

general was very high. Some projects had to be revised or could be clustered. The revision was finalised in autumn 2004, and at the beginning of 2005 the RMP coordinators were asked to write the final RMP plan in workpackage format.

Finally, 19 RMPs were accepted (table 2) and presented at the General Assembly in Porto, Portugal (March 2005). Thanks to the strong commitment of the RMP coordinators, the total process of evaluating and selecting the RMPs has been finalised six months earlier than planned, allowing most RMPs to start within the first 18 months of the project.

The projects and research consortia in the RMP programme show an integrated mix of expertise and key areas and themes addressed. There are some very large cross-cutting projects that will address issues of relevance to the three joint research themes (workpackages 3, 4, 5). In addition, there are two RMPs addressing other workpackages (RMP 1-1 and 8-1). Other somewhat smaller projects specifically address one key area. These more focused in-depth projects may appear to conflict with the interactive tasks of the NoE, but that is not the case. In such cases, the consortium consists of top specialists who will jointly address topics to fill in specific gaps of the CSP and, in this way, add to the integration of research.

The basis for all RMP projects will be integration of knowledge, data, science and scientists, not only within projects but also between projects. All activities within MarBEF remain accessible and open to the science community. Training activities, exchange and outreach are important aspects, and the Scientific Steering Committee will guard that sufficient attention be given to the stakeholders, the end-users and the public at large. This is important in its own right, and it is also imperative, with the onset of the 7th Framework Programme, to let the European community know what we are doing and what we consider to be important marine biodiversity issues.

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Table 1: SELECTION CRITERIA USED FOR THE RESPONSIVE MODE PROJECTS

Selection criteria were:

- degree of innovation (none, moderate, strong) (max 3 points, weight 3x)
- degree of matching the aims of the key actions (none, moderate, strong) (max 3 points, weight 3x)
- degree of matching with the aims of the CSP (none, moderate, strong) (max 3 points, weight 2x)
- degree of accordance with the general aims of MarBEF
 - integration of themes (cross cutting WPs) (none, 2 or 3 themes) (max 3 points, weight 3x)
 - integration of research disciplines (none, moderate, strong) (max 3 points, weight 2x)
 - integration of institutes (insufficient, few, several) (max 3 points, weight 1x)
- the requested budget (outrageous, too high, realistic) (max 3 points, weight 1x)

The proposals were divided as follows:

- (1) meets most criteria and belonging to the top priority projects
- (2) promising, yet needs polishing and/or re-direction
- (3) not meeting the criteria and to be rejected.

Table 2: SELECTED RESPONSIVE MODE PROJECTS

WP1: Data integration

- Bringing biogeographical data online.

WP3 Theme 1: Global patterns of marine biodiversity across ecosystems

- Causes and consequences of changing marine biodiversity – a fish and fisheries perspective.
- Biodiversity and ecosystem function under changing climatic conditions – the Arctic as a model system (ArctEco).
- Deep-sea & Extreme Environments, Patterns of Species and Ecosystem Time Series (DEEPSETS).
- Meiobenthic And Nematode biodiversity – Unravelling Ecological and Latitudinal Aspects (MANUELA).
- Web-accessible Taxonomic Expertise in MarBEF: PROviding an e-Platform for the European Taxonomists (PROPE-taxon).
- Large-scale and long-term Networking on the observation of Global Change and its impact on Marine Biodiversity (LargeNet).
- Integration of different methods to study ocean patterns and changes along the Mid-Atlantic Ridge.
- European integration of marine microplankton research (MARPLAN).
- Modelling key aspects of marine biodiversity.

WP4 Theme 2: Comparative analysis of marine biodiversity and ecosystem functionality

- Genetic Biodiversity (GBIRM).
- The role of native and/or invasive ecosystem engineers in explaining biodiversity.
- Pan-European gradients in propagation and settlement events.
- Effects of biodiversity on the functioning and stability of marine ecosystems – European-scale comparisons.
- Functioning of FOOD WEBS across ecosystems of different BIOdiversity level (FOODWEBIO).
- Microbial diversity and ecosystem functions: concepts, open questions and recommendations for integration of microbes into general ecological frameworks.
- Role of Secondary Metabolites in Ecosystem Biodiversity (ROSEMEB).

WP5 Theme 3: The socio-economic importance of marine biodiversity

- Development of decision support systems.

WP8: Outreach

- Pilot MarBEF Coast Watch network of students and amateurs in Europe.

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RESEARCH THEMES

MarBEF Theme 1: Global Patterns of Marine Biodiversity Across Ecosystems

Workshops and database

By John Gray & Annelise Fleddum

Workshops

THEME 1 HAS ORGANISED three workshops so far this year. The first, held in Banyuls, France, (2–4 February) on the subject “How to Detect Changes in Biodiversity – Concept, Methods and Tools,” was arranged by Doris Schiedek, Antoine Gremare and Keith Cooper. The purpose was to get a broad overview of concepts and methodologies and their application for monitoring and tracking changes in biodiversity at different temporal and spatial scales in a European context. There were 26 participants in total. The main topics discussed were:

- how to gain an overview of concepts and strategies to track changes in biodiversity;
- development of a database on manuals and protocols;
- agreement on concepts and appropriate methods to be applied using information and data from selected locations.

The workshop consisted of presentations and sub-group discussions.

The second workshop took place in Helgoland (2–4 March) on the subject “Long-term Dataset Networking.” The purpose was to establish a large-scale network of research locations along the European coast to assess long-term changes in biodiversity. There were 20 participants and the topics for discussion were:

- identification and presentation of suites of data-sets (pelagic, soft and hard bottom);
- data policy;
- discussion of hypotheses to test and identify tools for comparison/evaluation of data-sets;
- an action plan for the LargeNet (Large-scale and long-term Networking on the observation of Global Change and its impact on Marine Biodiversity) MarBEF RMP (Responsive Mode Project).

This workshop also consisted of presentations and sub-group discussions.

The third workshop, held in Oslo (15–17 March), consisted of a small group of invited scientists working with soft benthic data collected from MarBEF partners. There were 11 participants working on various statistical problems. The aim was to test the user-



Photograph: IMBC

friendliness and quality of the database and then to apply statistical and other approaches that might be used by the wider Theme 1 community. Some of the ideas analysed included: the variation in patterns of mean size of organisms with latitude and longitude; traits analyses and a null model for traits; a new model of species structure involving the number of species and their proportional abundance; and models of species-abundance patterns for different geographical areas. These tests resulted in ten hypotheses that would be appropriate for testing on the database by the wider Theme 1 community at the forthcoming workshop in Crete (24–28 October).

All of these workshops sought to gain a better understanding of how marine biodiversity varies across spatial and temporal scales, which is the most important task within Theme 1. The Banyuls, Helgoland and Crete workshops will also be helpful in structuring the LargeNet RMP.

Marine Biodiversity Database

Anders Bjørgesæter (part-time MarBEF research assistant) has spent much time developing a unique database that is probably the largest of its type in the world devoted to marine biodiversity. The Microsoft Access database includes quantitative data on soft-bottom benthic invertebrates ranging geographically from the Arctic to the North

Atlantic, coastal Norway and the Irish, Mediterranean and Black Seas. All the species have been quality-checked against ERMS. In summary, the database contains 3,616 taxa and 1,064,225 individuals, including 26,313 juveniles. Approximately 80% of the taxa are identified to species level. They are from a total of 1,243 sediment samples.

Presently, the database contains only soft-bottom benthic data, but will be enlarged over time to include datasets from other MarBEF participants. We urge all MarBEF participants working on other aspects of biodiversity to develop a similar data structure for their sphere of interest. We in Oslo do not have the expertise to do the necessary quality assurance to compile databases from other habitats. The database will be available for free download to all participants at the Crete workshop and will be open for download to all MarBEF participants thereafter. We encourage everyone within the MarBEF community to work on the data that are available and we welcome any comments on the user-friendliness or other aspects of the database.

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