Progress with Theme 1 data analysis activities

By Simon Claus, Christos Arvanitidis, Annelise Fleddum & Edward Vanden Berghe

THE FOURTH AND LAST Theme 1 workshop not only experienced the famous Greek hospitality but also became a dynamic and fruitful workshop. From 24 to 27 October 2005, MarBEF Theme 1 participants met at the new installations of the Hellenic Centre of Marine Research (HCMR) in Crete. Theme 1 co-chair, Professor John Gray, was unable to attend the meeting, but he made available a series of audiovisual presentations with his views and possible hypothesis that could be tackled by the group.

The strategy of the meeting, as approved by all the attendants, was to listen first to all scientific presentations and possible hypotheses that should be tested on the integrated soft-bottom database and, then, to split up in different working groups. The themes addressed by these working groups were:

- Biotic indices (led by Antoine Grémare)
- Broad-scale patterns (led by Paul Renaud)
- Comparing different scales (led by Vincent Escaravage & Peter Herman)
- Functional traits (led by Annelise Fleddum)
- Taxonomic distinctness (led by Paul Sommerfield & Christos Arvanitidis)

The final session of the workshop tackled questions concerning the data policy (what will happen with these data after the MarBEF project?), publishing and co-authorship. There was a common feeling that the articles deriving from the database could be published as a special issue in a peer-reviewed journal. Whether this journal should be an ‘open access’ journal remains an open question.

The most important result of the workshop in Crete is that for all the aforementioned working groups there is a tight time-table and names assigned to tasks, so that the first draft of the papers to come must be communicated to the consortium by the next GA MarBEF meeting in Lecce.

Macrobenthos: the European marine soft-bottom benthic database

The database that had been compiled and tested during the Oslo workshop (15-17/03/2005) was further expanded with 24 new datasets. The structure of this second version is different. The new, enlarged database (Macrobenthos database) consists of four main tables: dr (distribution records), tu (taxonomy), stations (linked to position and abiotic readings) and metadata. The database contains at the moment 458,424 distribution records, 11,358 different taxa, 22,030 stations and 40,766 abiotic readings. Depth is available for 385,150 distribution records (86%).

Novel features of the Macrobenthos database are the different tools for the calculation of various indices. To analyse just a part of the data – for example, only the data from the Mediterranean Sea after 1990 or data from selected datasets – one can make a sub-selection on the database. Based on these selections, to calculate diversity indices (e.g. Shannon-Wiener index, ES(50)), biotic indices (Borja’s AMBI index, Rosenberg/Blomqvist’s Biotic Quality index (BOI)) and the taxonomic distinctness indices (TD) now are an easy task.

Theme 1 acknowledges Dr Ángel Borja for delivering the Borja codes for all the aforementioned working groups. The matching of the macrobenthos’ names to those deposited in the European Register of Marine Species (ERM5) facilitated the calculation of latter category of indices (TD) and avoided having an inflated estimate of European marine biodiversity by eliminating spelling variations and alternative synonyms.

On the request of the scientific community, the different stations used in the selection...
**Research Themes**

**MarBEF Theme 2: Marine Biodiversity and Ecosystem Functioning**

**RMPs: progress report**

By Rebecca Aspden & Iris Hendricks

**The Responsive Mode Projects** of MarBEF (Phase 2) began in 2005 with sessions to discuss and develop the RMPs included in the organisation of Milestone 4-SCP-3.1, a workshop entitled “Ecosystem Stability vs Marine Biodiversity: Assessing the Evidence.”

This workshop was held in Tavira, Portugal, and was planned so that participants could combine the workshop with the GA meeting in Porto in March 2005 (see report in Autumn 2005 edition of the MarBEF newsletter). The RMP phase is now well and truly under way, and Theme 2 members have taken the first steps towards addressing the key issues of this research area.

Theme 2 consists of seven RMPs (Table 1), previously introduced in the Autumn 2005 MarBEF newsletter. The overall aims of these RMPs are to determine rates of ecosystem functionality in both benthic and pelagic systems, by generating theories, models and experimental tests of the relationship between marine biodiversity and ecosystem function.

All seven of the Theme 2 RMPs have hosted their kick-off meetings, and plans have been made to begin experimental tests in each of the key areas. Details of the meetings and any downloads regarding these RMPs can be obtained from the individual RMP websites (Table 1), and minutes of the kick-off workshops are placed as deliverables in the download section of the MarBEF webpage (www.marbef.org).

BIOFUSE has held two meetings, beginning with a workshop in Dublin, Ireland, in July 2005. The second workshop was held in Viana, Portugal, in January 2006. During the Viana workshop, experimental designs and protocols were finalised in order to address “quantifying stability at sites of naturally differing diversity and exposure to disturbance.”

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**Table 1: Theme 2 RMPs (Responsive Mode Projects)**

<table>
<thead>
<tr>
<th>RMP code</th>
<th>Title</th>
<th>Principal Investigator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMP 4-1</td>
<td>RMP on Genetic Biodiversity (GBIRM) (website under construction)</td>
<td>J.-P. Ferral</td>
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<tr>
<td>RMP 4-2</td>
<td>The role of native and/or invasive ecosystem engineers in explaining biodiversity</td>
<td>T. Bouma, P. Herman, T. Ysebaert</td>
</tr>
<tr>
<td>RMP 4-3</td>
<td>Pan-European gradients in propagation and settlement events</td>
<td>K. Philippart</td>
</tr>
<tr>
<td>RMP 4-5</td>
<td>Functioning of FO O DW EBS across ecosystems of different BIO diversity level (FO O DW EBIT) (<a href="http://www.marbef.org/projects/foodwebio/index.php">http://www.marbef.org/projects/foodwebio/index.php</a>)</td>
<td>A. Sokolowski</td>
</tr>
<tr>
<td>RMP 4-6</td>
<td>Microbial diversity and ecosystem functions: concepts, open questions and recommendations for integration of microbes into general ecological frameworks</td>
<td>K. Jürgens, J.M. Gasol</td>
</tr>
<tr>
<td>RMP 4-7</td>
<td>Role of Secondary Metabolites in Ecosystem Biodiversity (RO SEMEB) (<a href="http://www.marbef.org/projects/rosemeb/index.php">http://www.marbef.org/projects/rosemeb/index.php</a>)</td>
<td>A. Ianora</td>
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