EuroMarine

Integration of European Marine Research Networks of Excellence

Michael Thorndyke
Co-ordinator

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Co-ordinating Team

Background

2004-2008: FP6 Networks of Excellences

- EUR-OCEANS
- MarBEF
- MGE

2005: Common priorities identified

- Identifying the new scientific challenges for marine sciences
- Establishing a European doctoral school
- Sharing of scientific facilities
- Mobility of personnel

2009: submission of EuroMarine proposal

ISL 1
FIN 2
NOR 8
SWE 1
EST 1
RUS 1
LVA 1
DEN 4
LTU 1
GBR 21
NLD 11
POL 3
BEL 6
DEU 13
FRA 9
CHE 1
SVN 1
UKR 1
ITA 7
ESP 8
PRT 4
GRC 2
TUR 1
TUN 1
MAR 1
DZA 1
ISR 2
ZAF 1
CHL 2

The former NoE members; number of partners per country

More than 120 RPOs + More than 1000 Scientists

= *Unique Potential*

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INTEGRATION OF EUROPEAN MARINE RESEARCH NETWORKS OF EXCELLENCE

Objectives

- To integrate (former) EUR-OCEANS, MarBEF and Marine Genomics Europe into one organization, *"The EuroMarine Consortium" or "EuroMarine +"*
- To create a roadmap for common programming of research activities,
- To create synergies between different scientific fields, moving towards an integrated research strategy and a shared vision for the oceans of tomorrow.
- To bring together leading European marine research organizations and their scientists to create a major internationally competitive network.

EuroMarine:

"From Genes to Ecosystems in Changing Oceans"

Many marine research questions can only be answered using a multidisciplinary methodology; genomics and other new emerging technologies integrated with ecological, physical and biogeochemical ecosystem level approaches.

- Improve transfer of information
- From model organisms to environment
- From experimental systems to a dynamic natural environment

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EUROMARINE RESEARCH STRATEGY REPORT

EuroMarine Deliverable 3.2.

Catherine Boyen, Carlo Heip, Philippe Cury,
Pierre-François Baisnée, Colin Brownlee,
Kristin Tessmar-Raible, et al.

Publication of the Report

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Euromarine Research Strategy

- **UNDERSTANDING MARINE ECOSYSTEMS FOR HEALTHY OCEANS**

- **BUILDING SCENARIOS FOR MARINE ECOSYSTEMS UNDER CHANGING OCEANS**

- **MARINE SCIENCE AS A PROVIDER OF NEW CONCEPTS FOR INNOVATION AND TECHNOLOGY**

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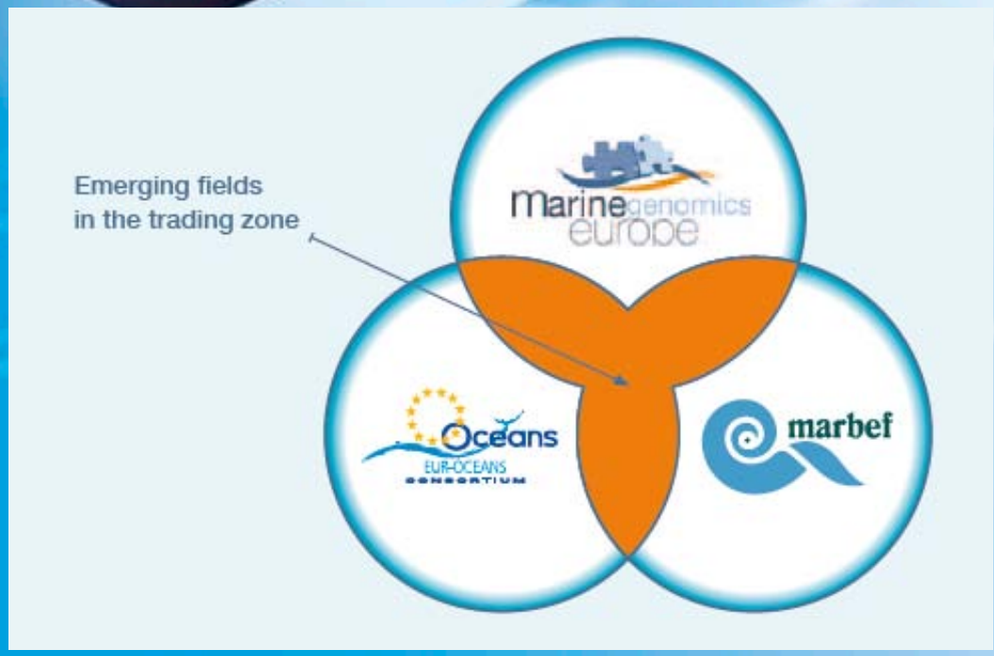

Identification of 6 key emerging fields, exemplifying strategic issues common to the three NoE communities for which combined expertise was essential in order to be addressed.

- Intra-generational and intergenerational evolution and forecasting of living marine resources.
- Complex interactions including tipping points, regime shifts and shifting assemblages.
- Effects of global warming, acidification, sea level rise, hypoxia and biodiversity change on ecosystems.
- Marine rhythms of life and their alterations;
- Valuation of goods and services delivered by marine ecosystems;
- Restoration and conservation of sustainable marine ecosystems.

EuroMarine+ Impact and Added Value

- **Improving utilization, development and management of European marine scientific research potential.**

- **Increased shared use of expensive infrastructures (ships, experimental facilities, mesocosms, high tech instrumentation, databases etc.).**

- **Increased availability of data and potential for creating centres of learning, research and education at highest level.**

- **Providing a common shared platform for key activities derived from the three NoEs' experiences.**

EuroMarine+ Impact and Added Value

- **Promoting the development of innovative activities in the “trading zones” (see research strategy).**

- **Build scenarios for marine ecosystems in context of Global Change**

- **Bontribute to current initiatives to build European and global observation systems (e.g. GEOBON)**

The Business Plan: Why EM+ is unique

- Broad coverage of almost all relevant disciplines from a **bottom-up** perspective over most European countries.

- Providing visibility to many “small players” in the marine realm.

- Small players can have BIG ideas

- Linking education and training; providing new services and products based on a thorough understanding of the marine environment.

- Identifying and addressing the new scientific challenges for marine sciences through joint research programming (research strategy & roadmap).

- Building and enhancing capacity through linking the further development of research infrastructure, cross-disciplinary training and mobility of personnel,

Training-Related Activities

- Refinement and upgrading of MSc and PhD degree programmes including on-going analysis of new course needs.

- Developing curriculum structure and pre-proposal for a multi-track PhD degree programme

- Establish a multi-level mobility programme that includes: summer courses and competency training; and an exchange fellowship programme (the latter covering PhD, post-doc, technical and senior research personnel)

- Establishing a multi-track European PhD programme in Marine Sciences (ITN and Erasmus Mundus)

Provision of Expert Products and Services.

- **<u>Act as a central marine node for delivering specific expertise to Marine Board, JPIs, Era-Nets, ESFRIs etc</u>.;**

- Development of web services;
- Creation of outreach materials (editorial activities, videos/films, newsletters);
- Networking activities with other communication departments;
- Organisations of meetings and events & coordination of activities;

Climate Change impacts Seas and Oceans

Eugene Murphy

Predicting change in the Southern Ocean

"..the importance of developing and integrated understanding of the structure and functioning of the whole ecosystem…."

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Climate Change impacts Seas and Oceans

Ulf Riebesell: Ocean change: From organism responses to ecosystem and biogeochemical impacts

Open Questions

“Potential for adaptation”
“Ecosystems sensitivity”
“Biogeochemical feedbacks”
“Socio-economic consequences”

To understand this we need to understand:

- Ocean Currents, Physics, Ocean-atmosphere interactions
- Ocean Chemistry and Geo-Chemistry
- Biology (Microbes to Mammals)
- Ecosystem Structure and Function (Biodiversity and Eco-Physiology)
- Land-Sea Integration in the Coastal Zone (e.g. N from Rivers)

All of this expertise in EM+

Proof of Concept: http://www.bioacid.de/front_content.php?idcat=469&idlang=22

Why EuroMarine?

http://apod.nasa.gov/apod/ap080225.html

http://www.gtc.iac.es/GTChome.php

Why EuroMarine?

H 2020: Call for Blue Growth: Unlocking the potential of Seas and Oceans

BG 11 - 2014: Monitoring marine and maritime research, disseminating and valorising research outputs.

BG 13 - 2014 Ocean literacy – Engaging with society – Social Innovation

MoU Signatories

AquaTT	Ireland
Ecological Consultancy Services Ltd (EcoServe)	Ireland
National University of Ireland Galway	Ireland
CoNIZMa	Italy
Universita Degli Studi Di Padova	Italy
Statione Zoologica Anton Dohr (SNZ)	Italy
CNR Department of Earth System Science and Environmental Technologies	Italy
University of Pisa	Italy
CNR Istituto di Biomedicina e Immunologia Moleculare "Albert Monroy"	Italy
CNR Istitituto di Scienze Marine -ISMAR	Italy
National Institute of Oceanography and Experimental Geophysics (OGS)	Italy
Alma Mater Stodiomrum - Universita di Bologna, Dipartimento di Sciencze Biologiche, Geologiche e Ambientali	Italy
Indtitut National de Recherche Halieutique (INRH)	Morroco
University Mohamed V-Agdal	Morroco
Rijskuniversiteit Groningen (RUG)	Netherlands
Royal Netherlands Institute for Sea Research (NIOZ)	Netherlands
University of Bergen	Norway
Norwegian University of Science and Technology (NTNU)	Norway
University of Oslo, faculty of Mathematics and Natural Sciences (UiO)	Norway
Institute of Marine Research	Norway
Instituto del mar del Peru (IMARPE)	Peru
Institute of Oceanology PAN (IO PAN)	Poland
Uniwersytet GDANSKI	Poland
CCMAR Algarve	Portugal
Universidade de Aveiro (CESAM)	Portugal

MoU Signatories

Centro de Oceanografia	Portugal
Centro Interdisciplinar de Investigacao Marinha e Ambiental (CIIMAR)	Portugal
University of the Azores, Instituto do mar (IMAR)	Portugal (the Azores)
White Sea Biological Station of the Zoological Institute (RAS)	Russia
Scottish association for marine science (SAMS)	Scottland
Nacionalni Institut Za Biologijo	Slovenija
University of Cape Town	South Africa
Universitat de les illes Balears	Spain
Azti Tecnalia	Spain
Universitat de Barcelona	Spain
Spanish Institute of Oceanography (IEO)	Spain
University of Gothenburg	Sweden
SİNOP UNIVERSITY FACULTY OF FISHERIES (SNU-FF)	Turkey
Marine Biological Association (MBA)	United Kingdom
University of Southampton	United Kingdom
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)	United Kingdom
The Natural History Museum	United Kingdom
Bangor University, Collge of natural sciences	United Kingdom
Newcastle University/Tyne	United Kingdom
Plymouth Marine Laboratory (PML)	United Kingdom
British Antarctic Survey (BAS)	United Kingdom
University of Oxford	United Kingdom

Applications for EM+ HQ

- Sinop University Fisheries Faculty, Turkey

- The Zoological Museum Hamburg, Germany

- CNRS INEE & Institut de Recherche pour le Dévelopement (IRD), France

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Carlo Heip
1945 – 2013

Fees and Voting rights

OPTION A

Full membership at 30 K euros gives 2 votes in the Governing Board
Full membership at 10K euros gives 1 vote in the Governing Board
Associated membership at 5 K euros allows participation in the Governing Board without voting rights.
Associated membership at less than 5 K euros in cash and in kind contributors may attend to the Governing Board meetings

OPTION B
Full membership to in-cash contributors with one voting right in the Governing Board.
Associate membership to in-kind contributors with no voting rights.

OPTION C
Full membership to in-cash contributors. A pool of in-cash contributors representing XXX scientists weighs one voting right in the Governing Board.
Associate membership to in-kind contributors with no voting rights.