Microbes* (ICoMM). The Marine Board has brought together leading European experts to assess the current state-of-the-art in marine microbial research, identify concrete research needs and priorities and formulate key science policy recommendations.

The WG MICROCEAN, chaired by Professor Frank Oliver Glöckner (Max Planck Institute for Marine Microbiology, Germany), aims to:

- Re-emphasize the importance and role of microbes in the marine environment;
- Identify strategic areas for Europe in the realm of marine microbial diversity research, with specific reference to ecosystem functioning, biogeochemical cycling and global change; and
- Provide recommendations and a roadmap to guide European research in the medium-term (to 2020) in response to global change, improving the European competitiveness in this field.

Information on the WG MICROCEAN membership can be found in Annex III. Further information on the Marine Board WG MICROCEAN is available on the website: www.marineboard.eu/marine-microbial-diversity



Members of the Marine Board Working Group on Marine Microbial Diversity at their meeting in Brussels on 10-11 February 2011, from left: Fergal O’Gara (BIOMERIT Research Centre, UCC, Ireland), Niall McDonough (Marine Board), Francisco Hernandez (Flanders Marine Institute, Belgium), Lucas J. Stal (Netherlands Institute of Ecology, KNAW), Jan-Bart Calewaert (Marine Board), Ruth-Anne Sandaa (University of Bergen, Norway), Frank Oliver Glöckner (WG Chair, Max Planck Institute for Marine Microbiology, Germany) and Adriano Bordalo (CIIMAR and ICBAS – University of Porto, Portugal).

Working Group on Marine Protected Areas

Working Group Acronym: WG MPAs

Membership: 10 experts from 9 countries

Start date: March 2010

Output: Strategic Position Paper

(publication foreseen: December 2012)

Marine Protected Areas (MPAs) are established to protect or conserve ecologically sensitive areas and endangered species. MPAs are critical to obtain sustainable management of all types of human activities, including fisheries, research and recreation. Therefore, MPAs constitute a strong management tool and a key starting point to pave the way for an ecosystem-based management of the marine environment.

However, no common European framework exists for setting up clear priorities and management mechanisms for MPAs. Such a framework is urgently needed to efficiently respond to increasing anthropogenic use of the sea and of its seabed as well as expanding industry interests.

The Marine Board WG MPAs, chaired by Dr Esben Olsen (Institute of Marine Research, Norway) aims to strengthen the research basis to inform, engage and empower stakeholders in planning a network of MPAs. Furthermore, the WG is working to profile and consider the requirements for the establishment of a strategic network of MPAs throughout Europe.

The working group is working on delivery of a position paper which will:

- Highlight the key scientific priorities for implementation of an MPA network in Europe;
- Provide European research programme managers and EU / national decision makers with a list of recommendations to inform and support the rapid implementation of a European MPAs network.

Information on the WG MPAs membership can be found in Annex III. Further information on the Marine Board WG MPAs is available on the website: www.marineboard.eu/marine-protected-areas

Participants at the Marine Board working group meeting on Marine Protected Areas, March 2011 from left: Beth Stocker (Joint Nature Conservation Committee, UK), Thomas Rammelt (North Sea Foundation, Netherlands), Marta Ribeiro (Centre for Legal and Economic Research / University of Porto, Portugal), Esben Olsen (WG Chair, Institute of Marine Research, Norway), Marijn Rabaut (University of Gent, Belgium), Luciano Fonseca (International Oceanographic Commission of UNESCO), Aurélien Carnobbère (Marine Board) and Stelios Katsanevakis (Hellenic Centre for Marine Research, Greece)



Working Group on Oceans and Human Health

Working Group Acronym: WG OHH

Membership: 8 experts from 6 countries

Start date: April 2011

Output: Strategic Position Paper
(publication foreseen: October 2012)

Life on Earth is fundamentally and inextricably linked to the oceans. Oceanic processes affect climate and determine the food and material resources upon which we depend. Human health benefits largely from the goods and services provided by the marine and coastal environment through, for example, the quality of air we breathe, the medicines we take and the food we eat. Seas and oceans also offer economic and recreational opportunities which are important for our well-being.

At the same time, complex factors and processes in the marine environment may negatively influence human health, for example, the occurrence and distribution of pathogenic organisms and natural and man-made toxic compounds. Our understanding of the relationships between the natural environment and human health are very limited and still relatively unexplored. This knowledge gap effects the development of effective policies for sustainable use of resources and environmental and human-health protection.

This Marine Board working group, chaired by Professor Michael Moore (Plymouth Marine Laboratory / Peninsula Medical School, UK), aims to provide an assessment of the European research capability and future science and policy needs in this emerging area. The working group will build on relevant experience in other parts of the world, in particular in the USA.

Information on the WG OHH membership can be found in Annex III. Further information on the Marine Board WG OHH is available on the website: www.marineboard.eu/oceans-and-human-health



Professor Mike Moore, standing (WG Chair, Plymouth Marine Laboratory) giving a presentation to the Marine Board plenary at the Spring 2011 Plenary Meeting in Tallinn on 10 May 2011

Other Strategic Publications

Marine Board-CLAMER Special Report *Climate Change and Marine Ecosystem Research: Synthesis of European Research on the Effects of Climate Change on the Marine Environment*, September 2011



In 2011, the Marine Board Secretariat concluded its tasks in the the FP7 project, CLAMER (see also p. 22). The Secretariat was responsible for one of the main deliverables of the project: a synthesis report on European research on climate change impacts on the marine environment.

This report provides an integrated assessment of the state-of-the-art of the European marine climate change research.

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The impacts of fishing on the capacity of marine populations and ecosystems to respond to climate change are poorly understood. Extract from the Marine Board – CLAMER Special Report *Synthesis of European Research on the Effects of Climate Change on Marine Environment*

It also demonstrates the breadth of past and on-going research on climate change impacts on the marine environment (including socio-economic consequences) and highlights key thematic and regional issues and priorities.



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The drafting of the publication was carried out by a core group of authors composed of scientific experts drawn from the project partners representing major Networks of Excellence, large EU projects and research networks. In addition, several external experts were invited to join from key European projects (e.g. the European Project on Ocean Acidification EPOCA) and relevant networks and organizations (e.g. EFARO, ICES, CoML/EuroCoML).

The Marine Board Secretariat facilitated the drafting process providing overall supervision and editing while contributing text for specific sections.

The Marine Board - CLAMER Special Report can be downloaded from:

www.marineboard.eu/publications

Science Policy Briefing on Marine Biodiversity

Since its establishment, the Marine Board has contributed significantly to the development of marine biodiversity science in Europe. However, the presence and role of the marine biodiversity community is still weak in many international initiatives. To address this, the Marine Board highlighted the need to develop a new document on the importance and positioning of marine biodiversity research (research priorities, needs and capacities).

Throughout 2011, the Marine Board has been fostering the development of a Science Policy Briefing on Marine Biodiversity, led by Professor Carlo Heip of the Royal Netherlands Institute for Sea Research (NIOZ). This short document aims to highlight recent achievements in marine biodiversity research, explore urgent remaining scientific questions and suggest new research and management activities to address them, taking into account the current EU policy framework and international agreements and conventions. It is considered highly important to build on previous progress and to secure a long-term commitment in Europe towards supporting marine biodiversity research.

The publication is scheduled for publication in mid-2012.



Policy Statements

European marine science and science-policy are developing and changing rapidly. This calls for continuous alertness from the Marine Board to the growing number of initiatives and policy developments, and the flexibility and ability to make targeted interactions and responses, when necessary.

In 2011, the Marine Board developed the following statements / responses to policy developments:

- **From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation Funding**
- Marine Board Response to the EC Green Paper (May 2011);
- **Areas of untapped potential for the development of the European Research Area**
- Marine Board Response to the EC Consultation (November 2011).

All Marine Board statements are available for download from: www.marineboard.eu/science-policy/policy-statements

Stated Declaration Priority	Detail	Corresponding ERA Objective
Joint Programming	Support for the new Joint Health and Productive Seas and Coasts (JH2P Coasts)	Close cooperation and coordination of Member States' research investments (cross-cutting governance)
European Ocean Observing System (EOOS)	Support for the development of a truly integrated, multi-scale EOOS to deliver comprehensive, open access and quality controlled marine environmental data, providing marine knowledge for research, industry and policy support (e.g. Marine Strategy Framework Directive)	Coordination of world class research infrastructure (in the area of ocean observation)
Research to knowledge	Establishment of mechanisms to enhance the translation, use and impact of innovation generated through research	Knowledge sharing, exchange and translation
Innovation	Enhanced support for innovation and commercialisation of marine/marine products, processes, services and concepts	Meeting the Innovation Union and Europe 2020 objectives
Training and Career Development	Improve training and mobility opportunities for marine researchers and technologists and ensure stable and attractive career pathways	A single and open labour market for researchers
International Cooperation	EU level mechanisms to strategically enhance international cooperation in marine science and technology	Global research cooperation

Extract from the Marine Board response to the European Commission consultation on the European Research Area, November 2011

Carlo Heip, standing (lead author of the science policy briefing on Marine Biodiversity, Royal Netherlands Institute for Sea Research) presents the concept of the publication to the Marine Board at the Spring 2011 Plenary Meeting in Tallinn on 10 May 2011

Navigating the Future Series

Since 2001, the Marine Board has published three high-level position papers under its *Navigating the Future* banner. The *Navigating the Future* series has been recognized, both by researchers and policymakers, as providing critical periodic foresight and recommendations on emerging marine science topics and needs, and associated societal challenges and opportunities.

Navigating the Future IV

In 2011, the Marine Board continued work on the preparation of *Navigating the Future IV*. The publication will provide a detailed strategic overview of the marine science challenges and opportunities to be addressed in the next decade. *Navigating the Future IV* will deliver high-level recommendations to advance seas and oceans research at both Member State and European levels.

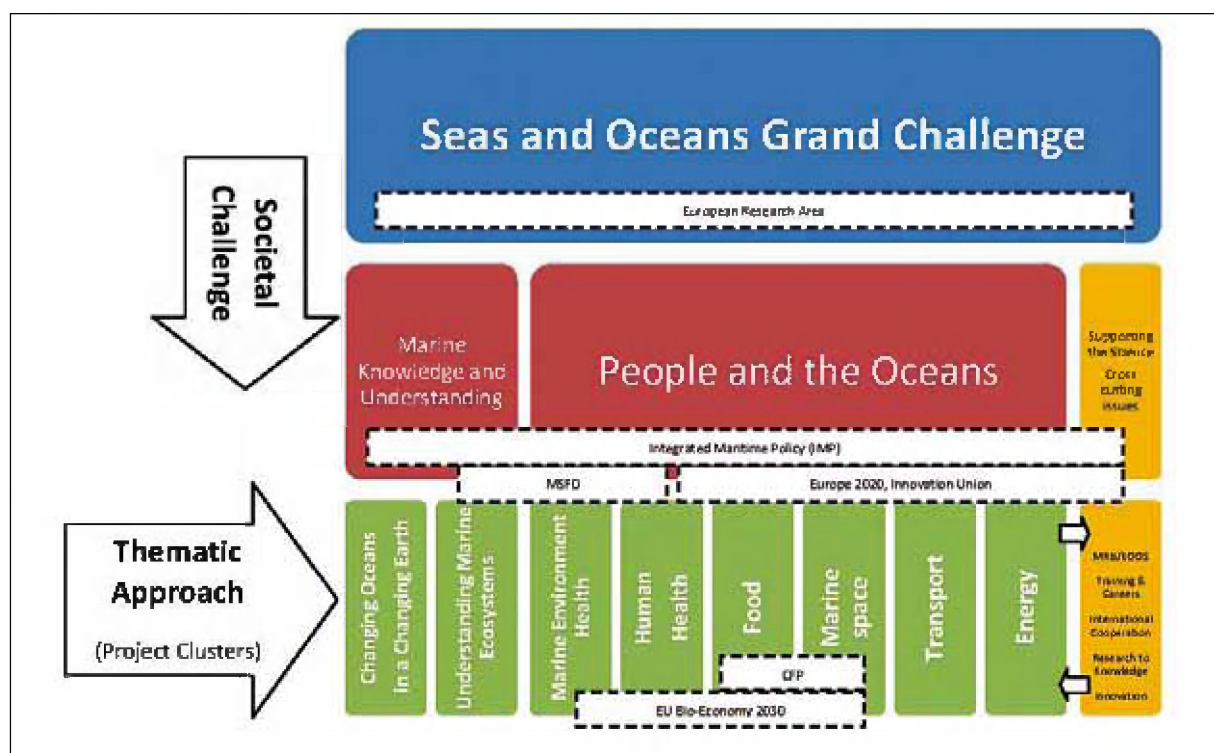
The preparatory work for this position paper has already influenced several strategic Marine Board outputs, in particular:

- The challenge-based programme of the influential EurOCEAN 2010 conference (see www.eurocean2010.eu);
- The Marine Board response to the European Commission consultation on the Common Strategic Framework (later named Horizon 2020).
- A Marine Board presentation on future strategic priorities in seas and oceans research at a dedicated DG MARE Marine Board Seminar (08 June 2011, Brussels).

In preparing *Navigating the Future IV*, the Marine Board has involved a number of key European networks and projects in order to provide a high-level, state-of-the-art overview and draw a pertinent list of priorities and recommendations for seas and oceans research in the next decade.

Further information on the *Navigating the Future* series is available from: www.marineboard.eu/science-foresight/navigating-the-future

Extract from the Marine Board response to the European Commission consultation on the Common Strategic Framework (Horizon 2020), May 2011



VOICE

One of the Marine Board's core objectives is to forge a collective vision on the future direction of European marine science and technology. The Marine Board facilitates its members and external stakeholders to voice their common vision via science policy conferences, joint statements and high-impact communication strategies.

Conferences

High-Level CLAMER Conference *Living with a Warming Ocean: European Research and Public Perception of Climate Change Impacts in the Marine Environment* (also see p. 23)

The high-level CLAMER Conference was organized as a final deliverable of the CLAMER project (see p. 22), by the Flanders Marine Institute (VLIZ).

The conference brought together marine climate change researchers and European policymakers to discuss how the research gaps to be addressed in the coming decade should be better tackled by policy and science to achieve a coherent and sustainable framework for global climate change mitigation.

The Marine Board contributed to the development of the conference programme and moderated a breakout session on climate change impacts and European policies.



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Niall McDonough (Marine Board Executive Scientific Secretary) presents the conclusions and recommendations of the conference breakout workshop on Climate Change impacts and European marine policies (Dr John Pinnegar, CEFAS, UK, and Professor Katja Philippart, NIOZ, Netherlands, are also pictured)

The CLAMER Conference:

- Highlighted recent marine climate change scientific developments and recommendations, based on the International Panel on Climate Change (IPCC) assessments and the Marine Board-CLAMER Synthesis Report (see p. 34).
- Explored how public understanding of marine climate change and its impacts can influence policy developments; and
- Discussed ways to bridge the existing gap between scientific knowledge and policy decisions to allow urgent but also long-term actions be taken in the best interest of the environment and, therefore, society.

In addition to the plenary sessions, focused breakout workshops were organized during the afternoon of the conference. The Marine Board Secretariat moderated the breakout session on *Climate Change Impacts and European Marine Policies*.

The conference proceedings are available for download from: www.clamer.eu/library



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SEAS-ERA – JPI Oceans Strategic Forum

On 07 September 2011, the Marine Board, as a partner in SEAS-ERA, convened the 1st SEAS-ERA Forum in Brussels. The Forum provided an opportunity for updates and exchange of information between the SEAS ERA project partners and the Joint Programming Initiative on *Healthy and Productive Seas and Oceans* (JPI Oceans), as well other marine and environmental ERA NETs, including CIRCLE II, BIODIVERSA, Black Sea ERA-NET and MariFish. A broader range of stakeholders to all of these initiatives also participated.

The SEAS-ERA project, which brings together 20 research funding agencies and the Marine Board, aims to create closer synergies between national programmes which support marine research in three European seas basins (see p. 26), and is an important precursor initiative to the JPI Oceans. JPI Oceans is being developed as a coordinating and integrating platform, open to all EU Member and Associated States, that will promote the ERA and provide knowledge-based solutions to the major seas and oceans research and policy challenges faced by Europe. Taking a long-term perspective, JPI Oceans will address cross-cutting issues, foster specific cooperation initiatives among partner countries, and promote interaction with stakeholders.

This SEAS-ERA - JPI Oceans Forum highlighted the need to engage with various stakeholders:

- At the regional level through regional conventions (Black Sea Convention, OSPAR, HELCOM, etc.);
- At the national level through engaging with national actors in charge of the implementation of policies;
- Within the sphere of human capacity building, to trigger interactions with new types of stakeholders and provide additional added value to the project outputs.

A report of the 1st SEAS-ERA Forum is available for download from www.seas-era.eu/np4/19.html



Joan Albaiges (SEAS-ERA Coordinator, Spanish Ministry of Economy and Competitiveness) presenting the progress of the SEAS-ERA project at the SEAS-ERA – JPI Oceans Strategic Forum on 07 September 2011 in Brussels

Marine Board lunchtime seminar at EC Directorate-General for Maritime Affairs and Fisheries

On 08 June 2011, the Marine Board delivered a lunchtime seminar at the European Commission DG MARE headquarters in Brussels. This event offered an opportunity for direct interaction and debate with EC representatives, including Lowri Evans, Director General for Maritime Affairs and Fisheries. Niall McDonough, Marine Board Executive Scientific Secretary, promoted the key message of the Ostend Declaration that “the Seas and Oceans are one of the Grand Challenges for the 21st Century”. On behalf of the Marine Board he called for coherent, cross-cutting and multidisciplinary research which will be a fundamental requirement for delivery of Europe 2020¹ innovation strategy.

2nd MARCOM+ Forum

On 08 September, the Marine Board organized the 2nd MARCOM+ Forum in Brussels. This event was part of the Marine Board activities within the FP7 MARCOM+ marine-maritime partnership project, described in more detail on page 25 of this report.



Speakers at the 2nd MARCOM+ Forum (08 September 2011, Brussels), from left: Adi Kellermann (International Council for the Exploration of the Sea, ICES), Mike Mannaart (Coastal and Marine Union, EUCC), Hans Dahlin (The European Global Ocean Observing System, EuroGOOS), Willem Laros (Waterborne TP / Community of European Shipyards Associations, CESA) and Niall McDonough (Marine Board)

¹ <http://ec.europa.eu/europe2020>

EuroOCEAN Conference Series

EuroOCEAN conferences are major European marine science policy conferences providing a forum for policymakers and strategic science planners, both at European and Member State level, to interface with the marine research community and marine and maritime stakeholders. The Marine Board has been instrumental in organizing the EuroOCEAN conferences since 2000.



In 2010, the Marine Board coordinated the programme and exhibition for the influential EuroOCEAN 2010 conference (12-13 October 2010, Ostend), organized as a Belgian EU Presidency Event in collaboration with European Commission and the Flanders Marine Institute (VLIZ). The Marine Board Secretariat delivered the Conference report in early 2011.

Furthermore, in 2011, the Marine Board, with technical support from VLIZ, developed and launched a dedicated EuroOCEAN conferences website: www.eurooceanconferences.eu

All information and outputs of the EuroOCEAN conferences are available on this website.

Pan-European Initiatives and Networks

The Marine Board is represented on scientific panels or acts as an observer in a number of European initiatives in order to promote joint identification of priorities and avoid duplication of efforts.

In 2011, the Board contributed to the following initiatives and networks:



European Consortium for Ocean Drilling Research, ECORD Council – as observer (<http://www.ecord.org>);



Waterborne Technology Platform – as observer (<http://www.waterborne-tp.org>);



Expert Group on Marine Research Infrastructures (established by the EC DG for Research and Innovation) – as observer. In 2011, the Marine Board hosted the 5th Meeting of this Expert Group in Ostend. (http://ec.europa.eu/research/mmrsexpertgroups/20110124_en.htm);



European Marine Observation and Data Network, EMODNET, Biological Lot (coordinated by the Flanders Marine Institute, VLIZ) – as member of Coordination Board (<http://bio.emodnet.eu>);



The European Fisheries and Aquaculture Research Organisation, EFARO – as observer (<http://www.efaro.eu>);



BONUS – as Advisory Board member (<http://www.bonusportal.org>);

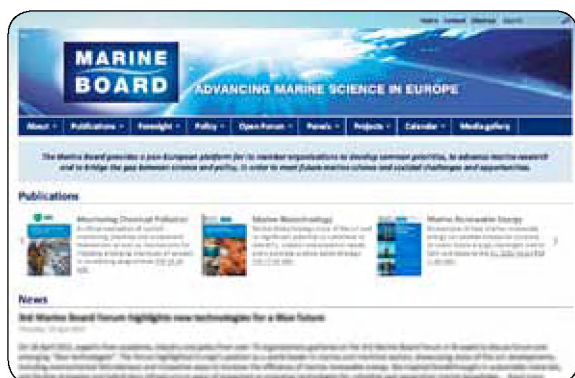
Communication Output



Available for download from
www.marineboard.eu/about/profiling-materials

Website

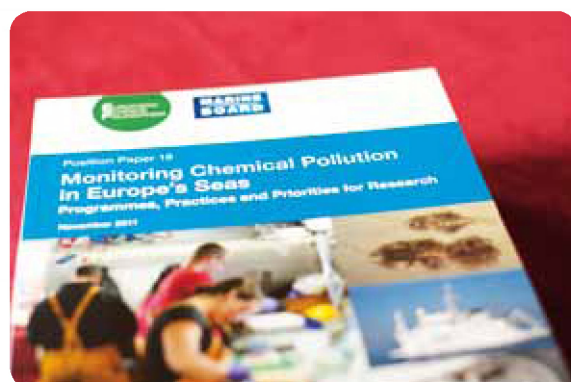
In 2011, the Marine Board decided to develop a dedicated Marine Board website to replace the Marine Board web pages embedded in the ESF website. The new website will provide comprehensive information about all Marine Board activities and allow a quick and easy overview of the main strategic outputs, such as position papers, conferences and collaborative projects. Flanders Marine Institute (VLIZ) provided the technical support for the website development as an in-kind contribution. The website is scheduled for launch early in 2012 and will be available at the following link: www.marineboard.eu.



Dissemination

The Marine Board publications webpage features all Marine Board publications since 2000 available for download free of charge (please visit www.marineboard.eu/publications).

Marine Board publications can also be requested by email to the Secretariat: info@marineboard.eu.



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MARINE BOARD FINANCES 2011

The Marine Board annual budget is based on:

- Member Organization contributions;
- Special contributions (towards specific Marine Board activities); and
- External contracts, e.g. EC FP7 projects.

The Flemish Government of Belgium provides an in-kind contribution to the Board through the provision of office space, equipment and running

costs at the InnovOcean site in Ostend. The Flemish Government support also covers the cost of employing the Marine Board Administration and Coordination Officer.

Member organizations also provide in-kind contribution through support for participation of delegates and national experts in Marine Board activities (i.e. travel and subsistence to attend meetings).

Available Funds 2011

All figures in Euro '000s

Member Contributions	338.5
FP drawdown on employment costs (estimate) Secretariat activities and staff time related to external projects	237.7*
Special Contribution Research Council of Norway	5
Total core income	581.2*
Adjustment of provisions from previous years (reimbursement of salary costs)	37
Provisions for outstanding payments	2.6
Total other income	39.6
Total available funds 2011	620.8*

*Estimate

Expenditure 2011

Secretariat employment costs	354.6
Other staffing costs	6.7
Meetings Secretariat staff travel and meeting logistics	25.8
Publications and dissemination	17.9
Office consumables and equipment	12.4
Staff training	1.5
Overhead to the ESF	16.9
Other Bank transfer costs, other fees, depreciation of fixed assets	3.1
Total expenditure 2011	438.9

Marine Board Reserve Fund¹

Available funds 2011	620.8
Expenditure 2011	438.9
Total 2011 balance	181.9
2010 carry over	67.9
Total reserve fund as of 31/12/2011 (estimate)	249.8

¹ In 2010, the Marine Board approved a proposal to create a reserve fund by setting aside any annual balance of income over expenditure. This reserve fund is designed to provide a contingency against any future reduction of income.

ANNEXES

Annex I. Marine Board Member Organizations and Delegates 2011

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)**
Fund for Scientific Research - Flanders
Jan Mees (Marine Board vice-Chair,
May 2006-May 2011)

CROATIA

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

CYPRUS

- **Ωκεανογραφικού Κέντρου Κύπρου**
Cyprus Oceanography Centre
Georgios Georgiou
George Zodiatis

DENMARK

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

ESTONIA

- **Eesti Teaduste Akadeemia**
Estonian Academy of Sciences
Tarmo Soomere

FINLAND

- **Suomen Akatemia**
Academy of Finland
Kyösti Lempa
- **Suomen Ympäristökeskus**
Finnish Environment Institute
Markku Viitasalo

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 Exploration of the Sea
Antoine Dosdat (Marine Board vice-Chair,
May 2007-May 2012)
- **Marine Universities of France**
Jean-Alain Pocard
Yves-Marie Paulet

GERMANY

- **Deutsche Forschungsgemeinschaft (DFG)**
German Research Foundation
Bodo von Bodungen
- **Hermann-von-Helmholtz-Gemeinschaft deutscher Forschungszentren (HGF)**
Association of National Research Centres
Karin Lochte
- **Leibniz-Institut für Meereswissenschaften an der Universität Kiel (IFM-GEOMAR)**
Leibniz Institute of Marine Sciences at the Christian-Albrechts Universität zu Kiel
Peter Herzig

GREECE

- **Ελληνικό Κέντρο Θαλάσσιων Ερευνών**
Hellenic Centre for Marine Research (HCMR)
Kostas Nittis (Marine Board Chair,
May 2011 – May 2014)

IRELAND

- **Foras na Mara**
Marine Institute
Geoffrey O'Sullivan (Marine Board vice-Chair,
October 2008-October 2011)

ITALY

- **Consiglio Nazionale delle Ricerche (CNR)**
National Research Council
Guiseppe Cavarretta
- **Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS)**
National Institute of Oceanography and Experimental Geophysics
Alessandro Crise

- **Consorzio Nazionale Interuniversitario per le Scienze del Mare (CoNISMa)**

National Inter-University Consortium for Scientific Research
Ferdinando Boero

NETHERLANDS

- **Koninklijke Nederlandse Akademie van Wetenschappen (KNAW)**

Royal Netherlands Academy of Arts and Sciences
Carlo Heip (Marine Board vice-Chair, October 2011-October 2014)

- **Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO)**

Netherlands Organization for Scientific Research
Josef F. Stuefer

NORWAY

- **Havforskningsinstituttet**

Institute of Marine Research
Tore Nepstad
Erlend Moksness

- **Norges Forskningsradet**

The Research Council of Norway
Lars Horn (Marine Board Chair, May 2006-May 2011)

- **Universitetet i Bergen (UiB)**

University of Bergen
Peter Haugan (Marine Board vice-Chair, May 2011-May 2014)

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-
Joao Coimbra
Vitor Vasconcelos

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

Science and Technology Foundation
Mario Ruivo
Ricardo Santos

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 Científicas (CSIC)**

Council for Scientific Research
Beatriz Morales-Nin (Marine Board vice-Chair, May 2009-May 2012)

- **Instituto Español de Oceanografía (IEO)**

Spanish Institute of Oceanography
Demetrio de Armas

SWEDEN

- **Havsmiljöinstitutet**

Swedish Institute for the Marine Environment
Michael Thorndyke

TURKEY

- **Türkiye Bilimsel ve Teknik Arastırma Kurumu (TÜBİTAK)**

The Scientific and Technological Research Council of Turkey
Colpan Polat-Beken (Marine Board vice-Chair, May 2009-May 2012)

UNITED KINGDOM

- **Natural Environment Research Council (NERC)**

Mike Webb

- **National Oceanography Centre (NOC)**

Edward Hill (Marine Board vice-Chair, May 2007-May 2012)
Jacky Wood

Up-to-date information on the Marine Board Members is available from:
www.esf.org/marineboard/about/members

Annex II Marine Board Plenary Meetings 2011

Marine Board Spring 2011 Plenary Meeting, 10-11 May 2011, Tallinn, Estonia List of Participants

Marine Board Delegates

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Horn, Lars (Chair)	Research Council of Norway (RCN), Norway	lho@forskningsradet.no
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Invited Speakers

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Invited Guests

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Marine Board Autumn 2011 Plenary Meeting, 13-14 October 2011, Madrid, Spain

List of Participants

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ANNEXES

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Ivica Vilibic	Institute Of Oceanography Fisheries (IZOR), Croatia	vilibic@izor.hr
Jacky Wood	Natural Environment Research Council (NERC), UK	jkwo@noc.soton.ac.uk

Invited Speakers

Representative	Organisation	Email
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Fritz Köster	National Institute for Aquatic Research (DTU Aqua), Denmark	fwk@aqua.dtu.dk
Catherine Mevel	European Consortium for Ocean Research Drilling (ECORD)	mevel@ipgp.jussieu.fr
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Marine Board Secretariat

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Niall McDonough	Marine Board Secretariat	nmcdonough@esf.org
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Dina Eparkhina	Marine Board Secretariat	deparkhina@esf.org
Maud Evrard	Marine Board Secretariat	mevrard@esf.org

Annex III: Marine Board Working Group Members 2011

Working Group on Risk Assessment and Monitoring of Existing and Emerging Chemicals in the European Marine and Coastal Environment (WG POL)

Members:

- Colin Janssen, Ghent University, Belgium – working group co-Chair
- Patrick Roose, Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM), Belgium - working group co-Chair
- Joan Albaiges, Spanish National Research Council (CSIC), Spain
- Maria João Bebianno, University of Algarve, Portugal
- Kees Camphuysen, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands
- Margot Cronin, Marine Institute, Ireland
- Jan de Leeuw, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands
- Geir Wing Gabrielsen, Norwegian Polar Institute, Norway
- Tom Hutchinson, Plymouth Marine Laboratory, United Kingdom
- Ketil Hylland, University of Oslo, Norway
- Bo Jansson, Stockholm University, Sweden
- Munro Bjørn Jenssen, Norwegian University of Science and Technology (NTNU), Norway
- Detlef Schulz-Bull, Baltic Sea Research Institute-Warnemuende, Germany
- Piotr Szefer, Medical University of Gdansk, Poland

Marine Board support:

- Science officer: Jan-Bart Calewaert
- Manager: Niall McDonough

Working Group on Marine Microbial Diversity Role in Ecosystem Functioning and Environmental Change (WG MICROCEAN)

Members:

- Frank Oliver Glöckner, Max Planck Institute for Marine Microbiology, Germany – working group Chair

- Adriano Bordalo, Centre of Marine and Environmental Research (CIIMAR) and of the Institute of Biomedical Sciences of Abel Salazar (ICBAS), University of Porto, Portugal
- Josep Maria Gasol, Mediterranean Marine and Environmental Centre (CMIMA) of the Spanish National Research Council, Spain
- Åke Hagström, Swedish Institute for the Marine Environment, Sweden
- Francisco Hernandez, Flanders Marine Data Centre (VMDC), Belgium
- Mathias Labrenz, Leibniz Institute for Baltic Sea Research, Germany
- Fergal O’Gara, National University of Ireland Cork (UCC), Ireland
- Pitta, Paraskevi, Hellenic Centre for Marine Research (HCMR), Greece
- Ruth-Anne Sandaa, University of Bergen (UiB), Norway
- Lucas J. Stal, Institute of Ecology of the Royal Netherlands Academy of Arts and Sciences (NIOO-KNAW), Netherlands
- Elena Stoica, National Institute for Marine Research and Development “Grigore Antipa”, Romania
- Marta Varela Rozados, Spanish Institute of Oceanography (IEO), Spain

Marine Board support:

- Science officer: Jan-Bart Calewaert
- Manager: Niall McDonough

Working Group on Use of Marine Protected Areas for Ecosystem-Based Management (WG MPAs)

Members:

- Esben Olsen, Institute of Marine Research (IMR), Norway – working group Chair
- Enrique Macpherson, Spanish National Research Council (CSIC), Spain
- Raquel Goñi, Spanish Oceanography Institute (IEO), Spain
- Dominique Pelletier, French Sea Research Institute for Exploitation of the Sea (IFREMER), France

- Marijn Rabaut, Ghent University, Belgium
- Stelios Katsanevakis, Hellenic Centre for Marine Research (HCMR), Greece
- Tania Zaharia, National Institute for Marine Research and Development “Grigore Antipa”, Romania
- Britas Klemens Eriksson, University of Groningen, Netherlands
- Phil Weaver, National Oceanography Centre, United Kingdom
- Marta Chantal Ribeiro, University of Porto, Portugal

Marine Board support:

- Science officer: Aurélien Carbonnière, Maud Evrard
- Manager: Niall McDonough

Working Group on Oceans and Human Health (WG OHH)

Members:

- Michael Moore, Plymouth Marine Laboratory (PML) and Peninsula Medical School, UK – working group Chair
- Lora Fleming, European Centre for Environment and Human Health, UK
- Philipp Hess, French Research Institute for Exploration of the Sea (Ifremer), France
- Angela Koehler, Alfred Wegener Institute for Polar and Marine Research (AWI), Germany
- Aldo Viarengo, University of Eastern Piedmont, Alessandria, Italy
- Lise Madsen, National Institute of Nutrition and Seafood Research, Norway
- Richard Owen, Peninsula College of Medicine and Dentistry, UK
- Vitor Vasconcelos, Centre of Marine and Environmental Research (CIMAR), Portugal

Marine Board support:

- Science officer: Maud Evrard
- Manager: Niall McDonough

Annex IV: Marine Board Panel Members 2011

Marine Board Communications Panel (MBCP)

Members:

- Jan Seys, Flanders Marine Institute (VLIZ), Belgium – panel Chair
- Myriam Altius, French Research Institute for Exploitation of the Sea (IFREMER), France
- Jan Boon, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands
- Anne Ditlefsen, Research Council of Norway, Norway
- Géraldine Fauville, Sven Lovén Center - Kristineberg, University of Gothenburg, Sweden
- Albert Gerdes, Centre for Marine Environmental Sciences (MARUM), Germany
- John Joyce, Marine Institute, Ireland
- Kim Marshall Brown, National Oceanography Centre (NOC), United Kingdom
- Kjartan Mæstad, Institute of Marine Research (IMR), Norway
- Margarete Pauls, Alfred Wegener Institute for Polar and Marine Research (AWI), Germany
- Joanna Piwowarczyk, Institute of Oceanology of the Polish Academy of Sciences (IO-PAN), Poland
- Yianna Samuel-Rhoads, Cyprus Oceanography Centre, Cyprus
- Cristina Serra, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Andreas Villwock, Leibniz Institute of Marine Sciences at the Christian-Albrechts Universität zu Kiel (IFM-GEOMAR), Germany

Marine Board support:

- Science officer: Maud Evrard
- Manager: Niall McDonough

Marine Board European Scientific Diving Panel (ESDP)

Members:

- Jean-Pierre Féral, Institut national des sciences de l'Univers (INSU) of the French National Centre for Scientific Research, France – panel Chair
- Martin Sayer, Scottish Association for Marine Science (SAMS), United Kingdom – panel deputy Chair
- Philipp Fischer, Alfred Wegener Institute for Polar and Marine Research (AWI), Germany – panel deputy Chair
- Giorgio Caramanna, Italian Association of Scientific Divers, Italy
- Pirkko Kekalainen, Finnish Scientific Diving Committee, Finland
- Roger Lindblom, University of Gothenburg, Sweden
- Alain Norro, Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM), Belgium

Marine Board support:

- Science officer: Aurélien Carbonnière
- Manager: Niall McDonough

Annex V: Meetings and Events Organized by the Marine Board Secretariat in 2011 (including jointly)¹

Date	Event
19/01/11	Marine Board ExCom meeting, Brussels
20/01/11	Marine Board European Scientific Diving Panel meeting, Brussels
10-11/02/11	Marine Board WG MICROCEAN meeting, Brussels
03/02/11	Marine Board-Westbanks North Sea Symposium on Marine Protected Areas Organising Committee meeting, Gent
22/03/11	Marine Board-VLIZ-Westbanks North Sea Symposium on Marine Protected Areas, Leuven
23/03/11	Marine Board WG MPA meeting, Leuven
11/04/11	Marine Board WG Oceans and Human Health kick-off meeting, Brussels
19-20/04/11	EC FP7 EMAR ² RES workshops, 3 rd series, Ostend
9/05/2011	Marine Board ExCom Meeting, Tallinn
10-11/05/2011	Marine Board Plenary Meeting, Tallinn
11/05/11	Marine Board Communications Panel, Tallinn
24/05/11	SEAS-ERA Final inventory meeting, Brussels
6-7/06/2011	EC Expert Group on Marine Research Infrastructures, Ostend
8/06/2011	Lunch-time Conference on Marine Board Activities at EC DG MARE, Brussels
15-16/06/2011	Marine Board WG MICROCEAN Wrap-up Meeting, Ostend
17/06/2011	MB ESDP Meeting, Brussels
21/06/2011	EU FP7 CLAMER Synthesis Report preparatory meeting, via video conference
30/06/2011	Marine Board WG OHH Meeting, Brussels
5/07/2011	EU FP7 CLAMER Scientific Review Paper preparatory meeting, Brussels
12/07/2011	EU FP7 MSFD Proposal preparatory meeting, Brussels
15/07/2011	EU FP7 CLAMER Synthesis Report preparatory meeting, via video conference
26/08/2011	EU FP7 CLAMER Synthesis Report preparatory meeting, via video conference
31/08/2011	EU FP7 MARCOM+ 2 nd Forum preparatory meeting, via conference call
1/09/2011	EU FP7 SEAS-ERA 1 st Forum preparatory meeting, via conference call
6/09/2011	EU FP7 MSFD Proposal preparatory meeting, Brussels
7/09/2011	EU FP7 SEAS-ERA 1 st Strategic Forum, Brussels

¹ This list includes only formal meetings and events involving multiple stakeholders

Date	Event
8/09/2011	EU FP7 MARCOM+ 2 nd Open Forum, Brussels
15/09/2011	EU FP7 CLAMER Conference 'Living with the Warming Ocean', Brussels
16/09/2011	Marine Board ExCom Meeting, Brussels
26-27/09/2011	Marine Board WG OHH Meeting, Brussels
3-4/10/2011	Marine Board WG MPAs wrap-up meeting, Paris
3-4/10/2011	Marine Board WG MPAs wrap-up meeting, Paris
13/10/2011	Marine Board ExCom meeting, Madrid
13-14/10/2011	Marine Board Autumn 2011 Plenary Meeting, Madrid
25-26/10/2011	Marine Board Communications Panel meeting, Trieste

Annex VI: Presentations to Meetings by Marine Board Executive Committee Members and Secretariat in 2011

Date	Event	Speaker(s)
14/02/11	EC FP7 MARCOM+ Policy Interface Panel meeting (Ijmuiden, the Netherlands)	Niall McDonough
10/03/11	ESF Expert Boards and Committees Chairs meeting (Strasbourg)	Lars Horn
10-11/03/11	EC FP7 SEAS-ERA Black Sea Workshop (Ankara)	Maud Evrard
23/03/11	Marine Board WG MPA meeting (Leuven)	Aurélien Carbonnière
31/03-01/04/11	EC FP7 SEAS-ERA Mediterranean workshop (Athens)	Maud Evrard
07-08/04/11	EC FP7 SEAS-ERA Atlantic workshop (Paris)	Maud Evrard
11/05/11	Marine Board Communications Panel, Tallinn	Maud Evrard Niall McDonough
19-20/05/2011	European Maritime Day 2011, Gdansk	Niall McDonough
24/05/11	SEAS-ERA Final inventory meeting, Brussels	Maud Evrard Niall McDonough
8/06/2011	Lunch-time Conference on Marine Board Activities at EC DG MARE, Brussels	Niall McDonough
14/06/2011	EU FP7 MARCOM+ Steering Committee Meeting, Den Haag	Niall McDonough Maud Evrard
15/06/2011	EU FP7 MARCOM+ Advisory Board Meeting, Den Haag	Maud Evrard
15-16/06/2011	Marine Board WG MICROCEAN Wrap-up Meeting, Ostend	Niall McDonough Jan-Bart Calewaert
27/06/2011	ESF Review of Expert Boards: Interview with Marine Board Chair and Exec. Sec., Frankfurt	Lars Horn Niall McDonough
28-30/06/2011	ESFRI Symposium, Brest	Kostas Nittis
6/09/2011	EU FP7 SEAS-ERA Atlantic Strategic Agenda preparatory meeting, Brussels	Maud Evrard
7/09/2011	EU FP7 SEAS-ERA 1 st Strategic Forum, Brussels	Niall McDonough Maud Evrard
8/09/2011	EU FP7 MARCOM+ 2 nd Open Forum, Brussels	Niall McDonough Maud Evrard

Date	Event	Speaker(s)
15/09/2011	EU FP7 CLAMER Conference <i>Living with a Warming Ocean</i> , Brussels	Niall McDonough
29/09/2011	Meeting of Chairs and Executive Secretaries of ESF Expert Boards, London	Kostas Nittis Niall McDonough
29-30/09/2011	ESF Governing Council Meeting, London	Kostas Nittis
4/10/2011	6 th EuroGOOS Conference, Sopot	Kostas Nittis
20-21/10/2011	EU FP7 MARINEBIOTECH kick-off, Oslo	Jan-Bart Calewaert
2-3/11/2011	ECORD Council meeting, Granada	Niall McDonough
9/11/2011	MARCOM+ Steering Committee meeting, Copenhagen	Niall McDonough
10/11/2011	EMAR ² RES Steering Committee and Policy Interface Panel meetings, Brussels	Niall McDonough
23-24/11/2011	ESF General Assembly and Conference, Strasbourg	Kostas Nittis
1-3/12/2011	The Ocean 2011 conference <i>Research and Resources Development of Global Ocean in Russia: Present and Future</i> , Moscow	Niall McDonough

Annex VII: Participation in Conference and Meeting Exhibitions in 2011

Date	Event
22/03/11	Marine Board-VLIZ-Westbanks North Sea Symposium on Marine Protected Areas, Leuven
10-11/05/2011	Marine Board Plenary Meeting, Tallinn
26/05/2011	EC Green Week, Brussels
6-7/06/2011	EC Expert Group on Marine Research Infrastructures, Ostend
8/06/2011	Lunch-time Conference on Marine Board Activities at EC DG MARE, Brussels
28-30/06/2011	ESFRI Symposium, Brest
5-8/09/11	CoastGIS Conference, Ostend
7/09/2011	EU FP7 SEAS-ERA 1 st Strategic Forum, Brussels
8/09/2011	EU FP7 MARCOM+ 2 nd Open Forum, Brussels
8/09/2011	OECD Scoping Meeting on Marine Biotechnology, Ostend
8-9/09/11	BioMarine 2011, Nantes
14-15/09/2011	EU FP7 CLAMER Conference 'Living with the Warming Ocean', Brussels and pre-Event
24-28/10/2011	WCRP Conference on Climate Research in Service to Society, Denver, USA
28/11-09/12/11	17 th United Nations Framework Convention on Climate Change (COP 17)
12/10/2011	EP Intergroup on Seas and Costs meeting
13-14/10/11	Autumn Plenary in Madrid
21/11/2011	ESF General Assembly

Annex VIII. Marine Board Member Contributions 2011

Marine Board Member	Country	Contribution 2011
Belgian Science Policy Office, BELSPO	Belgium	12,000
National Fund for Scientific Research, FNRS	Belgium	6,500
Fund for Scientific Research – Flanders, FWO	Belgium	6,500
Institute of Oceanography and Fisheries, IZOR	Croatia	1,500
Cyprus Oceanography Centre	Cyprus	8,000
National Institute for Aquatic Resources (DTU Aqua)*	Denmark	N/A
Estonian Academy of Sciences	Estonia	8,000
Academy of Finland	Finland	13,000
Finnish Environment Institute, SYKE	Finland	6,000
National Centre for Scientific Research, CNRS	France	15,500
French Research Institute for Exploitation of the Sea, IFREMER	France	15,500
Marine Universities of France	France	8,500
German Research Foundation, DFG	Germany	15,500
Association of National Research Centres, HGF	Germany	15,500
Leibniz Institute of Marine Sciences Kiel, IFM-GEOMAR	Germany	15,500
Hellenic Centre for Marine Research, HCMR	Greece	9,000
Irish Marine Institute, MI	Ireland	10,000
National Research Council, CNR	Italy	15,500
National Institute of Oceanography and Experimental Geophysics, OGS	Italy	15,500
National Inter-University Consortium for Marine Sciences, CoNISMa*	Italy	N/A
Royal Netherlands Institute for Sea Research, NIOZ	Netherlands	6,000
Netherlands Organisation for Scientific Research, NWO	Netherlands	10,000
University of Bergen, UiB	Norway	10,000
Research Council of Norway, RCN (+Institute of Marine Research, IMR)	Norway	20,000
Institute of Oceanology of the Polish Academy of Sciences, IO-PAN	Poland	8,000
Science and Technology Foundation, FCT	Portugal	4,000
Centre of Marine and Environmental Research, CIMAR	Portugal	4,000
National Institute for Marine Research and Development “Grigore Antipa”	Romania	7,000
Spanish Institute of Oceanography, IEO	Spain	10,000
Council for Scientific Research, CSIC	Spain	10,000
Swedish Institute for the Marine Environment	Sweden	13,000
Scientific and Technological Research Council of Turkey, TÜB TAK	Turkey	8,000
Natural Environment Research Council, NERC (+National Oceanography Centre)	United Kingdom	31,000
Total		338,500

*Members joining at the Autumn Plenary Meeting are not required to pay the annual contribution for that year.

Annex IX : Full list of Marine Board Publications

Marine Board Position Papers:

- **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 Levrel.
- **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 Gisiner, 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 Gorringe, 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 Da obeita, 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, Karlina 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 Henriët, 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 Pinardi, 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. Vallerger, 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. Vallerger, 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.** Galewaert 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 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:

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Forum rapporteurs: Erlend Moksness, Jacky Wood

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Annex X: Marine Board Secretariat 2011

Executive Scientific Secretary

Dr. Niall McDonough

Administration and Coordination Officer

Ms. Dina Eparkhina

Science Officers

Mr. Aurélien Carbonnière

Mr. Jan-Bart Calewaert

Ms. Maud Evrard

Annex XI: Glossary

CLAMER	FP7 CSA <i>Climate Change Impacts on the Marine Environment: Research Results and Public Perception</i>
CNRS	National Center for Scientific Research (France)
COST	European Cooperation in the Field of Scientific and Technical Research
CSA	Coordination Support Action (EU FP Scheme)
DG MARE	DG Maritime Affairs and Fisheries (European Commission)
DG	Directorate General (European Commission)
EC	European Commission
EMAR²RES	FP7 CSA <i>Cooperation between the Communities of European MARine and MARitime REsearch and Science</i>
EMODNET	European Marine Observation and Data Network
EP	European Parliament
ERA	European Research Area
ERA-NET	European Research Area Network (EC FP scheme)
ESF	European Science Foundation
ESOF	EuroScience Open Forum
EU	European Union
EurOCEAN	European Conference series on Marine Science and Technology
EUROFLEETS	FP7 I3 <i>Towards an Alliance of European Fleets</i>
EuroGOOS	European Global Ocean Observing Systems
ExCom	Marine Board Executive Committee
FP	EU Framework Programme for Research and Technological Development
I3	Integrated Infrastructure Initiative (EU FP scheme)
IP	Integrated Project (EU FP scheme)
MARCOM+	FP7 CSA <i>Towards an Integrated Marine and Maritime Science Community</i>
MARINEBIOTECH	FP7 CSA ERA-NET Preparatory Action in Marine Biotechnology
MarinERA	FP6 ERA-NET Project <i>Facilitating Cooperation between National Marine RTD Programmes in Europe</i>
MBCP	Marine Board Communications Panel
MO	Marine Board Member Organization
RTDI	Research, Technology Development and Innovation
SEAS-ERA	FP7 overarching marine ERA-NET (proposal)
TP	Technology Platform
UK	United Kingdom
VLIZ	Flanders Marine Institute (Belgium)
WG	Working Group (Marine Board Instrument)
WG MICROCEAN	Marine Board Working Group <i>Marine Microbial Diversity and its Role in Ecosystem Functioning and Environmental Change</i>
WG MPAs	Marine Board Working Group <i>Use of Marine Protected Areas for Ecosystem-Based Management</i>
WG OHH	Marine Board Working Group <i>Oceans and Human Health</i>
WG POL	Marine Board Working Group <i>Risk Assessment and Monitoring of Existing and Emerging Chemicals in the European Marine and Coastal Environment</i>

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