

SEVENTH FRAMEWORK PROGRAMME THEME 6 Environment

Collaborative project (Large-scale Integrating Project)

Project no: 246 933

Project Acronym: EURO-BASIN

Project title: European Basin-scale Analysis, Synthesis and Integration

**Deliverable 1.9 First Data Management REPORT**  
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Organisation name of the lead contractor of this deliverable: UniHB

Start date of project: 31.12.2010 Duration: 48 months

Project Coordinator: Michael St John, DTU Aqua

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Theme 6 Environment

Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission)	
RE	Restricted to a group specified by the consortium (including the Commission)	
CO	Confidential, only for members of the consortium (including the Commission)	

**Deliverable 1.9 First Data Management Report** provides an overview of data management activities for project EURO-BASIN.

**Executive Summary:**

The major tasks of WP1 have been initiated and demonstrate significant progress. Communication with partners responsible for Tasks 1.3.x was intensified in order to facilitate the preparation and delivery of data. Despite several delays, there are no major issues towards achieving the deliverables.

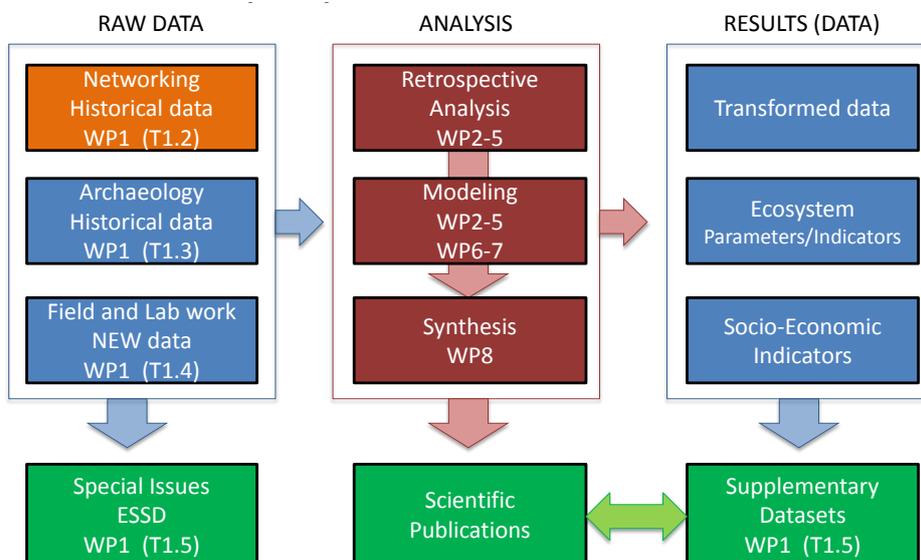
The Data Curator of EURO-BASIN was recruited as planned. Following a broadly advertised call to fill the position, over 20 applications were received. Dr. Janine FELDEN met all selection criteria and was hired for the duration of the project. The Data Curator is involved in Tasks 1.3 & 1.4.

WP1 Leader presented the workplan at project Kick-Off (Milestone 1, Feb 2011) and reported on the progress and next steps at the annual meeting in Plymouth. WP1 Leader participated to the Joint WP1-5 Mesocosm and Cruise planning (Milestone 9; Sept 2011). The EURO-BASIN data curator trained in statistical modeling and gave an introductory presentation about data management during the Training Workshop on Statistical Modelling Tools, for habitat models development (Milestone 13, Oct 2011). Both WP1 Leader and the data curator participated to the Joint WP1-5 Vital Rates Measurement Techniques for Plankton workshop and each gave presentations about data management and ontology developments, respectively (Jan 2012).

The main scientific contribution of WP1 is the publication of special issues in the peer-reviewed journal Earth System Science Data, as a mean to achieve data integration (T1.1). The first special issue brings together a review and compilation of historical data relevant to EURO-BASIN (Task 1.3). Data archaeology activities by the different partners have progressed and additional contributions will be included in the special issue. These include data compilations of fish stomach contents, plankton from in situ optical methods, and plankton vital rates. The special issue will be published in 2013, following a progressive submission/review process spread over ca.10 months.

## Relevance to the project & potential policy impact:

Data management activities coordinated by WP1 are relevant to several WPs as shown in the diagram below.



The following Table shows in more details the specific relevance of Tasks 1.3.x to WPs 2-5.

Data Archaeology (WP1)	Data Analysis
T1.3.1 (literature review)	WP2 Biological Pump
T1.3.2 (sample re-analysis)	WP3 Biogeography
T1.3.3 (rescue)	WP4 Trophic Flows
T1.3.4 (rescue)	
T1.3.5 (sample re-analysis)	
T1.3.6 (rescue)	WP5 Living Resources
T1.3.7 (data re-analysis)	
T1.3.8 (data re-analysis)	

## Report:

### **T1.1 Data integration**

Responsible: UNI-HB (Stéphane Pesant)

Start: Month 1; End Month 48.

This is an ongoing, overarching task that is dependent on Tasks 1.2 to 1.5. The first deliverables for Task 1.1 are the first data management report (D1.9) and the submission of data manuscripts to the peer-reviewed journal Earth System Science Data (D1.10). D1.9 is completed. D1.10 is dependent on deliverables D1.1-D1.8, and we expect delays ranging from 3 to 12 months in some of these deliverables. Moreover, D1.1 includes data that are part of a PhD Thesis, and the partner requests that access to data be restricted until their publication in November 2013. A progressive submission/review process will allow deliverables D1.1-D1.8 to be published in the ESSD special issue as they become available in 2013.



### **T1.2 Data Management: Networking**

T1.2.1: Create and co-chair a Data Management Advisory Group

Responsible: UNI-HB (Stéphane Pesant)

Start: Month 1; End Month 36.

Data Management Advisory Group (DMAG) meeting – (Milestone 6) – Only parts of the DMAG could attend the European Research Infrastructure symposium held in Brest in June 2011, so this target is only partially met. The DMAG contributes to writing the Introduction paper about EURO-BASIN data integration for the ESSD special issue.

### **T1.2.2: Access and assemble data holdings from mandated permanent archives (NODCs and WDCs)**

Responsible: UNI-HB (Stéphane Pesant)

Start: Month 1; End Month 36.

Interoperability among data centres is an ongoing activity of UniHB. The assembly of datasets for the North Atlantic basin will start after month 24.

### **T1.2.3: Maintain and develop, as needed the database infrastructure (WDC-MARE)**

Responsible: UNI-HB (Stéphane Pesant)

Start: Month 1; End Month 36.

This is a core activity of UniHB. Significant progress was made regarding the capacity to relate datasets to journal publications and the development of feature catalogues that will facilitate the search capabilities and the discovery of EURO-BASIN data in PANGAEA. The

feature catalogue will be mapped to the controlled vocabularies developed by NERC for SeaDataNet.

***T1.3 Data Management: Archaeology***

Responsible: UNI-HB (Stéphane Pesant, Janine Felden)

Start: Month 4; End Month 16.

Each subtask under Task 1.3 leads to a deliverable (i.e. D1.1-D1.8) and we expect delays in some of these deliverables (see details in subtasks below).

***T1.3.1 Consolidate historical data on rates of particulate matter downward flux***

Responsible: NERC (Adrian Martin, Alex Poulton, Chris Daniels, Sinhue-Torres-Valdes)

Start: Month 4; End Month 16.

The collection of historical data on POC flux in the North Atlantic progressed swiftly and deliverable D1.1 is completed. Ancillary data such as temperature, salinity, oxygen and nutrients have been extracted from the World Ocean Atlas to match the sampling locations and times at which POC data is available.

***Task 1.3.2 Consolidate recent data on key jellyfish species***

Responsible: SAHFOS (Claudia Castellani)

Start: Month 4; End Month 16.

The morphological and genetic analysis of jellyfish samples collected with the CPR and from other collections is progressing well and we expect only a 6 months delay in deliverable D1.2. Genetic analyses were performed on jellyfish material from 86 CPR samples collected in 2009 - 2011. The extraction of DNA from samples collected in 2009 had a low rate of success, but more recent samples are in a better condition and should yield better rates of success. Jellyfish sampled in the North West Atlantic with jellyfish-nets (i.e. 670µm mesh-size silk net) and in the North East Atlantic with smaller nets (i.e. 330µm mesh-size) will allow the identification and sequencing of Atlantic jellyfish species. Jellyfish specimens from time series available in the North East Atlantic were also identified and sequenced. These analyses will be the basis to construct a Jelly-fish DNA library.

***T1.3.3: Consolidate historical data on abundance of key zooplankton species***

Responsible: DTU-AQUA (Torkel Gissel Nielsen)

Start: Month 4; End Month 16.

The organization of historical data for West Greenland zooplankton has started and D1.3 is delayed by 6 months.

***T1.3.4: Rescue historical data with respect to abundance and biomass of plankton and fish in the North Atlantic***

Responsible: UNI-HB (Stéphane Pesant); VLIZ (Leen Vandepitte)

Start: Month 4; End Month 16.

This task is subcontracted to VLIZ, who manages the OBIS system. D1.4 is nearly completed.

***T1.3.5: Rescue historical data on abundance, size-spectra, biovolume and provide estimates of biomass for key zooplankton groups***

Responsible: CNRS (Lars Stemmann) & MRI-HAFRO (A. Gislason; Sólrún Sigurgeirsdóttir, sos@hafro.is)  
Start: Month 4; End Month 16.

This task shows good progress and we expect a 6 months delay in deliverable D1.5. Samples from the Norwegian Sea collected during May-June 2007-2011 (5 years) have been scanned, and images from 2009-2011 have been analysed. The number of samples analysed each year varies from 11-60. Samples collected before 2007 and now being scanned.

CNRS has worked on the rescue of historical data on abundance, size-spectra, biovolume and estimates of biomass for key zooplankton groups (e.g. Appendicularians, Chaetognaths, Cladocerans, Copepods, Decapods, Fish eggs, Gelatinous organisms and Pteropods) that were sampled in different areas of the North-Atlantic Ocean and Shelf Seas during the last 4 years (~70 samples all along Portugal coast in 2008, ~40 samples in the central Atlantic, ~20 samples in the Gulf Stream area during the TARA cruise, ~10 samples off French Brittany). All samples came from vertical WP2 nets (except MARECO cruise in central Atlantic where a multinet was used). The samples have been re-analyzed using a bench-top imaging system (the ZooScan system). Automatic recognition by the image analysis software has been performed and we are in the process of faunistical data validation. The goal is to obtain a first homogenized set of data for zooplankton from different pelagic systems in the North Atlantic.

***T1.3.6: Rescue historical data on catch and effort of North Atlantic fisheries***

Responsible: UNI-HB (Stéphane Pesant); ICES (Neil Holdsworth);  
Start: Month 4; End Month 16.

This task is subcontracted to ICES. Work has been done by ICES to further define specific deliverables of the subcontract, based on further input by WP5. The planned work deviates from that described in the proposal, leading to considerable delay in the signature of the subcontract. This leads to considerable delay (12 months) in deliverable D1.6. This delay should not affect deliverables of WP5 but has impacts on T1.3.7.

***T1.3.7: Consolidate historical data to provide spatially explicit estimates of stocks sizes, structure, biomass and diet of Tuna in the North Atlantic***

Responsible: CLS (Inna Senina, Patrick Lehodey); Participants: DTU-AQUA and MRI-HAFRO

Start: Month 4; End Month 16.

Some issues regarding data access have been identified and we expect a 6 months delay in deliverable D1.7. Albacore fishing data (catch, effort and size frequencies) will be retrieved directly from the ICCAT database (<http://www.iccat.int/en/accessingdb.htm>). This will require specific algorithms, but we expect no issue. Difficulties have been encountered in accessing acoustic data from the Atlantic. However, significant progress was made in developing the approach to process these data, based on other work for the Pacific.

Estimates of abundance of potential prey species for Bluefin Tuna from historical catch data has been re-allocated to DTU due to a change in work tasks but due to staff availability cannot be done until 2013. Some issues regarding access to acoustic data have been identified. Collaboration with ICES working groups will be established to find rapid solutions. The targeted data should be for relatively recent time periods (e. g., from 1950s

onwards) rather than historic. This is in line with the needs of WP5.

Spatial fishing data (catch, effort and size) of albacore tuna were obtained from ICCAT database and discussed with colleagues from AZTI (H Arrizabalaga) during two informal meetings in CLS Toulouse, and AZTI, Sukarrieta for the best definition of fisheries to be used in the model SEAPODYM. The spatially disaggregated data required a serious screening before to be used with the model.

A definition of 14 Atlantic albacore fisheries since 1970 at monthly 1° or 5° resolution, with corresponding size frequencies distribution at various resolution (1°x1° to 20° x 20°). These corrected files will be used for parameter optimization and validation. They can be provided to WP1.

Limited progress were achieved in acquisition of acoustic transect for the North Atlantic Basin. There is a need to identify the data owners in the BASIN partners. One issue is that we are looking for micronekton acoustic data, ie total abundance index while many acoustic cruises are targeting some key (exploited) species. Data needed are 38kHz transects with signal (either Sv or NASC) binned by vertical depth layers (e.g. 10 or 20 m from surface to X m, hopefully deeper than 600 m) and averaged along the track with latitude and longitude as well as the UTC time.

One-year series from the MARECO station (IMR, Bergen) has been identified that can be used for preliminary data assimilation experiment.

***T1.3.8: Consolidate historical data to provide spatially explicit estimates of stocks sizes, structure, biomass and diet of Herring, blue Whiting and Mackerel in the North Atlantic***

Responsible: IMR (W. Melle, Leif Nøttestad); Participants: IFREMER, CEFAS, IMI, MRI-HAFRO, AZTI

Start: Month 4; End Month 16.

This task shows good progress and we expect a short delay in deliverable D1.8. A database of gridded international abundance of fish stocks was completed. Diet data was also compiled.

***T1.4 Data Management: Safeguarding***

Responsible: UNI-HB (Stéphane Pesant, Janine Felden);

Start: Month 1; End Month 48

This is an ongoing task that will be most active following the completion of data archaeology and EURO-BASIN sampling cruises. We expect no issue.

***T1.5 Data Management: Publishing & Dissemination***

Responsible: UNI-HB (Stéphane Pesant, Janine Felden);

Start: Month 4; End Month 48

This is an ongoing task that will be most active following the completion of data archaeology and EURO-BASIN sampling cruises. Services developed under Task 1.2.3 are central to publishing and dissemination. We expect no issue.