



EMODnet Thematic Lot n° 3 – Seabed habitats

4th bi-monthly Report

Reporting Period: 01/05/2014 – 30/06/2014

Date: 07/07/2014

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1. Highlights in this reporting period

Not applicable

2. Meetings held since last report

| Date | Location | Topic | Short Description |
|-------------|----------|-------------------------------|--|
| 2 Jun. 2014 | Telco | Atlantic advancement of work | - Provision of Macaronesia map - Agreement on common search for marine vegetation data for calibration purposes |
| 6 Jun. 2014 | Telco | Black Sea advancement of work | Two main topics in scope: - Black Sea depth zones - Black Sea list of habitats to model |

3. Work package updates

The aim for this summer is to provide three maps: Macaronesia, Adriatic, Biscaye and Iberia, so efforts have mostly been geared to this primary objective. However longer term issues are of course in focus, therefore recent activity has developed on the Black Sea, which is more of a challenge to the group given its specific features.

WP1 – EUNIS applicability

During the period partners provided input to ISPRA, coordinator of this WP, with a view to reach a consensus on the two main preliminary topics that condition the making of the map: a) definition of sensible biological zones, b) selection of habitats to be modelled for each bio-geographic basin.

1.1 Biological zone boundary definition

a) In the Black Sea and the Adriatic, masks will be constructed to identify the area influenced respectively by the Danube and Ukrainian bay rivers and the Po. In this mask we will use sediments and bathymetry to drive the differentiation between infralittoral vs. circalittoral. The masks will be constructed using salinity/water turbidity values to define areas most likely under highest river influence. Areas involved are the Po plume, the Crimean peninsula, Ukrainian and northern Romanian coasts.



b) The infralittoral lower boundary in the marine areas off of the southern Romanian shores (characterized by mixed rocky and sandy infralittoral) and of the northern Bulgarian coasts (as far south as the northernmost extension of Burgas bay) will be modeled based on energy at the seabed, i.e. the deepest limit in which the effects of waves are present and influence communities.

Figure 1. The infralittoral lower limit in the Bulgarian waters will be defined based on an energy model at the seabed in the northern part of the coasts while in the southern part, starting from Burgas Bay, the infralittoral lower limit will be defined based on light.

c) The infralittoral lower boundary in the marine areas from Burgas bay southwards and to the east into Turkey as far as the NE Black Sea will be defined based on light at the seabed. The *Cystoseira barbata* assemblage lower limit will be used to define the light threshold. With respect to PAR data in the Black Sea, a comparison was performed between in situ Zeu and satellite Zeu. Due to the absence of satellite data in the Mersin Bay, the comparison was run on 130 points only. Results are acceptable in the Mediterranean and they are likely to be confirmed upon obtaining the Mersin Bay data. However in the Black Sea there is no correlation. More discussions are needed but satellite data are thought to be hardly applicable to the BS due to its very strong absorption.

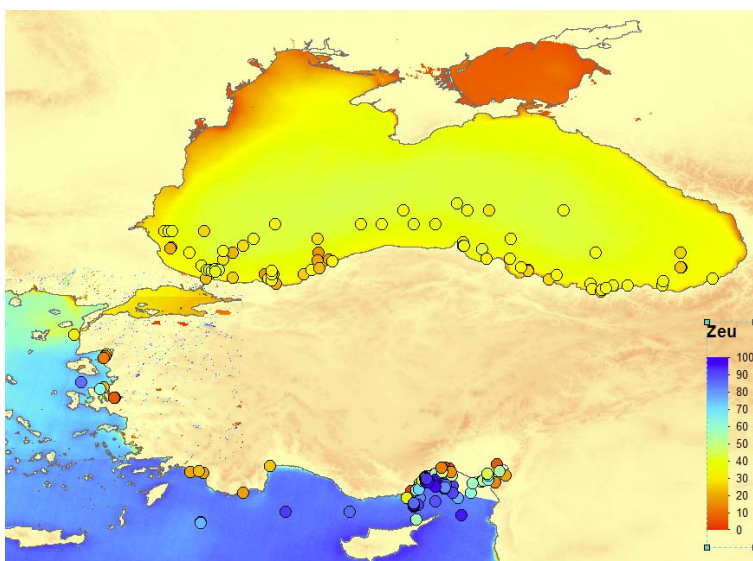


Figure 2: In-situ Zeu (dots) vs satellite Zeu (sea color).

d) The circalittoral lower limit will be defined on the basis of the continental shelf break but isopycnal densities on

seabottom will be used to define periazotic (15.2-16.2) and anoxic (>16.2) zones. METU informed that construction of the anoxic boundary based on isopycnic values is relatively straightforward and comparisons showed consistency between 16.2 contours obtained for different seasons and years. In contrast the boundary for the beginning of the periazotic zone is difficult to define because of a lot of seasonal variations. After a reanalysis of observation data for selected years has revealed some anomalies, MyOcean people were contacted (BS reanalysis data MHI NASU) and more reliable results are expected shortly.

Partners were tasked to report by the 14 July deadline for a final definition of these biological zones.

1.2 List of modeled habitats

The preliminary draft list being prepared by GeoEcomar and IO-BAS was discussed. Each habitat is to be allocated to one of 6 EUSeamap2 substrate types: sand, mud, sandy mud, muddy sand, coarse and mixed, rocky. Salinity, temperature, oxygen ranges are to be defined for each habitat type if they are the factor that allows to model one habitat type from the other.

These parameter values will have to be defined in terms of unit size of the respective environmental parameter through a validation process. This requires having enough spatial data (cartography with habitat distribution) on each habitat type which will then be correlated to the environmental parameter shapefile. Alternatively data on environmental parameter values can be obtained from bibliographic sources and are considered the next best available evidence when cartographic data are not available for validating the parameter threshold value.

By 14 July all BS partners were asked to try to reach a tentative further version of the preliminary habitat list. Another skype call in mid-July will enable partners to make for final adjustments to be included in the interim report by 25 July.

By the same date BS partners are requested to formulate the list of existing cartographies that could be used to consider *Mytilus* beds as a geomorphologic feature to be inserted as an additional substrate category (in a manner similar to what was done for *Posidonia* and *Cymodocea* beds in the Mediterranean).

WP2 – Data preparation

a) Regarding bathymetry, as new data are not yet available from the Hydrography lot, urEmodnet 1/4NM data are going to be used and where they are not available GEBCO will complete the coverage.

b) Regarding substrate data, we received on 19 June the deliverable from Geology lot WP3. This enables us to proceed with the habitat map on our priority basins. However WP3 provided substrate polygons only in places where the data reaches the scale 1/250000 and left other places as gaps. In fact for some of the latter, data with coarser scales do exist (referred to as “EU scale data”) and they would be all right for our initial delivery of three

basins. So where available the stitching will be made by HCMR between the two kinds of data with a view to obtain the majority of the Adriatic covered (except part of Albania) and a small part of the Canarias. ISPRA for Italy and IEO for the Canarias are helping out HCMR.

c) In terms of oceanographic data, the focus has been on designing a mask area, in Western Adriatic to start with (region influenced by the Po River), since biological zones will be made differently in the plume and outside the plume area (which will also be applied to other deltas such as the Danube). At time of writing the Adriatic mask is being finalised and an agreement is being found as to its better format for inclusion into the model.

WP3 – Collation of biological samples data

Collation of biological data sets in a "behind the scenes" ongoing task. For example data sets are being assembled by GeoEcoMar and IO-BAS benthos ecologists in the Black Sea where biological zones have to be revisited.

Following agreements at the Athens meeting in April some work has been done in the Atlantic area for this work package. The collation of marine vegetation data that could help better assess the photic zone is underway in Norway and France. New data is going to be acquired in a survey in Brittany (Roches de Penmarch, the MeshAtlantic study site) in July. Furthermore contacts are being taken with Portuguese and Spanish colleagues from the MeshAtlantic project to send us their data. Along with JNCC data, the idea is to test light energy (instead the fraction of light) at the deep boundary of dense vegetation patches in a two-step approach by first using the global data set from north to south and further splitting it per basin if non-conclusive.

WP4 – Thresholds for boundaries between EUNIS categories

No direct activity in WP4 in this period. Data are being collated (see above).

WP6 – Habitat map collation and WebGIS issues

The coordinator has sent request letters to the Adriatic countries not in the project (Slovenia, Croatia, Montenegro and Albania) and got some answers from them. Data requested were of two kinds: a) either biocenosis maps where available and free of access, b) local samples data to be used as validation data but not to be explicitly displayed in our outputs. These contacts will do their best to let us have available national data sets.

WP8 – Management and communication

a) Ifremer have recruited Christophe Bayle, a GIS expert with experience in deep sea biology, who will assist with EUSeaMap matters in the next 18 months. Along with Mickaël Vasquez

Christophe will handle the model for the preliminary summer runs and will get accustomed with the customisation tasks (particularly implementing mask areas and related conditions).

b) Another two skype calls will be organised in week 29 before people go off on holidays.

Their objective is to finalise the Black Sea list of habitat and to check progress of contributions from WP leaders to the interim report.

c) Ifremer are preparing for late fall an in-house Emodnet information information day with all lots and checkpoints represented (possibly by inviting a lot coordinator). Publicity will be made in the Brest oceanographic community to widen the attendance.

d) The EuSeaMap2 project was presented at the 2nd meeting of Turkey-EU Maritime Dialogue held at the headquarters of Ministry of Affairs, in Ankara, Turkey on 27 May under agenda item "Involvement in EMODNet seabed habitat mapping and marine data networking".

4. Specific challenges or difficulties encountered during the reporting period

a) We have not yet succeeded to secure Mediseh modelled data but that should be effective shortly. Collating data from outside the partnership is known to be quite a lengthy process, although not hopeless. On top of EU countries not in the project, the Mediterranean and Black Sea are bordered by many third party countries (actually 12 of them), which makes collation a big challenge. As expected a lot of time is required for people to gain insight in what we do and accept to collaborate.

b) As expected, seabed substrate coverage shows many gaps:

- in the Adriatic, there is a big gap in the east, which can be filled with 1/5M scale data from IBCM (as was the case in NW Med. in urEmodnet);

- In the Canaries, substrate data are rare and a large part of the archipelago, in the same way as in the Azores, will exhibit only biological zones, a default solution to real Eunis classes.

5. User Feedback

Not applicable.

6. Outreach and communication activities

Not applicable.

7. Updates on Progress Indicators

There has not been any progress reported on indicators. These will be summarised in the interim report due on 9 Sept.

Indicator 2 - Organisations supplying each type of data

Collation of legacy habitat maps in underway (in Norway, Spain, Adriatic riverine countries, the Black Sea, Natura 2000 in Greece) but this is a lengthy process not providing yet any reporting elements.