

# **EurOCEAN** 2007

**Aberdeen, Scotland  
Friday 22nd June 2007**

## **CONFERENCE REPORT & ABERDEEN DECLARATION**

The EuroOCEAN 2007 Conference was sponsored by the European Commission





## The EuroOCEAN 2007 Conference & The Aberdeen Declaration

# EuroOCEAN 2007

The EuroOCEAN 2007 Conference (Aberdeen, 22nd June 2007) provided a major opportunity for the European marine science and technology community to contribute to the debate on a future maritime policy for the European Union and to formulate a vision – the Aberdeen Declaration – of the role of marine science and technology in response to the Maritime Policy Green Paper.



### EuroOCEAN 2007 Conference Programme Aberdeen, Scotland, Friday 22 June 2007.

#### Welcome and Introduction:

Lars Horn, EuroOCEAN 2007 Organising Committee / Marine Board-ESF

**Opening address: Holistic Science for a holistic European Maritime Policy**

Commissioner Joe Borg, DG Fish and Maritime Affairs

**Galway to Aberdeen via Bremen: A need for a common vision**

Prof. Graham Shimmield, Scottish Association for Marine Science

**Introduction to the Aberdeen Declaration**

Dr. Peter Heffernan, CEO Irish Marine Institute

#### Session 1: Importance and Impact of Marine Science and Technology in Europe

**Session Chair: Prof. Peter Herzig, KDM, Germany.**

**Science Knowledge for Sustainable Development of the Oceans**

Prof. Nadia Pinardi, University of Bologna

**Science for Innovation**

Dr. Martin Scholten, IMARES

**Interfaces between Science, Policy and Society**

Dr. Sybille van den Hove, HERMES

#### Session 2: European Marine Science and Technology in the context of the European Maritime Policy - Challenges

**Session Chair: Prof. Joao Coimbra, CIMAR, Portugal.**

**Enhancing Partnership**

Prof. Ed Hill, National Oceanography Centre, Southampton, UK.

**Challenges Faced by New EU Members**

Dr. Jennifer Cassingena Harper, Malta Council for Science and Technology

**Priorities for Marine Research and Policy in the Mediterranean Sea, a Multilateral View**

Dr. Frederic Briand, CIESM

**Linking the Marine and Maritime Worlds**

Mr. Wouter Dirks, Waterborne Technology Platform

**Metocean projects in the oil and gas industry**

Mr. Chris Shaw, OGP

**Marine Data - Capture, Collection and Management**

Dr. Peter Ryder, EuroGOOS

**Infrastructure Aspects**

Dr. Maurice Héral, Ifremer

#### Session 3: Adoption of the Aberdeen Declaration

**Session Chair: Dr. Peter Heffernan, Marine Institute, Ireland.**

Presentation and Approval of the Aberdeen Declaration

## INTRODUCTION

The EurOCEAN 2007 Conference, held in Aberdeen on the 22nd June 2007, provided a major opportunity for the European marine science and technology community to come together to contribute to the debate on a future maritime policy for the European Union as proposed in June 2006 by the European Commission (Maritime Green Paper, 2006).

The **EurOCEAN 2007 Conference** proved to be a worthy successor to the MAST DAYS / EurOCEAN Conference Series which were held in Brussels (1994), Sorrento (1996), Lisbon (1998), Hamburg (2000) and Galway (2004).

The main output of the EurOCEAN 2007 Conference, the **Aberdeen 2007 Declaration**:

- Is based on a draft prepared in advance of the EurOCEAN Conference by the Conference Organising Committee, representing a number of the leading European and Regional Marine Science and Technology Consortia, Networks and Institutions, including industry representative groups (see page 17);
- Reflects the common themes emerging from the many written submissions to the EU Maritime Policy Green Paper Consultative Process, in particular those made by the various groups participating in the organisation of EurOCEAN 2007;
- Follows in the tradition of the **Galway Declaration** (EurOCEAN 2004) which had a major influence on the EU FP7 Programme and the EU Maritime Policy Green Paper;
- Draws on the recommendations of the **Seminar on Marine Sciences and Technologies in FP7**<sup>1</sup> held in Brussels on 16th January 2007;
- Draws on the recommendations of the **Germany EU Presidency Conference: Towards a Future Maritime Policy for the Union** (2nd - 4th May 2007)<sup>2</sup>.

In this way, the **EurOCEAN 2007 Conference** and resultant **Aberdeen Declaration** received input and endorsement from a multitude of European Marine and Maritime Research Organisations, Networks and individual scientists from across Europe.

This **EurOCEAN 2007 Conference Report** summarises the main points made by Conference Speakers in their presentations. The Aberdeen Declaration is included as an Annex.



## OPENING SESSION

**Mr. Lars Horn** (Chair of the EurOCEAN 2007 Organising Committee and Chairman of the Marine Board-ESF) opened the Conference by welcoming participants and highlighting the importance of the unique opportunity provided by the Conference to input directly to the development of the European Union's Policy on the Seas and Oceans.

*"Only excellence in marine research and technology will allow us to deliver the goal of a thriving maritime economy and the realisation of the full potential of sea-based activities in an environmentally sustainable manner".*

EU Commissioner Joe Borg, Aberdeen (2007)

The guest speaker, **European Commissioner Joe Borg**, responsible for Fisheries and Maritime Affairs, reminded the Conference that it is now two years since the European Commission had called for an all-embracing European Union Maritime Policy, supported by excellence in marine scientific research and technology.

The Maritime Policy Green Paper addressed the need for an overarching European Marine and Maritime Research Strategy to further deepen our knowledge and promote new

1. See [http://ec.europa.eu/research/conferences/index\\_en.cfm](http://ec.europa.eu/research/conferences/index_en.cfm)

2. **From Bremen to Aberdeen (June 2007)**. A 6 page report prepared for EurOCEAN 2007.

technologies. The contributions to the consultation process have confirmed the need for a strategy to identify and plan for the tasks ahead, so that further actions can be undertaken within a coherent policy framework. Key issues emerging in the consultation process include:

1. The need for cross-thematic integration of marine and maritime research;
2. The need for strengthened cooperation and synergy between Member States' research efforts;
3. The importance of a detailed identification of marine research infrastructure needs and, in particular, a closer integration of marine data;
4. The need for more integrated cooperation and networking in the scientific community to provide a better articulation between research, policy-making, industry and society in general.



To address these issues the European Commission, the Member States and Associated States and the marine and maritime science and technology community must work across traditional sectoral boundaries, maximise the synergies between EU Funding Programmes (e.g. 7th Framework Programme) and Member State R&D Programmes and recognise and support the importance of long-term data series to ensure adequate baselines to facilitate assessment, modelling and forecasting. Initiatives such as the proposed **European Marine Observation and Data Network (EMODN)** and the **EU Atlas of the Seas** will provide significant contributions to addressing these needs. “And”, Commissioner Borg noted, “we must develop better synergies

*between science and policy and between science and industry”.*

The EU has played a major role in supporting marine and maritime research during the past 20 years. Considerable progress has been made in developing the marine component of the European Research Area (ERA). The marine scientific community looks more competitive and better organised in delivering knowledge to stakeholders and policy makers. Yet, we need to take a qualitative step forward in strengthening the EU marine research area and linking it to the maritime research and technology community. A strong EU strategy for marine research will give us the basis to take this step and deliver the science and research foundation for the future EU maritime policy. “*Only excellence in marine research and technology*”, stated Commissioner Borg, “*would allow us to deliver the goal of a thriving maritime economy and the realisation of the full potential of sea-based activities in an environmentally sustainable manner*”.

**Prof. Graham Shimmiel** (Scottish Association for Marine Science) welcomed participants to Aberdeen. With a presentation entitled “**From Galway to Aberdeen via Bremen: A Need for a Common Vision**” he made the link between the EurOCEAN 2004 Conference (Galway Declaration) and the Aberdeen EurOCEAN 2007 Conference and traced this evolution via the May 2007 German EU Presidency Conference in Bremen.

2007 would be remembered, he reflected, as the year when change was initiated. It was the window of opportunity to address the legacy of the past, the opportunity to capitalise on a new and growing awareness within the scientific community and associated business opportunities, an opportunity to build on the Galway Declaration and the output of the Bremen Conference. It was the opportunity, Prof. Shimmiel added “*to secure and strengthen the pride and value of a “maritime” Europe in the world economy and provide the real social benefits of lasting stewardship of our marine environment*”.

*“Today is our opportunity to show how science can serve Europe and serve the vision of an all embracing maritime policy”.*

Dr. Peter Heffernan, Aberdeen (2007)

**Dr. Peter Heffernan** (Marine Institute, Ireland) introduced the concept of the Aberdeen Declaration, draft copies of which were included in participant information packs. “*Today*” he said

*“is a unique opportunity. Do not underestimate the importance of the Declaration we will deliver this afternoon. This is a bold and visionary effort at EU level binding Member States in a common approach to the oceans”.*

In reviewing the draft Declaration, Dr. Heffernan asked participants to focus on how the areas they represent are included, rather than on whether these areas are defined in sufficient detail. He emphasised that a great deal of effort had been expended in preparing this draft. The EurOCEAN Organising Committee had consulted within its constituent organisations and networks representing a broad consensus of many hundreds of marine science and technology practitioners. He reminded the participants that *“today is our opportunity to show how science can serve Europe and serve the vision of an all embracing maritime policy aimed at developing a dynamic maritime economy in harmony with the marine environment, supported by sound marine science and technology”.*

## **SESSION I: IMPORTANCE AND IMPACT OF MARINE SCIENCE AND TECHNOLOGY IN EUROPE**

### **Session Chair: Prof. Peter Herzig (KDM)**

**Prof. Peter Herzig** (German Marine Research Consortium - KDM) in opening the 1st Session emphasised the need for consistency and continuity between the key messages delivered in Bremen and in those delivered in the Aberdeen Declaration. The aim of Session I, he explained, was to establish the links between science and knowledge generation, science and innovation in industry and science and policy.

*“There is no applied science if there is no science to apply”*

Bernardo Houssay, Nobel Laureate in Medicine (1947)

**Science and New Knowledge: Prof. Nadia Pinardi** (University of Bologna, Italy) focused on the importance of scientific research to better understand the oceans and as a tool to contribute to their sustainable use. Taking such examples as sea surface temperature, sea level rise and major changes in stocks of cod and anchovy, she emphasised the need for original research to identify how and why observed changes have occurred and are occurring.

Prof. Pinardi noted the need to embrace and develop new scientific methods including:

- New satellite missions to measure the water cycle and water properties on the earth (e.g. ESA Earth Explorer Mission Programme);
- New integrated acoustical and bio-optical sensors and methods;
- Merging modern direct observations with proxy data sets;
- Multivariate data assimilation tools and adaptive sampling;
- Advanced numerical modelling for hindcast, nowcast, forecast and scenario simulations;
- Montecarlo methods for uncertainty estimation.

Prof. Pinardi also emphasised the need for regular and systematic reference information (e.g. processed data, elaborated products) on the state of the oceans and regional seas at the resolution required by intermediate users and downstream service providers, and of known quality and accuracy.

In conclusion, Prof. Pinardi noted that an integrated European Marine and Maritime Science, Research, Technology and Innovation Strategy is needed to maintain European competitiveness. The Strategy should build on existing partnerships and be initiated in collaboration between the European Commission and the Member States.

**Science and Innovation: Dr. Martin Scholten** (Institute for Marine Resources & Ecosystem Studies, The Netherlands) argued that *“scientific support to the productive sectors”*, as well as *“scientific support to policies”*, will be of particular relevance within the context of the maritime policy. He noted the interactions between the marine environment and socio-economic demands and the need to reconcile the maritime economy with nature, supporting a shift from *“working in nature”* to *“working with nature”*, for example, through the Ecosystem Approach to resource management.

New policies, Dr. Scholten argued, are an incentive for innovation, acting as a trigger for innovation in the various maritime productive sectors (e.g. fisheries, aquaculture, offshore energy, clean ship concept and blue biotechnologies). He noted the need for complementary partnerships between, for example, fisheries research, applied oceanography, technology

development and the socio-economic milieu in which all are played out.

In conclusion, Dr. Scholten noted that the Ecosystem Approach will stimulate innovations in the maritime sector; that applied scientific support to the Maritime Policy is crucial and that new partnerships between marine sciences, maritime sectors and public bodies are needed.

*“Ultimately, European marine science and technology leadership will be judged on the quality of the science itself and also on ways in which it is interfaced with policy and society”.*

Dr. Sybille van den Hove, Aberdeen (2007)

**Science, Policy and Society: Dr. Sybille van den Hove** (Autonomous University of Barcelona, Spain) addressed the issue of Science and Society, noting that a key requirement to successful holistic European maritime governance is the development and strengthening of bridges between science, policy, business, civil society and the general public. *“Ultimately”* she said *“European marine science and technology leadership will be judged on the quality of the science itself and also on ways in which it is interfaced with policy and society”.*



Since the needs of policy-makers do not always correspond with the scientific processes, the challenge is, therefore, to design and implement effective interfaces between marine science and maritime policy. A key element in this context is to build an interdisciplinary approach, bringing together natural and social sciences. In order for the interfaces to work properly, they must: be incorporated into the Maritime Policy from the start; be linked to existing interfaces in the environmental governance domain; bring in all stakeholders; and finally they must contribute to the setting of research priorities.

Dr. van den Hove stressed the need to improve the science-society interface in order to:

- Raise public awareness and sensitise society on the contribution of the seas to the economy, quality of life and environment;
- Raise willingness to act and support policy among the stakeholders and the public;
- Ensure rapid uptake of research results by the private sector;
- Ensure sustainability through dialogue between science and sectors related to the oceans.

There are two key elements to improving this science-society interface: in the first instance, we must stimulate vocations in all sea related activities and secondly, we must support effective outreach involving multiple stakeholders (institutes, schools, NGOs, the media and the private sector).

In conclusion, Dr. van den Hove noted that an holistic European Maritime Policy requires the development of effective interfaces between science, policy and society. The Maritime Policy can support these by:

- Ensuring that interfaces are integrated as key elements of the Maritime Policy design;
- Providing the resources to support an array of well-functioning and dynamic interface processes;
- Enabling all stakeholders to contribute to the interactions between science, policy and society (the European research community, policy makers at EU, international, national and local levels, NGOs, the private sector, educators, the media and the public);
- Reinforcing links with, and contributing to the strengthening of, international-level interfaces.

## SESSION 2:

### EUROPEAN MARINE SCIENCE AND TECHNOLOGY IN THE CONTEXT OF THE EUROPEAN MARITIME POLICY – CHALLENGES

Session Chair: Prof. João Coimbra, CIMAR, Portugal.



**Enhancing Partnership:** Prof. Ed Hill (National Oceanography Centre, Southampton [NOCS], UK) identified the key drivers for greater scientific cooperation and partnership as including: policy issues (e.g. Lisbon Agenda, Gothenburg Agenda); large scale science – solutions oriented science; sustained observing systems; research infrastructures (e.g. ships, platforms, high performance computing, etc); skills (having the right people), and international competitiveness.

He noted the recent trend in marine science to “self organisation”, citing the examples of IPCC, IOC, ICES, POGO and the Marine Board-ESF. There are also many examples of so-called Big Science such as the International Ocean Drilling Programme (IODP), EU Framework Programmes and ERA-NETs. There are sustained observations such as IOC/WMO, GEOS, GMES, and EuroGOOS, and progress is being made on sharing research infrastructure with initiatives such as the ship barter scheme and ESFRI. Skills are being addressed through Marie Curie fellowships, Networks of Excellence, European Research Council and the Bologna Process. This self organisation was visible at the global (e.g. POGO), European (e.g. Marine Board-ESF), Regional (ICES, CIESM), national (e.g. KDM in Germany; the new Oceans 2025 Strategic Research Programme in the UK) and local (e.g. the proposed Scottish Marine Partnership) levels.

An holistic European Maritime Policy sets the vision and will need a supportive and coherent Marine and Maritime Science, Technology and Innovation Strategy. Prof. Hill stressed the

importance of the structures, networks and processes to support the preparation and implementation of such a Strategy. “What we need”, he said “is not a single voice – but many voices brought together in a holistic way that can be heard”.

**Challenges Faced by New EU Member States:** Dr. Jennifer Cassingena Harper (Malta Council for Science and Technology) argued that a supportive Marine Science, Research, Technology and Innovation Strategy must involve the new Member States, especially in the context of capacity building. New Members, especially those with a maritime tradition, offer a strong potential to contribute to the Green Paper’s objectives of exploiting emerging economic opportunities and EU lead markets.



The challenges in developing coherent policies are even more complex and daunting for new Member States, who are often in *catch-up mode* and will require realistic targets and appropriate supports. The way forward will entail the creative design of the marine component of the European Research Area (ERA) through the use of foresight exercises to harness their full potential. “It is imperative”, emphasised Dr. Harper, “that future EU initiatives take due account of the dependence of small island jurisdictions on marine activities and of their vulnerabilities”.

**Priorities for Marine Research and Policy in the Mediterranean:** Dr. Frederic Briand (The Mediterranean Science Commission, CIESM) described the Mediterranean as a unique sea presenting unique opportunities for marine research and development. The Mediterranean, he pointed out, is shared by seven EU Member States and 13 non-EU coastal states, resulting in considerable constraints on its maritime governance.

The Mediterranean is a miniature ocean with accelerated responses to climatic forcing, a complex structure and seabed, unprecedented changes in biodiversity, rapid ecosystem shifts and accessible, diverse and vulnerable yet poorly known deep sea ecosystems. Many new species have been introduced to the Mediterranean through ballast water, aquaculture and via

the Suez Canal and a number of these are having significant impacts. The deeper parts of the Mediterranean are one of the last unexplored frontiers with features such as mud volcanoes, hyper-saline basins, sea mounts and deep sea canyons. With these significant attributes, CIESM believes that blue biotechnology should be a major focus for EU research and innovation. While numerous exciting products and processes based on Mediterranean species are currently under development or clinical trial, and despite 600 patents already granted, covering therapeutic treatments and bio-degradable products, Europe is still lagging behind Japan and the USA in this domain.



The EU Maritime Policy Green Paper provides a significant opportunity to develop tools facilitating multi-lateral, cross-sectoral co-operation between EU and non-EU neighbouring countries. In light of this, the Mediterranean can and will provide a major test bed for research, innovation and maritime governance.



**Linking the Marine and Maritime Worlds: Mr. Wouter Dirks** (European Waterborne Technology Platform) described how the Waterborne Technology Platform facilitates members from a broad range of activity areas (e.g. dredging, shipping, leisure and research) to engage, through their respective European representative agencies, in the

definition of a vision for the future of the maritime industry and the preparation of a strategic research agenda needed to achieve the goals as defined in the Waterborne Technology Platform's publication: Vision 2020.

Mr. Dirks profiled the European maritime sector and illustrated

its importance both within Europe and globally. He noted, for example, that 40% of the world's merchant fleet is beneficially controlled by European companies and 25% is under the European flag. The European oil and gas service industry is a world technology leader, exporting 70% of their products, and the top three companies are European-based. European companies also dominate the world dredger and dredging technology market, with almost 100% of dredging technology and know-how being European. The four major waterborne sectors were identified as:

1. Maritime technology and ship building;
2. Maritime transport;
3. Marine infrastructures, services and dredging;
4. Offshore industry and energy services.

These sectors were each examined in light of the three pillars identified in Vision 2020:

1. Safe, sustainable and efficient operations;
2. A competitive maritime industry;
3. Managing growing trade volumes and changing patterns.

This was done to determine the research needs or gaps which, through technology push, socio-economic need, and market pull, would allow the vision to be realised. Potential synergies between marine and maritime research were illustrated using the example of marine infrastructures and dredging. In conclusion, Mr. Dirks highlighted the need for better integration between the marine and maritime worlds. "Marine research will need" he said "to respond to the needs of the maritime sector. Better cooperation between the two is essential to realise interdisciplinarity and avoid fragmented research".

**Metoccean Projects in the Oil and Gas Industry: Mr. Christopher Shaw** (Association of International Oil and Gas Producers, OGP) described the work of OGP. He noted that the OGP encourages the better understanding of the value of applied oceanography and meteorology both within and outside the industry. He described a range of ongoing metoccean projects involving OGP members, using **SIMORC** (System of Industry and Metoccean data for the Offshore and Research Communities) and **NESS** (North European Storm Study) as examples. These projects contribute to the development of technology to deal with the ongoing challenges

faced by the oil and gas industry. He outlined how the industry's current projects are addressing key areas of need including economic development, environmental management, ocean and coastal governance, climate change and HSSE (Health, Safety, Sustainability and Environment).

Mr. Shaw concluded that the oil and gas sector can both benefit from, and contribute to, the proposals and priorities identified under the Aberdeen Declaration. For both safety and economic reasons, the exploration industry has a continuing interest in improving knowledge of the physical environment in which it operates and will continue to define and invest in focussed projects that improve knowledge (e.g. data, resources, tools).

*"We must place Europe's maritime research sector firmly at the heart of maritime policy".*

Jean-Yves Perrot, President, Ifremer (Bremen, 2007)

#### **Marine Data – Capture, Collection and Management:**

**Dr. Peter Ryder** (EuroGOOS) outlined the importance of marine data capture, collection and management. EuroGOOS is an association of 35 agencies from 17 countries involved in operational oceanography. Dr. Ryder noted that evidence based policy-making demands knowledge and data which is then transformed through research and operational information services into numerate descriptions of the economic, social and environmental drivers, the temporal and spatial characteristics of the domain and their interdependencies. Data are also needed to:

- Deliver effective, safe, efficient, profitable and sustainable operations;
- Establish relationships between pressures and impacts in the context of a varying state, so that policy responses are well designed and implemented;
- Provide indicators of poverty, equity, health, education, crime and demographics.

Dr. Ryder identified three key areas of concern that need to be addressed at the European level and translated into policy:

- Substantial under-sampling of the seafloor and subsea coastal/shelf areas;
- Significant under-funding and lack of integration of *in situ* networks;
- Lack of understanding of and methods for monitoring ecosystems.

Other impediments to be overcome include: data policies that inhibit data exchange; a lack of sustainable, well designed infrastructure; and a lack of interoperability. The establishment of the proposed European Marine Observation and Data Network (EMODN) and the delivery of the GMES Marine Core Service initiative will go a long way towards addressing these deficiencies.

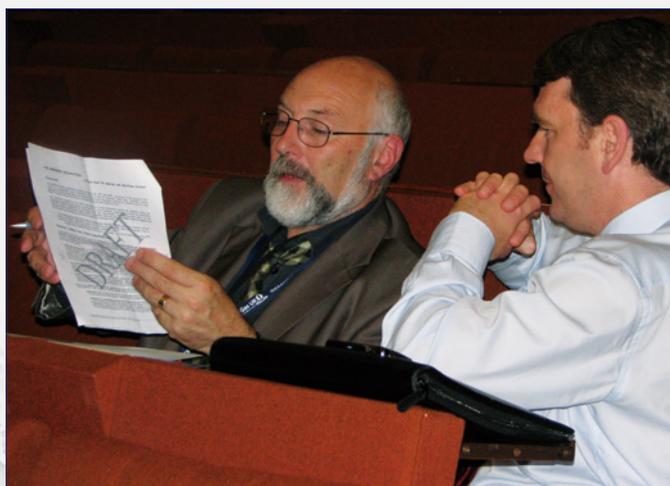
In conclusion, Dr. Ryder noted that sustainable, reliable and ready access to data was required for evidence-based Maritime Policy making and that greater certainty and growth on the supply side will encourage and sustain investment in innovative solutions in data capture, collection and information service delivery, with attendant business opportunities.



**Infrastructures:** **Dr. Maurice Héral** (Ifremer, France) noted that specialised marine research infrastructures share many common characteristics: they are costly to maintain and to operate; they are mainly operated in support of national priorities; cooperation among infrastructure holders is still in its infancy; many infrastructures are old (more than 50% are 20 years old or more); specialised infrastructure costs can represent up to 40% to 50% of research budgets and building new infrastructure is increasingly more complex and more demanding, particularly in the context of multi-disciplinarity.

However, good marine science demands good infrastructures. Research vessels are necessary for work at sea, while sustained monitoring of the marine environment is essential to collect useful data. New databases, improved marine and coastal monitoring and observation facilities, land-based facilities for biology and ecology, for high level computing and for engineering studies are all required. All of these issues need to be addressed in an integrated European Marine and Maritime Science, Research, Technology and Innovation Strategy.

Dr. Héral concluded by emphasising the need to demonstrate to both policy makers and the marine science and technology community the benefits of cooperation and partnership in the development and use of marine research infrastructures. It is important to demonstrate how Member States who collaborate in this area can add significant value to their national research programmes. The sustainability, harmonisation, coordination and long-term viability of all marine research infrastructures needs to be ensured through long-term mechanisms that go beyond traditional EU Research and Infrastructure Funding Programmes.



### Discussion Sessions

Two general Discussion Sessions were held during the Conference. The discussion after Session I was chaired by **Dr. Jan Mees** (Flanders Marine Institute –VLIZ, Belgium). Session 2 was chaired by **Dr. Kostas Nittis**, Hellenic Centre for Marine Research, Greece / EuroGOOS.

These discussion sessions, with the able assistance of the Animators (Chairpersons), involved a lively exchange of views between the Conference Participants and Guest Speakers. The views expressed and issues raised helped to determine and inform the final text of the Aberdeen Declaration, a draft of which was included in the Conference Information Pack.

During the final (extended) coffee-break, a drafting group (Dr. Antoine Dosdat, Mr. Geoffrey O’Sullivan and Mrs. Jacky Wood) reviewed and assessed all comments and proposed amendments to the Draft Declaration. The drafting team then prepared a final draft with proposed track-changes clearly marked for presentation to the Conference.

## SESSION 3

### ADOPTION OF THE ABERDEEN DECLARATION

**Chair: Dr. Peter Heffernan, Marine Institute, Ireland.**

**Presentation of the Aberdeen Declaration:** The Chair, **Dr. Peter Heffernan**, expressed thanks to participants for their input and to the drafting team who had worked through the coffee break to incorporate suggestions from the floor and produce the final version of the Declaration. He then invited **Mr. Geoffrey O’Sullivan**, on behalf of the drafting group, to explain how the comments and changes proposed to the draft Declaration during the Conference had been included in the final Declaration.

**Adoption of the Aberdeen Declaration:** The Chair, Dr. Heffernan, then asked “Do we have a Declaration?” The answer was a resounding “Yes” from the audience.

In thanking those present, Dr. Heffernan said that we can take home the prospect of a new European Marine and Maritime Science, Research, Technology and Innovation Strategy. “You have played your part. We can now challenge the Commission and our respective governments to live up to this Declaration. The window is now: the window to go from a Green Paper to a White Paper and ultimately to the adoption of an holistic European Maritime Policy. Let us challenge the Portuguese EU Presidency to bring this initiative forward”.



**Closing the EuroOCEAN 2007 Conference:** In officially closing the Conference, **Mr. Lars Horn** noted the achievement made. “We have shown that we can self-organise. This effort has brought us closer together than ever and closer to realising a Marine Policy for Europe”.

“The oceans and seas bound Europe, but they also bind it together.”

José Manuel Barroso, EU President

## List of Acronyms:

<b>CIESM</b>	Conseil International pour l'Exploration Scientifique de la Méditerranée (The Mediterranean Science Commission).
<b>ESFRI</b>	European Strategy Forum on Research Infrastructures.
<b>EuroGOOS</b>	European Global Ocean Observing Systems.
<b>GEOSS</b>	Global Earth Observations System of Systems.
<b>GMES</b>	Global Monitoring for Environment and Security.
<b>ICES</b>	International Council for the Exploration of the Sea.
<b>IOC</b>	Intergovernmental Oceanographic Commission.
<b>IPCC</b>	Intergovernmental Panel on Climate Change.
<b>KDM</b>	Konsortium Deutsche Meeresforschung (German Consortium for Marine Research).
<b>POGO</b>	Partnership for Observation of the Global Oceans.
<b>WMO</b>	World Meteorological Organisation.

## Conference Rapporteurs:

- Charlotte Jagot, Représentante de l'IFREMER au CLORA, Brussels, Belgium.
- Jacky Wood, National Oceanography Centre, Southampton, UK.
- Niall McDonough, Marine Institute, Ireland.
- Stephan Hall, National Oceanography Centre, Southampton, UK.

## Report Editors

- Geoffrey O'Sullivan, Marine Institute, Ireland.
- Kathrine Angell-Hansen, European Commission.
- Niamh Connolly, Marine Board – ESF.

## Reports Included in Participants EurOCEAN 2007 Information Packs

- A draft text of the **proposed Aberdeen Declaration**.
- **From Bremen to Aberdeen:** A Report of the Bremen Conference prepared for EurOCEAN 2007 (June 2007).
- **Seminar on Marine Science and Technology in FP7** (2007) Report.
- **The Galway Declaration** (2004).

## Photographs Courtesy of:

- European Commission.
- Maud Evrard, Marine Board-ESF.
- Research Council of Norway.

# The ABERDEEN DECLARATION

## A New Deal for Marine and Maritime Science



### The European Marine and Maritime Science and Technology Community:

Recognising the great importance of the oceans and seas for Europe's economic, social and environmental development, and in particular the major challenges posed by global environmental change and the significant opportunities offered by the global market economy:

- Welcomes and **supports the European Commission's proposal for an all embracing European Maritime Policy** furthering the knowledge economy (Lisbon 2000), and laying the foundation for a marine and maritime component of the European Research Area (ERA).
- Is reassured that the proposed European Maritime Policy is **based on the principle of sustainable development** (Gothenburg 2001), and considers that the Thematic Strategy for the Marine Environment, as the environmental pillar of the maritime policy, should include a clear definition of regional targets and indicators that will deliver Good Environmental Status based on the best scientific understanding.

**Calls for urgent action** by the European Commission and the Member States to **further develop and enhance a partnership with the appropriate stakeholders** to:

1. **Initiate in 2008** a comprehensive and **integrated European Marine and Maritime Science, Research, Technology and Innovation Strategy**.
2. **Establish an adequately resourced and sustained process** to oversee the implementation and delivery of this Strategy within an holistic European Maritime Policy.
3. **Initiate and support the necessary funding mechanisms**, specialised infrastructures, data collection and information management and capacity building essential to manage our on-going relationship with the oceans and seas.

### The Research Strategy must enable:

- Foresight activities to identify new and emerging scientific challenges and opportunities.
- Cross-sectoral, multinational and interdisciplinary research partnerships.
- Co-operation between research, industry and other stakeholders to enhance knowledge and technology transfer and innovation.
- Development of scientific and technology capacity to strengthen the knowledge economy.
- Shared use, planning and investment of critical infrastructure on a Europe-wide basis.

**Rationale:** The above action will support the objectives of the proposed European Maritime Policy, **delivering significant added-value** in key areas:

- **Economic Development:** to increase Europe's share of the estimated €4,360 billion global maritime market economy through the development and up-take of innovative marine and environmental technologies.
- **Environmental Management:** to provide the knowledge and tools needed to implement European Union Directives and Regulations, International Conventions and Regional / National / Local Action Plans.
- **Ocean and Coastal Governance:** to enable the application of the principles of marine spatial planning and the ecosystem approach to resource management within the European Union with neighbouring states and globally to support effective governance of the marine and maritime environment.

In this context, **marine science will contribute significantly** to Europe's response to one of the greatest challenges currently facing mankind – that of **Global Climate Change**. An appropriate response to Global Climate Change can only be achieved through a partnership focused on:

- **Mitigation:** developing efficient **renewable ocean energy systems**, reducing CO<sub>2</sub>, improving energy security and providing new business opportunities.
- **Adaptation: mobilising existing and establishing new ocean observatory and data collection systems** to better understand the pace and impact of climate change on the oceans and impacts on the wider earth system. This knowledge will improve prediction and scenario modelling and the **development of appropriate adaptive strategies** at European, regional, national and local levels to offset and cope with negative socio-economic impacts.

# The ABERDEEN DECLARATION

## *A New Deal for Marine and Maritime Science*

### BACKGROUND

The EurOCEAN 2007 Conference (Aberdeen, Scotland, UK: 22nd June 2007), occurring as it did during the final period of a commendable public consultation process on the European Maritime Policy Green Paper, provided a unique opportunity for the European Marine and Maritime Science and Technology Community to respond to the Green Paper **“Towards a Future Maritime Policy for the Union: A European Vision for the Oceans and Seas”**.

The Conference, attended by circa 200 representatives of the European Marine and Maritime Science and Technology Community, policy makers, representatives of Inter-Governmental Organisations and Non-Government Organisations (NGOs) and other key stakeholders from 16 European states, represented the culmination of an open and dynamic consultation process which has seen interested stakeholders across Europe coming together to formulate views and propose strategic initiatives regarding the role of science and technology in achieving the goals of the Maritime Policy.

*“An all embracing maritime policy aimed at developing a dynamic maritime economy in harmony with the marine environment, supported by sound marine science and technology, which allows human beings to continue to reap the rich harvest from the oceans in a sustainable manner”.*

Towards a future Maritime Policy for the Union: A European Vision for the Seas and Oceans (2006)

## RATIONALE: ADDING VALUE - SCIENCE SUPPORTING POLICY

At the political and ocean governance level, the implementation of the **European Marine and Maritime Science, Research, Technology and Innovation Strategy** will, we believe, contribute significantly by adding value to policy development and implementation by providing the knowledge needed to aid evidence-based inter-linked policy in key areas such as:

- **Economic Development:** to increase Europe's share of the estimated €4,360 billion global maritime market economy through the development and up-take of innovative marine and environmental technologies (including eco-technologies) supporting, for example, marine biotechnology, new and renewable ocean energy systems, novel maritime and transportation approaches, innovative ocean observation systems and associated technologies, marine leisure and tourism as well as the substantial markets associated with the sustainable use of biological resources, including seafood production.
- **Environmental Management:** to better understand natural marine hazards, to measure and mitigate human impacts on the marine and coastal environment, to provide appropriate indicators of the quality and status of the marine environment and provide the knowledge and tools needed to implement the relevant European Union Directives, International Conventions and Regional / National / Local Action Plans, and deal with uncertainty.
- **Ocean and Coastal Governance:** to enable the application of the principles of marine spatial planning, incorporating Integrated Coastal Zone Management, risk assessment, and a precautionary and ecosystem approach to resource management within the European Union and with neighbouring states (for example in the Mediterranean and Black Sea basins) and globally to support effective governance of the marine and maritime environment.

In this context, **marine science will also contribute significantly** to Europe's response to one of the greatest challenges currently facing mankind – that of **Global Climate Change**. An appropriate response to Global Climate Change can only be achieved through a partnership focused on:

- **Mitigation:** developing efficient renewable ocean energy systems which in addition to reducing CO<sub>2</sub> and improving energy security, represent new business opportunities.
- **Adaptation by mobilising existing and establishing new ocean observatory and data collection systems** to better understand the pace and impact of climate change on the oceans (e.g. sea-level rise, biodiversity and ecosystem services, biogeographic species shifts, ocean acidification) and the impacts on the wider earth system. This knowledge will enable better prediction and scenario modelling and the **development of appropriate adaptive strategies** and relevant innovative interventions at European regional, national and local levels to offset and cope with negative socio-economic impacts.

## A EUROPEAN MARINE AND MARITIME SCIENCE, RESEARCH, TECHNOLOGY AND INNOVATION STRATEGY

An integrated Maritime Policy needs a comprehensive and supportive Marine and Maritime Science, Research, Technology and Innovation Strategy. The challenge for the European Commission, the Member States and the European Marine and Maritime Science and Technology Community is to support the preparation of this comprehensive and integrated Research Strategy which will identify short- and long-term priorities and incorporate the following components:

- Identify and prioritise the **scientific challenges and opportunities**, in terms of both **basic and applied research** including a **multi-disciplinary and inter-disciplinary approach**, and embracing **engineering, legal and social and economic sciences**, to support a dynamic maritime economy. These priorities should inform both Community (e.g. FP7) and Member State Marine Research Funding Programmes, and be the basis for joint EU-Member State Programmes (e.g. ERA-NET+, Article 169 schemes).
- Support the development of **integrated cross-Directorate initiatives linking sectoral policies** (fisheries and aquaculture, renewable energy, transport, space, etc.) **research and enterprise policies and the environment** to support an holistic and coherent approach when addressing marine and maritime issues on the global, regional, national and local scales.
- Provide a framework, building, for example, on ERA-NETs, Technology Platforms and other European Union instruments, to **further Community and Member State funding and co-operation** in support of cross-sectoral and multinational research projects and partnerships to address key challenges at global, regional, national and local scales.
- Identify and establish appropriate knowledge and technology exchange mechanisms to **strengthen the links between research and industry** turning knowledge (the product of research) into value added products and services and creating income and jobs. It must **foster knowledge and technology transfer** and the development of an in-house research and innovation capability in indigenous European maritime industries through the establishment and resourcing of appropriate support mechanisms.
- Include a **Marine and Maritime Foresight** mechanism to regularly review new developments in emerging science and technology, their implications and the opportunities offered, and to identify the major drivers and lead markets.
- Actively foster **relationships with coastal states** and in particular with neighbouring states with whom Europe shares regional seas, e.g. the Black Sea and the Mediterranean Sea.
- Formulate a **policy framework** for active **engagement of European scientists in the global context**.
- **Identify the specialised pan-European research infrastructures** (e.g. specialised research vessels, sub sea technologies, satellite and in-situ ocean observing systems, sustained monitoring and data collection facilities, databases and information portals, high performance computing, modelling and land based facilities) required to meet identified challenges and opportunities and seek to **maximise the shared use and efficiency of Europe's research infrastructures**, including those proposed under the current European Strategy Forum on Research Infrastructures (ESFRI) Roadmap and Integrated Infrastructure Initiatives (I3).
- **Promote human capacity building**, and the related issues of attractive research careers and researcher mobility, to ensure that appropriate highly-skilled researchers and support personnel are available to underpin economic and environmental developments in the marine and maritime sector.
- Address the concerns of young researchers and support the inclusion of marine modules in the educational system at all levels, including life-long learning.
- Support the **delivery of effective governance** of the marine environment, engaging scientists, policy makers and the public to enable shared understanding and informed decision-making based on sound scientific knowledge.

## THE NEXT STEPS

### Preparing the Research Strategy

1. The preparation of the European Marine and Maritime Science, Research, Technology and Innovation Strategy will **require a consultative process to bring the key stakeholders together to develop the Strategy.**

### Implementing the Research Strategy

2. Implementation and delivery of the Research Strategy will require an **adequately resourced and permanent mechanism.** Whether this should be a Secretariat, a Network of Networks or some other structure is a matter for further debate and analysis and will depend on the scope and focus of the Strategy agreed. What it must do, however, is embrace diversity, reduce fragmentation and build on the achievements of the various existing sectoral and regional marine and maritime research and technology organisations and networks.

**Irrespective of the detail of the resultant Research Strategy, the EuroOCEAN 2007 Conference recognises a requirement for essential actions to assist the creation of the marine and maritime component of the ERA.**

These include:

3. The implementation of the recommendations from the **Seminar on Marine Sciences and Technologies in FP7<sup>1</sup>** (Brussels, 16th January 2007) on the establishment of an appropriate implementation and monitoring mechanism to fully realise the enhanced status of marine science and technology as a priority cross-cutting theme in the EU's 7th Framework Programme (2007 – 2013).
4. Advancing cooperation between the Research and Technology Programmes of the European Union and the Member States, particularly within the context of the ERA-NET Scheme.
5. The establishment and resourcing of a **European Marine Observation and Data Network (EMODN)<sup>2</sup>** is essential to managing our on-going relationship with the oceans and seas. This action would see the establishment of permanent, sustained monitoring and observation structures, networks and the underpinning data provision, curation, information management and dissemination needed to support good ocean governance (including risk assessment, modelling and prediction), good science, a better understanding of ocean dynamics (including climate change and geodynamics), improved resource utilisation and the protection of the marine environment. Such data collection and management infrastructures and regimes must be harmonised and their long-term viability (funding) ensured by the European Commission and the Member States.
6. The preparation of a 4-D digital **European Atlas of the Seas**, which we see as a highly desirable, high level and high profile initiative for marine and coastal spatial planning, business and nature conservation purposes, as an educational and promotional tool and as a mechanism for outreach to reinforce public awareness of our shared maritime heritage.
7. Support for other key infrastructures, including, for example, high performance computing, modelling and prediction capabilities, satellite and in-situ ocean observing systems, real-time seabed and water column observatories, moorings, platforms and research fleets which, because of their size and complexity, can only be operated and sustained on a partnership basis.
8. Support for a **regular (annual) European Marine Science and Technology Conference.**

1. Seminar Information [http://ec.europa.eu/research/conferences/index\\_en.cfm](http://ec.europa.eu/research/conferences/index_en.cfm)

2. European Marine Observation and Data Network (EMODN) Background Paper No. 4a of the Maritime Green Paper Consultation Process. SEC(2006)689.

## A PARTNERSHIP APPROACH

Given the importance and immensity of the task at hand, it is clear that no single country or institution can mobilise the resources and expertise needed to address the challenges and opportunities ahead. The EurOCEAN 2007 Conference agreed that a **Partnership Approach** is the only way to address these challenges and opportunities. This partnership must involve all the stakeholders: the European Commission, the Member States, the Research Funding Agencies, Marine and Maritime Representative Inter-Governmental Organisations and Networks, the European Marine Science Community, Maritime Industries, Local Government, and specialist NGOs. The diverse perspectives of these various stakeholder groups must be brought together in an holistic, creative and flexible way through dialogue and sustained action.

The prize will be to realise the aim of achieving a dynamic maritime economy, the sustainable governance and development of ocean resources and to build on the strengths which have historically underpinned Europe's maritime leadership and will continue to do so into the future.

*“Only excellence in marine research and technology would allow us to deliver the goal of a thriving maritime economy and the realisation of the full potential of sea-based activities in an environmentally sustainable manner”.*

- Joe Borg, EU Commissioner for Fisheries and Maritime Affairs, EurOCEAN 2007. June 2007.

## THE EUROCEAN 2007 CONFERENCE ORGANISING COMMITTEE

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## THE ABERDEEN DECLARATION

The **EurOCEAN 2007 Conference** (Aberdeen, 2007) is a successor to the MAST DAYS / EurOCEAN Conference Series held in Brussels (1994), Sorrento (1996), Lisbon (1998), Hamburg (2000) and Galway (2004).

**EurOCEAN 2007** provided a major opportunity for the European marine science and technology community to contribute to the debate on a future maritime policy for the European Union and to formulate a maritime vision in response to the Maritime Policy Green Paper. The EurOCEAN 2007 Conference was held in the Aberdeen Exhibition and Conference Centre (AECC), Aberdeen, Scotland on Friday 22nd June 2007.

The **EurOCEAN 2007 Conference and the drafting of the Aberdeen Declaration** was co-ordinated by a Committee representing a number of leading European and Regional Marine Science and Technology Consortia, Networks and Institutions including: intergovernmental organisations such as the International Council for the Exploration of the Seas (ICES) and the Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée (CIESM); pan-European Networks such as the Marine Board-ESF, the European Fisheries and Aquaculture Research Organisation (EFARO), the European Global Ocean Observing System (EuroGOOS), the European Consortium for Ocean Research Drilling (ECORD); National Networks such as Konsortium Deutsche Meeresforschung (KDM) and the Scottish Association for Marine Science (SAMS); industry networks such as the Waterborne Technology Platform, European Aquaculture Society (EAS) and the International Association of Oil and Gas Producers (OGP) and a number of national marine research institutes (Ifremer, NOC, NERC, MI). A representative of the IEEE/OES OCEANS '07 Conference Organising Committee was also involved. The Marine Board-ESF provided the Secretariat to the Organising Committee.

The EurOCEAN 2007 Conference was timed to follow the IEEE/OES OCEANS '07 Conference which was held at the same venue in Aberdeen from 18th – 21st June 2007.

The **Aberdeen 2007 Declaration** is focused on the development of the European Maritime Policy. It builds on and up-dates the **Galway Declaration (EurOCEAN 2004)** which had a major influence on EU and National Funding Programmes for Marine and Maritime Research Programmes and Strategies. The Declaration also draws on the **Seminar on Marine Sciences and Technologies in FP7** (Brussels, 16th January 2007), the **Germany EU Presidency Conference: Towards a Future Maritime Policy for the Union** (Bremen, 2 – 4th May 2007) and on the written submissions to the Maritime Green Paper Consultative Process made by the various groups participating in the organisation of EurOCEAN 2007.

In this way the Conference, and resultant Aberdeen Declaration approved during the EurOCEAN 2007 Conference, received input and endorsement from a multitude of European Marine Research Organisations, Networks and individual scientists.

web address: <http://ec.europa.eu/maritimeaffairs/eurocean2007.html>



The EuroOCEAN 2007 Conference was sponsored by the European Commission

